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Reliability Analysis Center

A DoD Information Analysis Center

Technical Reliability Studies

SEARCH and RETRIEVAL INDEX to EOS/ESD SYMPOSIUM PROCEEDINGS 1979 to 1984

Spring 85

Prepared by:

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IIT Research Institute

Under Contract To:

Rome Air Development Center Griffiss AFB, NY 13441

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The Reliability Analysis Center is a DoD Information Analysis Center, operated by IIT Research Institute under contract to the Rome Air Development Center, AFSC.

The Reliability Analysis Center (RAC) is a Department of Defense Information Analysis Center sponsored by the Defense Logistics Agency, managed by the Rome Air Development Center (RADC), and operated at RADC by IIT Research Institute (IITRI). RAC is charged with the collection, analysis and dissemination of reliability information pertaining to parts used in electronic systems. The present scope includes integrated circuits, hybrids, discrete transistors and diodes, microwave devices, optoelectronics, and selected nonelectronic parts employed in military, space and commercial applications.

In addition, a System/Equipment Reliability Corporate Memory (RCM) is also operating under the auspices of the RAC and serves as the focal point for the collection and analysis of all reliability-related information and data on operating and planned military systems and equipment.

Data are collected on a continuous basis from a broad range of sources including testing laboratories, device and equipment manufacturers, government laboratories, and equipment users, both government and nongovernment. Automatic distribution lists, voluntary data submittal, and field failure reporting systems supplement an intensive data solicitation program.

Reliability data documents covering most of the device types mentioned above are available annually from RAC. Also, RAC provides reliability consulting and technical and bibliographic inquiry services which are fully discussed at the end of this document.

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PREFACE

The Reliability Analysis Center is pleased to publish TRS-4, "The Search and Retrieval Index to EOS/ESD Symposium Proceedings From 1979 to 1984." TRS-4 provides quick and efficient access to EOS/ESD-related references.

The EOS/ESD Index makes more accessible present information on failure mechanisms, failure causes, and potential technology problems from electrical overstress/electrostatic discharge. The information from the documents in the Proceedings provides recommendations for circumventing or mitigating potential EOS/ESD problems and also provides references to evaluation and qualification testing. Increased information retrieval capability given by this index avoids duplication of previous studies and unreliable processes.

R. Wanner developed the software support programs, with input assistance from J. Race. D. Rash provided organization, coordination and control of processes under the supervision of W. Turkowski. W. Crowell defined extra EOS/ESD index terms for inclusion into this document. The entire RAC technical staff participated in the indexing of the documents contained in the EOS/ESD Symposium Proceedings.

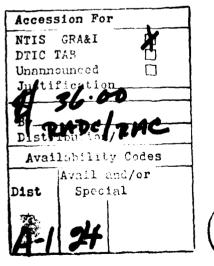




TABLE OF CONTENTS

			<u>Page</u>
1.0	INTRO	DUCTION	1
2.0	IMPLEN	MENTATION	1
3.0	INDEX	ING RATIONALE	1
4.0	ARRANG	SEMENT	2
5.0	SEARCH	1 EXAMPLE	4
6.0	CONCLU	JSION	5
SECTI	ON 1:	ALPHABETICAL LISTING OF TERMS	I-1
SECT	ON 2:	SUBJECT INDEX	II-1
SECT	ON 3:	AUTHOR INDEX	III-1
SECTI	ON 4:	CORPORATE INDEX	IV-1
SECT	ON 5:	KEYWORD IN TITLE INDEX	V-1
SECT	ON 6:	CHRONOLOGICAL LIST OF PAPERS	VI-1
APPEN	IDIX:	ADDITIONAL RAC SERVICES	A-1

1.0 INTRODUCTION

The RAC developed "The Search and Retrieval Index to EOS/ESD Symposium Proceedings From 1979 to 1984" to provide ready access to current information on EOS/ESD-related topics.

Containing indexes plus users' guide material, this document serves as a reference to aid in the utilization of information concerning all aspects of electrical overstress/electrostatic discharge as presented in the EOS/ESD Symposium Proceedings. This structured index provides a quick and efficient access to references for a given topic. The increased information retrieval capability provided by this index prevents duplication of previous efforts and will help avoid the use of unreliable processes.

The EOS/ESD Symposium Proceedings are available from IIT Research Institute. Orders for EOS/ESD Symposium Proceedings should be directed to: Charles A. Cox, IITRI/Reliability Analysis Center, RADC/RAC, Griffiss Air Force Base, NY 13441-5700. To determine price and availability call (315) 330-4151, Autovon 587-4151.

2.0 IMPLEMENTATION

These indexes were composed by IITRI's Plexus P/60 computer using the UNIX Operating System. The manuscript was printed out on an Anderson Jacobson (Model AJ832) terminal.

3.0 INDEXING RATIONALE

For each paper in the Proceedings, two engineers with relevant expertise in that subject were assigned to independently read and index that article. The terms for these indexes were selected from a list of preselected index terms. The engineers' instructions included selecting those index terms for which the article had relevant information. To maintain flexibility in the index term list, periodic reviews and evaluations add new index terms.

4.0 ARRANGEMENT

This publication is arranged in six selections:

- (1) Alphabetical Listing of Index Terms
- (2) Subject Index
- (3) Author Index
- (4) Corporate Index
- (5) Keyword in Title Index
- (6) Chronological Paper Index

Each entry in each index uses the document accession number for location purposes in the RAC library. The document accession number also provides for traceability purposes to access abstracts which are not computerized.

The Alphabetical List of Index Terms, a 5-page list of terms without citations, serves as a lookup table for the subject index, which it precedes. The alphabetical list of terms identifies the category under which the index term appears by listing first the index term, then the categories for each index term, and then the number of documents for that index term within the category.

Index Term	<u>Categories</u>	<u>Documents</u>
Reliability	Design Considerations Semiconductor Technology	2
Reliability	Systems	5

This format allows the index term to remain generic while the categories narrow the focus to a single area of interest for the Subject Index. Using the Subject Index necessitates scanning these tables first to provide the following useful benefits: the researcher develops a search

strategy by (1) relevant association of subjects contained in the Alphabetical List of Terms with items of interest, (2) minimizing the likelihood of overlooking a highly relevant citation, and (3) constructing a source availability within the EOSs by the number of documents dealing with the item of interest.

The Subject Index alphabetically lists index terms from Section I with citations. The index terms and categories remain in this section except the categories follow the index term on the same line in brackets.

INDEX TERM - CATEGORY

DOCUMENT - SEQUENCE NUMBER TITLE YEAR PAGE

Reliability [Design Considerations,
Semiconductor Technology]

18214- 5 Latent ESD Failures 82 [41-48]

The citations include the RAC document accession number, the title of the paper and the paper number. Including the title provides a possibility for selecting the most conveniently appropriate papers and eliminating those not applicable without the necessity of looking up more information elsewhere. Skillful use of this index can lead to deeper insight into EOS/ESD phenomena and perhaps new discoveries from the cross-pollination of related studies.

The Author Index alphabetically lists authors cited in the EOS/ESD Proceedings, whether principal or secondary. For each paper up to three authors were identified as they appeared on the paper.

The Corporate Index alphabetically lists corporations, companies, institutions, and government agencies with whom the authors were affiliated at the time the papers were prepared. Citations in the index include paper number and title. For each paper only the first company that appeared on the paper was cited.

The Keyword in Title Index alphabetically lists selected keywords n the title of the paper. Citations include paper number and title. he use of this index locates papers for which the keyword is a rincipal topic.

The Chronological List of Papers lists by page and document ccession numbers the last paper of the 1984 Proceedings first, then the ollowing papers in descending numerical order until the first paper in he 1979 Proceedings appears as the last entry. Following each document ccession number appears the title of the paper, pages, author(s), their orporate affiliation, and an alphabetical list of all the index terms pplied to the particular paper. When an index of another section cites paper, a profile of the paper's content can be deduced from the index erms appearing within the chronological paper list. The categories of he index terms remain the same, except for occasional abbreviations.

.O SEARCH EXAMPLE

The following example illustrates the use of Section 1, lphabetical List of Terms, and Section II, Subject Index:

Suppose we are interested in studying EOS Models. The possible erms for finding applicable citations, we decide, would be "Models," Modeling," and "Mathematical Models." Scanning Section I for these erms we find the following terms listed by relevant association:

Reliability Modeling Techniques Models/Theory/Equations Mathematical Analysis

When these terms are looked up in the Subject Index (Section II) he following citations are accepted for study:

79	126-132	82	56-61
79	133-139	82	62-70
81	132-138	82	76-81
82	19-33	84	136-143

By examining the index terms of the above list of papers as they appear in Section 6, Chronological List of Papers, an additional number of apparently applicable terms could be selected to obtain additional citations for further related study.

6.0 CONCLUSION

The Reliability Analysis Center published this document to provide a faster and more efficient method of searching for valuable information contained in the EOS/ESD Proceedings. The Reliability Analysis Center intended with this document, as with previous publications, to maintain up-to-date information on electrical overstress/electrostatic discharge implications for advanced technologies and to provide a knowledge base necessary to control EOS/ESD.

EOS/ESD SIMPOSIUM INDEX		
TERM-CATEGORY		
ENT-SEQUENCE NO. TITLE	YEAR	PACES
TIME DOD MATERIAL CAND POSTERMENT TECTINO		
TIME [ESD, MATERIALS AND EQUIPMENT, TESTING]		
.5-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	79 [1	26-132]
;N CONSIDERATIONS [SEMICONDUCTOR TECHNOLOGY]		
)5-16 CRITICAL CONSIDERATIONS FOR ESD TESTING	84 []	04-111]
'2- 1 ESD-HOW OFTEN DOES IT HAPPEN?	83 [1	•
72-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS 72-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES		177-180] 181-184]
14-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES	82 []	124-130]
14-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS		[31-135]
17- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION	81 (9)-13 J
16-13 SOS PROTECTION: THE DESIGN PROBLEM	80 [8	31-86]
16-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS	80 [8	37 - 94]
16-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR		[67-175]
15- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE	79 [4	i-6]
15- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	79 [2	27-35]
GN FOR TESTABILITY [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]		
72- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV	83 [3	37-47]
14-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	Ξ.	94-109]
14-14 METALLOPLASTICS	1	110-114]
14-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS	_	115-119}
14-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 14-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES	-	[20-123] [24-130]
14-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA		157-164]
14-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION	-	[69-174]
14-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES		175-178]
14-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL		179-184]
14-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS		185-189]
17- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 16-32 AN EVALUATION OF WRIST STRAP PARAMETERS	81 [1	l-8] 218-224]
16-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD	-	225-230]
15-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	=	38-96 j
15-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS	79 [1	104-108]
CTOR/SENSOR [OPTOELECTRONIC, SEMICONDUCTOR DEVICE]		
17-33 EOS DAMAGE IN SILICON SOLAR CELLS	81 [2	209-235]
LOPMENT PROGRAM [SEMICONDUCTOR TECHNOLOGY]		
72- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE? 72- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL		[2-16] [21-28]
14-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY	82 []	36-141]
14-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION)	82 [1	142-144]
14-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM		145-156]
14-23 UNIFORM CSD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT	-	165-168]
17- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 17- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN	•	21-27] 29-33]
EMPIRICAL ANALYSIS	-	•
17- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	g1 [3	34-39]
17- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT 15- 1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM	81 [4 79 [1	1-43] 1-3]

TERM-CATEGORY ENT-SEQUENCE NO. TITLE	YEAR PAGES
CTIVE ESD PROTECTIVE MATERIAL [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
7- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT 6- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE 5- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 5- 9 THE DEFICIENCIES IN HILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION 5-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	81 [41-43] 80 [1-11] 79 [7-12] 79 [45-54] 79 [122-125]
CTIVE FOAM [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
4-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 6- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	82 [94-109] 80 [1-11]
MINATION [MISC. FAILURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY]	
4-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS 4-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [131-135] 82 [157-164]
OL [EQUIPMENT TYPE/FUNCTION]	
2-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 2-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 2-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [67-75] 83 [76-86] 83 [87-94]
[SYSTEMS]	
5- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN 2- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS 4-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY 4-23 UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT 7- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT	84 [1-6] 83 [6-11] 82 [136-141] 82 [165-168] 81 [41-43]
COLLECTION SYS./TECHNIQUES [RELIABILITY MODELS/DATA/ANALYSIS]	
4- 6 A SUVREY OF EOS/ESD DATA SOURCES	82 [49-55]
TIME [ESD, MATERIALS AND EQUIPMENT, TESTING]	
5- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 5- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS 5-10 TRIBOELECTRIC TESTING FOR FLECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER	84 [40-44] 84 [45-49] 84 [58-63]
5-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS PROPENSITY ON PACKING MATERIALS	84 [64-77]
5-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES 5-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 5-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL 2-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 2-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 4-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 4-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 4-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 7- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION	84 [97-103] 84 [131-135]
7- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 7-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS 6- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND	81 [44-48] 81 [65-74] 80 [12-16]
DISCHARGE 6-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN 6-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS	80 [130-139] 80 [161-166]
6-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS 5- 4 STATIC CONTROL USING TOPICAL ANTISTATS	80 [192-205] 79 [13-21]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
CIRCUIT PROTECTION DEVICES [NON-ELECTRONICS]	
17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS 17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES 17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES 17516-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE 17516-13 SOS PROTECTION: THE DESIGN PROBLEM 17516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS 17515-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY 17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS	81 [90-96] 81 [97-100] 81 [212-218] 80 [44-53] 80 [73-80] 80 [81-86] 80 [95-103] 79 [183-187] 79 [193-197]
CLEAN ROOM [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [131-135]
COMPONENT [LEVEL OF ASSEMBLY]	
18172- 1 ESD-HOW OFTEN DOES IT HAPPEN? 18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES 18214- 5 LATENT ESD FAILURES 17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS	83 [1-5] 83 [102-107] 82 [41-48] 81 [21-27] 81 [29-33]
COMPUTATION [EQUIPMENT TYPE/FUNCTION]	
17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES	81 [212-218]
COMPUTER AIDED DESIGN, (CAD) [DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECHNOLOGY]	
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING	83 [108-117] 82 [34-40]
COMPUTERIZED [DATA COLLECTION SYS./TECHNIQUES, RELIABILITY MODELS/DATA/ANALYSIS]	
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES 18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS 17517-20 MODELING OF EOS IN SILICON DEVICES	83 [102-107] 82 [185-189] 81 [132-138]
COMPUTERIZED ANALYSIS [DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECHNOLOGY]	
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	79 [126-132]
COMPUTERIZED TECH [RELIABILITY MODELING TECHNIQUES, RELIABILITY MODELS/DATA/ANALYSIS]	
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS 18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS	83 [56-62] 82 [185-189]
17515-16 DOPING PROFILES AND SECOND BREAKDOWN	79 [109-115]
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	79 [126-132]
17515-20 HODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES	79 [133-139]
CONDUCTIVE ESD PROTECTIVE MATERIAL [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS	84 [97-103] 82 [120-123]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR	<u>R 1</u>	PAGE	<u>s</u>
BULK CONDUCTIVE PLASTIC [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]				
	84 79			
CAPACITOR [PASSIVE DEVICE, COMPONENT TYPE]				
18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	82	[13-1	18]
17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS	81	[174-	-191]
CCD [FIELD EFFECT, (FET), SEMICONDUCTOR TECHNOLOGY]				
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY	83	[147-	-153]
CHARACTERIZATION [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]				
18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWN	82	71-	75]
18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS		[124- [154-		-
	80	•		-
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES	79	[97-	103	}
CHARGE DEVICE MODEL [ESD, DEVICE, TESTING METHODS]				
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN		[1-6		=
18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL 18172- 6 ESD BY STATIC INDUCTION		[131- [29-:		-
18172-19 ESD SENSITIVITY OF COMPLEX ICS		[128-		-
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY	•	[147		-
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	•	[1-12 [13-1		•
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES	81	[57-6	64]
17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS		[236· [17-2		
	00 (•
CHART/DIAGRAM [REFERENCE DOCUMENT]	***			
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	/9	[88-9	96	J
CIRCUIT BOARD [NON-ELECTRONICS]				
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS?		[22-2 [131-		=
18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL 18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE		[165		-
MICROPROCESSORS		-		
CIRCUIT BREAKER [CIRCUIT PROTECTION DEVICES, NON-ELECTRONICS]				
18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS	82	[190-	-202]
CIRCUIT PROTECTION DEVICES [NON-ELECTRONICS]				
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83	[87-9	94]
18172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	83	[168-	-176	1
18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES	83	[181-	-184]
18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION)		[142		-
18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD		[169· [85-8		

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
AIR IONIZER [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS 17517- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT 17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE	83 [76-86] 82 [94-109] 81 [9-13] 81 [29-33] 81 [41-43]
ANTISTATIC GARMENTS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [131-135]
ANTISTATIC IMPREGNATED PLASTIC [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [87-94]
APPLICATION FACTORS [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]	
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 18172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	83 [67-75] 83 [76-86] 83 [168-176]
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS 17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES 17517-15 INPUT PROTECTION DESIGN FOR THE 3-HICRON NMOS PROCESS 17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS 17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	82 [131-135] 81 [21-27] 81 [90-96] 81 [97-100] 79 [13-21] 79 [122-125] 79 [198-204]
ASSEMBLY & EQUIPMENT ESD CLASSIFICATION [ESD, DEVICE, TESTING METHODS]	
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS	84 [22-23] 80 [140-148]
AVAILABILITY [SYSTEMS]	
18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY	82 [136-141]
BIPOLAR [COMPONENT TYPE]	
18305-21 AN EVALUATION OF EOS FAILURE MODELS 17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS 17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES 17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	84 [144-156] 80 [59-66] 80 [112-116] 80 [117-121] 79 [36-40]
BIPOLAR & FET, (BIFET, BIMOS, ETC) [COMPONENT TYPE]	
17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES	80 [117-121]
BOARD [LEVEL OF ASSEMBLY]	
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	84 [22-23] 79 [205-209]

Section 2:

SUBJECT INDEX

INDEX TERM	CATEGORIES	DOCUMENTS
TEST TECHNIQUES	TESTING TOOLS & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	6
TEST TECHNIQUES FOR REL. ASSESSMENT	SEMICONDUCTOR TECHNOLOGY	28
TESTING TOOLS & TECHNIQUES	SEMICONDUCTOR TECHNOLOGY	21
THEORY OF OPERATION	SEMICONDUCTOR TECHNOLOGY	6
THERMAL	TEST STRESS	4
THERMAL SECONDARY BREAKDOWN	ESD DEVICE FAILURE MODES	8
THERMAL STRESS/STRAIN	MECHANICAL & PHYSICAL FAILURE PHENOMENA SEMICONDUCTOR TECHNOLOGY	. 1
TOLERANCES	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	3
TOPICAL ANTISTATS	ESD MATERIALS AND EQUIPMENT PROTECTIVE	5
TRADE-OFFS	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	4
TRANSIENT SUPPRESSORS	ESD DEVICE PROTECTIVE DEVICES/INPUT PROTECTION	11
TRANSISTOR	DISCRETE SEMICONDUCTOR SEMICONDUCTOR DEVICE	13
TRIOBOELECTRIC CHARGING	ESD EOS/ESD PHYSICS	19
TTL	BIPOLAR COMPONENT TYPE	2
VOLUME RESISTIVITY	ESD MATERIALS AND EQUIPMENT TESTING	1
WEAPONS	EQUIPMENT TYPE/FUNCTION	1
WEIBULL	STATISTICAL ANALYSIS	2
WORKMANSHIP	FAILURE CAUSE FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	1
WRIST STRAP	ESD MATERIALS AND EQUIPMENT PROTECTIVE	6
WUNSCH BELL MODEL	ESD DEVICE TESTING METHODS	13

INDEX TERM	CATEGORIES	DOCUMENTS
QUALITY ASSURANCE	SYSTEMS	8
REFERENCE DOCUMENT		47
REL. STANDARDS	USER OF REL. PREDICTION MODELS	1
RELATIVE HUMIDITY	ESD MATERIALS AND EQUIPMENT PROTECTIVE TECHNIQUES	21
RELIABILITY	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	2
RELIABILITY	SYSTEMS	5
RELIABILITY MANAGEMENT TECH	USER OF REL. PREDICTION MODELS	1
RELIABILITY MODELING TECHNIQUES	RELIABILITY MODELS/DATA/ANALYSIS	4
RESISTOR	PASSIVE DEVICE COMPONENT TYPE	4
REVERSE BREAKDOWN	ELECTRICAL FAILURE PHENOMENA SEMICONDUCTOR TECHNOLOGY	1
SCREENING	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	2
SECONDARY BREAKDOWN	ELECTRICAL FAILURE PHENOMENA SEMICONDUCTOR TECHNOLOGY	15
SEMICONDUCTOR DEVICE		14
SENSITIVE ELECTRONIC DEVICE SYMBOLS	ESD MATERIALS AND EQUIPMENT PROTECTIVE	2
SILICON	SEMICONDUCTOR TECHNOLOGY	1
SPACE	APPLICATION ENVIRONMENT	1
SPECIFICATION/STANDARD	REFERENCE DOCUMENT	5
STATIC CONTROL	ESD MATERIALS AND EQUIPMENT PROTECTIVE TECHNIQUES	20
STATISTICAL ANALYSIS		2
STEP STRESS	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	5
SURFACE RESISTIVITY	ESD MATERIALS AND EQUIPMENT TESTING	15
SYSTEM	LEVEL OF ASSEMBLY	3
TEST EQUIPMENT	TESTING TOOLS & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	8
TEST PROGRAM DEVELOPMENT	TESTING TOOLS & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	8
TEST SPECIFICATION	TESTING TOOLS & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	6

INDEX TERM	CATEGORIES	DOCUMENTS
MISC. FAILURE PHENOMENA	SEMICONDUCTOR TECHNOLOGY	2
MISSILE	APPLICATION ENVIRONMENT	1
MNOS	FIELD EFFECT, (FET) SEMICONDUCTOR TECHNOLOGY	1
MODELS/THEORY/EQUATIONS	RELIABILITY MODELING TECHNIQUES RELIABILITY MODELS/DATA/ANALYSIS	6
MOISTURE	TEST STRESS	1
MOSFET	FIELD EFFECT, (FET) SEMICONDUCTOR TECHNOLOGY	2
MOSFET C	FIELD EFFECT, (FET) SEMICONDUCTOR TECHNOLOGY	3
MOSFET N	FIELD EFFECT, (FET) SEMICONDUCTOR TECHNOLOGY	1
NONELECTRONICS		2
NOTICE/BULLETIN	REFERENCE DOCUMENT	1
OPERATIONAL TEST	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	2
OVERSTRESS	FAILURE CAUSE FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	45
OXIDATION	CHEMICAL FAILURE PHENOMENA SEMICONDUCTOR TECHNOLOGY	7
PACKAGE	SEMICONDUCTOR TECHNOLOGY	6
PKG BODY MATERIAL	PACKAGE SEMICONDUCTOR TECHNOLOGY	1
PKG ENCAPSULANT	PACKAGE SEMICONDUCTOR TECHNOLOGY	1
PKG LID OR COVER	PACKAGE SEMICONDUCTOR TECHNOLOGY	1
PROCESS CONTROL/SPECIFICATION	FABRICATION PROCESSES & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	6
PROCESS DESIGN	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	3
PROCESS/WORKMANSHIP INDUCED	MISC. FAILURE PHENOMENA SEMICONDUCTOR TECHNOLOGY	1
PROCUREMENT CONTROLS	USER OF REL. PREDICTION MODELS	3
PROTECTED ESD AREA	ESD MATERIALS AND EQUIPMENT PROTECTIVE	12
PROTECTIVE BAGS	ESD MATERIALS AND EQUIPMENT PROTECTIVE	8
PROTECTIVE WORK BENCH SURFACE	ESD MATERIALS AND EQUIPMENT PROTECTIVE	6

INDEX TERM	CATEGORIES	DOCUMENTS
PMEA/FMECA, (FAILURE MODE EFFECTS)	RELIABILITY MODELING TECHNIQUES RELIABILITY MODELS/DATA/ANALYSIS	1
PUTURE TRENDS	SEMICONDUCTOR TECHNOLOGY	9
GEOMETRIES/LAYOUT	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	4
GRAPHICAL TECHNIQUES	RELIABILITY MODELING TECHNIQUES RELIABILITY MODELS/DATA/ANALYSIS	1
GROUNDING METHODS	ESD MATERIALS AND EQUIPMENT PROTECTIVE TECHNIQUES	6
GROUNDING STRAPS	ESD MATERIALS AND EQUIPMENT PROTECTIVE	6
GUIDE/PROCEDURE	REFERENCE DOCUMENT	24
HELICOPTOR	APPLICATION ENVIRONMENT	1
HUMAN BODY ESD MODEL	ESD DEVICE TESTING METHODS	21
HUMAN FACTORS	SYSTEMS	3
INDUCTIVE CHARGING	ESD EOS/ESD PHYSICS	3
INPUT PROTECTION	ESD DEVICE PROTECTIVE DEVICES/INPUT PROTECTION	16
JFET	FIELD EFFECT, (FET) SEMICONDUCTOR TECHNOLOGY	1
LATENT ESD FAILURE	ESD DEVICE FAILURE MODES	4
LIFE	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	4
LOGISTICS	SYSTEMS	1
MAINTAINABILITY TECHNIQUES	MAINTAINABILITY Systems	1
HATERIALS	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	11
MATHEMATICAL ANALYSIS		12
METALLIZATION MELT	ESD DEVICE FAILURE MODES	13
METALLURGICAL FAILURE PHENOMENA	SEMICONDUCTOR TECHNOLOGY	1
MICROCIRCUIT	SEMICONDUCTOR DEVICE	33
MICROWAVE	DISCRETE SEMICONDUCTOR SEMICONDUCTOR DEVICE	1

INDEX TERM	CATEGORIES	DOCUMENTS
ELECTROSTATIC SIMULATOR	ESD DEVICE TESTING METHODS	6
EMC - ELECTROMAGNETIC COMPATIBILITY	ESD EOS/ESD PHYSICS	1
EMI - ELECTROMAGNETIC INTERFACE	ESD EOS/ESD PHYSICS	10
EMP - ELECTROMAGNETIC PULSE	ESD EOS/ESD PHYSICS	17
ENVIRONMENTAL	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	2
EOS - ELECTRICAL OVERSTRESS	ESD EOS/ESD PHYSICS	23
EOS/ESD	SEMICONDUCTOR TECHNOLOGY	179
ESD CONTROL PROGRAM	ESD MATERIALS AND EQUIPMENT PROTECTIVE TECHNIQUES	20
ESD PROTECTIVE MATERIAL	ESD MATERIALS AND EQUIPMENT TESTING	20
ESD STD AND HANDBOOK	ESD STANDARDS, HANDBOOKS, MANUALS	21
ESD SUSCEPTIBILITY TESTING	ESD DEVICE TESTING METHODS	80
EVALUATION TEST	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	6
FABRICATION EQUIPMENT	FABRICATION PROCESSES & TECHNIQES SEMICONDUCTOR TECHNOLOGY	2
FABRICATION PROCESSES & TECHNIQUES	SEMICONDUCTOR TECHNOLOGY	10
FAILURE ANALYSIS RESULTS	FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	16
FAILURE ANALYSIS TECHNIQUES	FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	2
FAILURE CAUSE	FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	3
FAILURE CHARACTERIZATION	SEMICONDUCTOR TECHNOLOGY	7
FAILURE INDICATOR	FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	2
FAILURE MODES	FAILURE ANALYSIS SEMICONDUCTOR TECHNOLOGY	8
FIELD EFFECT, (FET)	SEMICONDUCTOR TECHNOLOGY	2
FLOOR SURFACE	ESD MATERIALS AND EQUIPMENT PROTECTIVE	5

INDEX TERM	CATEGORIES	DOCUMENTS
COMPUTERIZED ANALYSIS	DESIGN TOOLS & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	2
COMPUTERIZED TECH	RELIABILITY MODELING TECHNIQUES RELIABILITY MODELS/DATA/ANALYSIS	6
CONDUCTIVE ESD PROTECTIVE MATERIAL	ESD MATERIALS AND EQUIPMENT PROTECTIVE	7
CONDUCTIVE FOAM	ESD MATERIALS AND EQUIPMENT PROTECTIVE	2
CONTAMINATION	MISC. FAILURE PHENOMENA SEMICONDUCTOR TECHNOLOGY	2
CONTROL	EQUIPMENT TYPE/FUNCTION	3
COST	SYSTEMS	5
DATA COLLECTION SYS./TECHNIQUES	RELIABILITY MODELS/DATA/ANALYSIS	1
DECAY TIME	ESD MATERIALS AND EQUIPMENT TESTING	21
DESIGN CONSIDERATIONS	SEMICONDUCTOR TECHNOLOGY	12
DESIGN FOR TESTABILITY	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	16
DETECTOR/SENSOR	OPTOELECTRONIC SEMICONDUCTOR DEVICE	1
DEVELOPMENT PROGRAM	SEMICONDUCTOR TECHNOLOGY	12
DIELECTRIC BREAKDOWN	ESD DEVICE FAILURE MODES	8
DIGITAL LSI	MICROCIRCUIT SEMICONDUCTOR DEVICE	7
DIODE	DISCRETE SEMICONDUCTOR SEMICONDUCTOR DEVICE	7
DIP TUBE	ESD MATERIALS AND EQUIPMENT PROTECTIVE	3
DISCRETE SEMICONDUCTOR	SEMICONDUCTOR DEVICE	7
ELECTRICAL	TEST STRESS	4
ELECTRICAL FAILURE PHENOMENA	SEMICONDUCTOR TECHNOLOGY	4
ELECTRO-THERMOMIGRATION	ESD DEVICE FAILURE MODES	2
ELECTROSTATIC CHARGE DETECTOR	ESD MATERIALS AND EQUIPMENT PROTECTIVE	7
ELECTROSTATIC SHIELD	ESD EOS/ESD PHYSICS	3

INDEX TERM	CATEGORIES	DOCUMENTS
AIR IONIZER	ESD MATERIALS AND EQUIPMENT PROTECTIVE	10
ANTISTATIC GARMENTS	ESD MATERIALS AND EQUIPMENT PROTECTIVE	1
ANTISTATIC IMPREGNATED PLASTIC	ESD MATERIALS AND EQUIPMENT PROTECTIVE	1
APPLICATION FACTORS	DESIGN CONSIDERATIONS SEMICONDUCTOR TECHNOLOGY	10
ASSEMBLY & EQUIPMENT ESD CLASSIFICATION	ESD DEVICE TESTING METHODS	2
AVAILABILITY	SYSTEMS	1
BIPOLAR	COMPONENT TYPE	5
BIPOLAR & FET, (BIFET, BIMOS, ETC)	COMPONENT TYPE	1
BOARD	LEVEL OF ASSEMBLY	2
BULK CONDUCTIVE PLASTIC	ESD MATERIALS AND EQUIPMENT PROTECTIVE	2
CAPACITOR	PASSIVE DEVICE COMPONENT TYPE	2
ССР	FIELD EFFECT, (FET) SEMICONDUCTOR TECHNOLOGY	1
CHARACTERIZATION	TEST TECHNIQUES FOR REL. ASSESSMENT SEMICONDUCTOR TECHNOLOGY	5
CHARGE DEVICE MODEL	ESD DEVICE TESTING METHODS	10
CHART/DIAGRAM	REFERENCE DOCUMENT	1
CIRCUIT BOARD	NON-ELECTRONICS	3
CIRCUIT BREAKER	CIRCUIT PROTECTION DEVICES NON-ELECTRONICS	1
CIRCUIT PROTECTION DEVICES	NON-ELECTRONICS	15
CLEAN ROOM	ESD MATERIALS AND EQUIPMENT PROTECTIVE	1
COMPONENT	LEVEL OF ASSEMBLY	5
COMPUTATION	EQUIPMENT TYPE/FUNCTION	1
COMPUTER AIDED DESIGN, (CAD)	DESIGN TOOLS & TECHNIQUES SEMICONDUCTOR TECHNOLOGY	3
COMPUTERIZED	DATA COLLECTION SYS./TECHNIQUES RELIABILITY MODELS/DATA/ANALYSIS	3

Section 1:

ALPHABETICAL LISTING OF TERMS

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR	PAGES
DEVELOPMENT PROGRAM [SEMICONDUCTOR TECHNOLOGY]		
	I-	
17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [20	05-209]
DIELECTRIC BREAKDOWN [ESD, DEVICE, FAILURE MODES]		
18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES	83 [18	81-184]
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS 17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD		98-204] 5-89]
17517-15 THE EFFECTS OF VEST SCALING ON EUS/ESD PATEURE THRESHOLD 17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS		74-191]
17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES	81 [2	02-207]
17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS		04-108)
17515-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES		33-139]
17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	/9 [1	76-182]
DIGITAL LSI [MICROCIRCUIT, SEMICONDUCTOR DEVICE]		
18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS	•	85-197]
17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES		14-119]
17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS		36-241]
17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS	80 [8	7-94]
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [4	1-44]
17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS	79 [6	4-77]
TECHNIQUES FOR FAILURE SITE LOCATION 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [1	68-175]
DIODE [DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE]		
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES	83 [16	02-107]
18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE		18-121]
17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN		22-129]
SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES	_	
17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN		30-139]
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES 17515-16 DOPING PROFILES AND SECOND BREAKDOWN		7-103] 09-115]
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF		26-132]
SILICON-ON-SAPPHIRE DIODES		
DIP TUBE [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]		
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	82 [9	4-109]
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES	-	7-64]
17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	80 [1	7-22]
DISCRETE SEMICONDUCTOR [SEMICONDUCTOR DEVICE]		
17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES		20-131]
17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES		39-144]
17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL		51-166]
17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING		19-224]
17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE 17516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS		42-245] 6-34]
17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE)		
ELECTRICAL [TEST STRESS]		
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS	83 [5	6-62]
18172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	_	68-176]
18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA	82 [7	6-81]
17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION		84-188)

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
ELECTRICAL FAILURE PHENOMENA [SEMICONDUCTOR TECHNOLOGY]	
18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN 17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS	84 [112-123] 80 [59-66] 80 [130-139] 80 [149-153]
ELECTRO-THERMOMIGRATION [ESD, DEVICE, FAILURE MODES]	
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN	84 [189-195] 80 [130-139]
ELECTROSTATIC CHARGE DETECTOR [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV	84 [7-19] 84 [20-21] 84 [25-33] 83 [37-47]
18172-10 STATIC SURVEY METERS 17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS 17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN	83 [63-66] 81 [65-74] 80 [23-25]
ELECTROSTATIC SHIELD [ESD, EOS/ESD PHYSICS]	
18214-14 METALLOPLASTICS 17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	82 [110-114] 81 [75-84] 79 [45-54]
ELECTROSTATIC SIMULATOR [ESD, DEVICE, TESTING METHODS]	
18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN MONITORS	84 [104-111] 84 [112-123] 84 [136-143]
17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	79 [36-40]
EMC - ELECTROMAGNETIC COMPATIBILITY [ESD, EOS/ESD PHYSICS]	
17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS	80 [154-160]
EMI - ELECTROMAGNETIC INTERFACE [ESD, EOS/ESD PHYSICS]	
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 18214- 6 A SUVREY OF EOS/ESD DATA SOURCES 18214-14 METALLOPLASTICS 17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE) 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS 17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS 17516-31 STATIC CONTROL SYSTEMS	82 [49-55] 82 [110-114]
EMP - ELECTROMAGNETIC PULSE [ESD, EOS/ESD PHYSICS]	
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 18305-21 AN EVALUATION OF EOS FAILURE MODELS 18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 6 A SUVREY OF EOS/ESD DATA SOURCES	84 [22-23] 84 [144-156] 83 [56-62] 83 [108-117] 82 [49-55]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
EMP - ELECTROMAGNETIC PULSE [ESD, EOS/ESD PHYSICS]	
18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES 17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES 17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS	82 [62-70] 82 [91-93] 81 [120-131] 81 [139-144] 81 [202-207] 80 [140-148] 80 [154-160] 80 [184-188] 79 [78-87] 79 [140-146] 79 [158-167] 79 [198-204]
ENVIRONMENTAL [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]	
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	
17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [22-26]
EOS - ELECTRICAL OVERSTRESS [ESD, EOS/ESD PHYSICS]	
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN MONITORS	84 [25-33] 84 [136-143]
18305-21 AN EVALUATION OF EOS FAILURE MODELS 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV	84 [144-156] 83 [37-47]
18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT	83 [76-86] 83 [154-157]
18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT	83 [158-167]
18214- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING 18214- 8 AN IMPROVED FOS CONDUCTION MODEL OF SEMICONDUCT DEUTCES	82 [34-40] 82 [62-70]
	82 [82-90]
18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY	82 [136-141]
17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES	81 [120-131]
17517-20 MODELING OF EOS IN SILICON DEVICES 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL	81 [132-138] 81 [151-166]
17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS	81 [167-173]
17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING	81 [202-207]
	81 [219-224]
17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF FLECTRICAL OVERSTRESS	80 [149-153] 80 [154-160]
17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS 17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION	80 [184-188]
17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS	80 [206-212]
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [88-96] 79 [205-209]
EOS/ESD [SEMICONDUCTOR TECHNOLOGY]	
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN	84 [1-6]
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION	84 [7-19]
18305- 3 TEST EQUIPMENTA SOURCE OF ESD!!	84 [20-21]
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL	84 [22-23] 84 [25-33]
18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY	84 [34-39]
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL	84 [40-44]
18305- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS	84 [45-49]
18305- 9 ESTIMATION OF DISCHARGE ENERGY RELEASED FROM CHARGED INSULATOR 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE	84 [50-57 } 84 [58-63]
CENTER 18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS	84 [64-77]
PROPENSITY ON PACKING MATERIALS	•

	M-CATEGORY SEQUENCE NO. TITLE	YEAR	PAGES
EOS/ESD (SEMICONDUCTOR TECHNOLOGY]		
18305-13	AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES A WRIST STRAP LIFE TEST PROGRAM	84 [8	78-84] 35-93] 94-96]
	TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	7	7-103]
	CRITICAL CONSIDERATIONS FOR ESD TESTING		.04-111]
	DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI	-	12-123] 24-130]
	SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL	-	31-135]
18305-20	PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN MONITORS		36-143]
	AN EVALUATION OF EOS FAILURE MODELS	= =	44-156]
18305-22	DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR DEVICES SUBJECTED TO VOLTAGE TRANSIENTS	84 [1	57-164]
18305-23	DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84 [1	.65-178]
	DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING		79-188]
	A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HOMOS INTEGRATED CIRCUITS		.89-195] .96-201]
	A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW		202-2091
	ESD-HOW OFTEN DOES IT HAPPEN?	83 [1	
	ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	83 [6	
18172- 3	THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE?	83 [1	2-16]
	ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES		7-20
	AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL ESD BY STATIC INDUCTION		
	CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO	-	19-36] 17-47]
	15KV A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY	-	.8-55]
	MODELS	_	
	POWER FAILURE MODELING OF INTEGRATED CIRCUITS		6-62
	STATIC SURVEY METERS THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY		3-66] 7-75]
	MEASURING EFFECTIVENESS OF AIR IONIZERS		6-86
	PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES		37-94]
	COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS		5-101
	CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES	Ξ.	.02-107]
	MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA		.08-117]
	TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL		.18-121] .22-127]
101/2-10	REVISITED	65 (1	22-12/]
	ESD SENSITIVITY OF COMPLEX ICS		28-133]
	ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS		.34-146]
	THE EFFECT OF ESD ON CCD RELIABILITY EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE?		.47-153] .54-157]
	INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT		58-167]
	METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS		.68-176]
	USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS		77-180]
	A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES		
	ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS		.85-197]
	A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS	7	.98-204] 12]
	ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND	-	3-18
	CAPACITORS LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES	_	9-33
	ELECTRICAL OVERSTRESS THRESHOLD TESTING		4-40
	LATENT ESD FAILURES	82 [4	1-48
	A SUVREY OF EOS/ESD DATA SOURCES		9-55
	MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS		6-61
18214- 8	AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES	82 [6	52-70]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE YEAR PAGES EOS/ESD [SEMICONDUCTOR TECHNOLOGY] 18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND 82 [71-75] 18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 82 [76-81 82 [82-90 18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 82 [91-93 82 [94-109] 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-14 METALLOPLASTICS 82 [110-114] 18214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS 82 [115-119] 18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 82 [120-123] 18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 82 [124-130] 18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS 82 [131-135] 18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY 82 [136-141] 18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) 82 [142-144] 18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 82 [145-156] 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 82 [157-164] 18214-23 UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT 82 [165-168] 18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 82 [169-174] 18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES 82 [175-178] 18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL [179-184] 18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS 82 [185-189] 18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS 82 [190-202] 17517- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 81 [1-8 81 [9-13 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION 17517- 3 ANALYSIS OF ESD FAILURES 81 [14-20 17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 81 [21-27 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN 81 [29-33 **EMPIRICAL ANALYSIS** 17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT 81 [34-39 A CASE HISTORY 17517- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT 81 [41-43 17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 81 [44-48 17517- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL 81 | 49-56 81 [57-64 17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS 81 [65-74 81 [75-84 17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 81 [85-89 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES 81 [90-96 81 [97-100] 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS 17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE 81 [101-105] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 81 [106-113] 17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES 81 [114-119] 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 81 [120-131] 17517-20 MODELING OF EOS IN SILICON DEVICES [132-138] 17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES 81 [139-144] 17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS 81 [145-150] 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL [151-166] 81 17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 81 [167-173] 17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS 81 [174-191] 17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT 81 [192-197] 17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS 81 [198-201] 17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES 81 [202-207] 17517-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS 81 [208-211] 17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES 81 [212-218] 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 81 [219-224] 17517-32 TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY 81 [225-228] DAMAGED OPERATIONAL AMPLIFIERS 17517-33 EOS DAMAGE IN SILICON SOLAR CELLS 81 [209-235] 17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS 81 [236-241] 17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE 81 [242-245] 17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE 80 [1-11 17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND 80 [12-16 DISCHARGE

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. YEAR PAGES EOS/ESD [SEMICONDUCTOR TECHNOLOGY] 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS 80 [17-22 17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN 80 [23-25 17516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS 80 [26-34 17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE) 80 [35-43 17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES 80 [44-53 17516- 8 IDENTIFICATION OF LATENT ESD FAILURES 80 [54-57 17516- 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES 80 [58 17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 80 [59-66 17516-11 ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS 80 [67-72 17516-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC 80 [73-80 DISCHARGE 17516-13 SOS PROTECTION: THE DESIGN PROBLEM 80 [81-86 17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND 80 [87-94] LAYOUT VARIATIONS 17516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS 80 [95-103] 17516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM 80 [104-111] RELIABILITY 17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS 80 [112-116] 17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES 80 [117-121] 17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN 80 [122-129] SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES 17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN 80 [130-139] 17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS 80 [140-148] 17516-22 SCLAR CELL ELECTRICAL OVERSTRESS ANALYSIS 80 [149-153] 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS 80 [154-160] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 80 [161-166] LIGHTNING-INDUCED TRANSIENTS 17516-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR 80 [167-175] 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 80 [176-183] 17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION 80 [184-188] 17516-28 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM 80 [189-191] 17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS 80 [192-205] 17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS 80 [206-212] 17516-31 STATIC CONTROL SYSTEMS 80 [213-217] 17516-32 AN EVALUATION OF WRIST STRAP PARAMETERS 80 [218-224] 17516-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD 80 [225-230] 17515- 1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM 79 [1-3 17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT 79 [4-6 HARDWARE 17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 79 [7-12 17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS 79 [13-21 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 79 [22-26 GASEOUS PRESSURE TESTS 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM -79 [27-35 BACKGROUND AND STATUS 17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR 79 (36-40 17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES 79 [41-44 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A 79 [45-54 SIMPLE MODEL FOR STATIC PROTECTION 17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC 79 [55-63 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS 79 [64-77 TECHNIQUES FOR FAILURE SITE LOCATION 17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE 79 [78-87 17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 79 [88-96 17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES 79 [97-103] 17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS 79 [104-108] 79 [109-115] 17515-16 DOPING PROFILES AND SECOND BREAKDOWN 17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS 79 [116-121] 17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION 79 [122-125] 17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF 79 [126-132] SILICON-ON-SAPPHIRE DIODES 17515-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES 79 [133-139]

79 [140-146]

17515-21 SOUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS

INDEX TER	M-CATEGORY			
DOCUMENT-	SEQUENCE NO. TITLE	<u>)</u>	PAR	PAGES
EOS/ESD [SEMICONDUCTOR TECHNOLOGY]			
	MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS			7-157]
	B DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERA		I .	8-167]
	S SUSCEPTIBILITY OF LST HOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERA		-	8-175] 6-182]
	ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY		-	3-187]
	THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	7	79 [18	8-192]
17515~28	B ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS	7	79 [19	3-197]
	O STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP O THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS		-	8-204]
	ROL PROGRAM [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES]		,,,,	,
18305~ 1	A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN		84 [1-	·6 1
	ESD-HOW OFTEN DOES IT HAPPEN?			.5 j
18172~ 2	ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	8	83 [6-	11]
	THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE?			-16
18172- 5	5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DI (EOS/ESD) CONTROL	SCHARGE 8	83 [21	28]
	UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT	ŧ	82 [16	5-168]
	IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES		_	5-178]
	ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL			9-184]
	V ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS			5-189]
	THE PERFECT "10" - CAN YOU REALLY HAVE ONE? THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM		-	[-27]
	EMPIRICAL ANALYSIS)-33]
	PASSIVE STATIC PROTECTION: THEORY AND PRACTICE		BO [1-	
	THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE		_	!-16]
	ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN			3-25]
	S AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM		-	9-191]
) FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS LAN EFFECTIVE ESD AWARENESS TRAINING PROGRAM		30 (19 79 (1-	2-205]
	CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SP HARDWARE		-	-
17515- 6	PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PRO BACKGROUND AND STATUS	GRAM - 7	79 [27	7-35]
17515-18	B HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	7	79 [12	2-125]
	ECTIVE MATERIAL [ESD, MATERIALS AND EQUIPMENT, TESTING]			
18305- 2	HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	8	34 [7-	19]
18305- 8	STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS			i-49]
18305-15	TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1			-103
181/2- 2	ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS		83 [6-	
	S ESD BY STATIC INDUCTION B PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND BOXES		= =	9-36] 9-94]
18172-14	COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS	1	83 [95	-101 1
	B TEST METHODS FOR STATIC CONTROL PRODUCTS		• •	-109
	ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS			5-119]
	BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY			6-141]
17517- 5	THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM EMPIRICAL ANALYSIS	- AN -	81 [29)-33 j
17517- 7	A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPM	ENT 8	81 [41	-43]
	CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL			-56 j
	SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS		-	-84
	AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM			9-191]
) FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS ? CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SP			2-205] 6]
	HARDWARE			
	DELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATE		79 [7- 70 [27	
1/313- 6	PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PRO BACKGROUND AND STATUS	UKAH - /	77 (4/	7-35]

	M-CATEGORY SEQUENCE NO. TITLE	YEAR	<u>.</u>	PAGE	<u>es</u>
ESD PROTE	CTIVE MATERIAL [ESD, MATERIALS AND EQUIPMENT, TESTING]				
17515- 9	THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	79 (45-	54)
ESD STD A	ND HANDBOOK [ESD, STANDARDS, HANDBOOKS, MANUALS]				
18305- 3	TEST EQUIPMENT A SOURCE OF ESD!!	84 [20-	21	1
18305-15	TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	84 [97-	103]
	DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS				-
	AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL	•			•
	PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [
	ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS	83 [-
	THE EFFECT OF ESD ON CCD RELIABILITY	83 [
	ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL LATENT ESD FAILURES	82 [82 [-
	A SUVREY OF EOS/ESD DATA SOURCES	82 [-
	TEST METHODS FOR STATIC CONTROL PRODUCTS	82 [•
17517- 7	A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT	81			-
17517- 8	AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 (44-	48]
	SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS	81 [-
	AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES	81 [-
	TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY DAMAGED OPERATIONAL AMPLIFIERS	81 [
	PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	80 [.]
	AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS	80 [79 [
1/313- 6	PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	/9 (. 2 / -	33	,
17515- 8	RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [41-	44	1
	THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	79	•		-
ESD SUSCE	PTIBILITY TESTING [ESD, DEVICE, TESTING METHODS]				
18305-22	DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR DEVICES SUBJECTED TO VOLTAGE TRANSIENTS	84 [157	-164	¥]
18305-23	DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84 (165	-178	3 }
18305-24	DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING	84 [179	-188	8]
	A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS	84 [189	-195	5]
	ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84			-
	ESD-HOW OFTEN DOES IT HAPPEN?	83 [•		1
	POWER FAILURE MODELING OF INTEGRATED CIRCUITS	83 (83		-	-
	MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED	83 (
18172-19	ESD SENSITIVITY OF COMPLEX ICS	83 [128	-133	3]
	ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS	83			
	ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS	83 [7]
18214- 1	ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL	82 [1
	ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	82 [Ī
	LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES	82 [
	ELECTRICAL OVERSTRESS THRESHOLD TESTING	82 [
	LATENT ESD FAILURES	82 [
	MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND	82 [-
	THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWN MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA	82 [
	A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION	82			
	TRANSIENT-INDUCED FAILURES AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	82			
	CITCHES SECTION LINES TO COMMON VIOLENCE VIOLENCE	(+3		- 1

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE			<u>R P</u>	AGES
	PTIBILITY TESTING [ESD, DEVICE, TESTING METHODS]			
18214-22	ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA		[157-	
	IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES		[175-]	1
	ANALYSIS OF ESD FAILURES THE PERFECT "10" - CAN YOU REALLY HAVE ONE?		[14-20 [21-2]	-
	CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL		[49-5	=
	THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD		[85-8	
	ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES		[90-9	-
17517-16	DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE	81	[101-	105]
	SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS		[106-	
	ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES		[114-]	
	AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES		[120- [139-	= =
	DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS		[145-	Ξ.
	EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL		[151-	
	AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS		[167-	
17517-25	PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS	81	[174-	191]
	PREDICTION OF THIN-FILM RESISTOR BURNOUT		[192-	
	BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS		[198-	_
	FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING	-	[219-: [225-:	
1/31/-32	TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY DAMAGED OPERATIONAL AMPLIFIERS	01	[223-	220]
17517-33	EOS DAMAGE IN SILICON SOLAR CELLS	81	209-	2351
17517-34	EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS		[236-	
17517-35	NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE	81	[242-	245]
17516- 3	ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS		[17-2	2]
	STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES		[58	Į
	FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS		[59-6	
	ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC		[67-7] [73-8]	=
1/310-12	DISCHARGE	80	[/ 3 - 0	J j
17516-14	LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS	80	[87-9	4]
	ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS		[95-10	
	SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY		[104-	
	HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES		[112- [117-	
	EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN		[122-	
	SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES	••		,
17516-20	OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN	80	[130-	139]
17516-21	ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS		[140-	
1/516-22	SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS		[149-	
17516-23	AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS		[154-	Ξ.
	MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC		[184- [22-2	
	GASEOUS PRESSURE TESTS PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM -		[27-3	_
	BACKGROUND AND STATUS			
	RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES		[41-4	
	THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION ELECTRO-STATIC DISCHARGE AND CMOS LOGIC		[45-5 [55-6	_
	TECHNIQUES FOR FAILURE SITE LOCATION		[64-7	
17515-12	DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE	79	[78-8	7]
	ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES		[97-1	
	ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS		[104-	
	DOPING PROFILES AND SECOND BREAKDOWN		[109-	
	REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS		[116-	= =
	SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS		[140- [147-	
	DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP		[158-	7
	SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE		[168-	

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
ESD SUSCEPTIBILITY TESTING [ESD, DEVICE, TESTING METHODS]	
17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	79 [176-182] 79 [188-192] 79 [198-204]
17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [205-209]
EVALUATION TEST [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]	
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	83 [134-146] 82 [120-123] 81 [65-74] 81 [75-84] 79 [13-21] 79 [109-115]
FABRICATION EQUIPMENT [FABRICATION PROCESSES & TECHNIQES, SEMICONDUCTOR TECHNOLOGY]	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	84 [7-19] 79 [36-40]
FABRICATION PROCESSES & TECHNIQUES [SEMICONDUCTOR TECHNOLOGY]	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY 18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	84 [7-19] 84 [34-39] 83 [87-94]
18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES	82 [82-90]
18214-14 METALLOPLASTICS 17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE 17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE 17515-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	82 [110-114] 81 [85-89] 79 [7-12] 79 [78-87] 79 [176-182] 79 [183-187]
FAILURE ANALYSIS RESULTS [FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]	
18172-19 ESD SENSITIVITY OF COMPLEX ICS 18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 18172-21 THE EFFECT OF ESD ON CCD RELIABILITY 18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT 18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES 18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS	83 [128-133] 83 [134-146] 83 [147-153] 83 [154-157] 83 [158-167] 83 [181-184] 83 [185-197]
17517- 3 ANALYSIS OF ESD FAILURES 17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17516-11 ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS 17516-22 SOLAR CELL ELECTRICAL OYERSTRESS ANALYSIS 17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	81 [14-20] 81 [75-84] 81 [219-224] 80 [67-72] 80 [149-153] 79 [158-167] 79 [168-175]
17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS FAILURE ANALYSIS TECHNIQUES [FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]	79 [198-204] 79 [205-209]
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS	84 [179-188] 81 [145-150]
FAILURE CAUSE [FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]	
17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE	81 [101-105]

DEX TERM-CATEGORY CUMENT-SEQUENCE NO. TITLE	YEAR	PA	GES
ILURE CAUSE [FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]			
7517-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS 7515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	81 [: 79 [:	208-2 198-2	11] 04]
ILURE CHARACTERIZATION [SEMICONDUCTOR TECHNOLOGY]			
8172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS 8214- 6 A SUVREY OF EOS/ESD DATA SOURCES 7517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES 7517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 7517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES	83 [83 [82 [81 [81 [80 [185-19 49-55 139-19 167-1 202-20	97]
ILURE INDICATOR [FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]			
.8172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? .8172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT		154-1: 158-1:	
ILLURE MODES [FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]			
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES		179-18 181-18	
18214- 5 LATENT ESD FAILURES 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS 17516- 8 IDENTIFICATION OF LATENT ESD FAILURES 17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS 17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	81 [80 [80 [79 [41-48 120-1 17-22 54-57 147-1 176-1	31]]] 57]
IELD EFFECT, (FET) [SEMICONDUCTOR TECHNOLOGY]			
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR 17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS	79 [79 [36-40 147-1	
LOOR SURFACE [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]			
18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION 17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	82 [81 [17-20 124-1 145-1 9-13	30] 56]]
MEA/FMECA, (FAILURE MODE EFFECTS) [RELIABILITY MODELING TECHNIQUES, RELIABILITY MODELS/DA	TA/AN	ALYSI	s]
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	79 [88-96	1
UTURE TRENDS [SEMICONDUCTOR TECHNOLOGY]			
18214-20 FSD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) 18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES 18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS 17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES 17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE	82 [82 [82 [82 [81 [142-1: 145-1: 169-1: 175-1: 185-1: 114-1: 4-6	56] 74] 78] 89]
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR 17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS	7	36-40 193-1	-

	EQUENCE NO. TITLE	YEA	<u>.R</u>	PAG	ES
OMETRIES	c/LAYOUT [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]				
8172- 8	A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83	[48-	-55	}
7515-26	ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79	[95- [183 [188	-18	7 j
APHICAL	TECHNIQUES [RELIABILITY MODELING TECHNIQUES, RELIABILITY MODELS/DATA/ANALYSIS]				
7515-16	DOPING PROFILES AND SECOND BREAKDOWN	79	[109	-11	5]
OUNDING	METHODS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES]				
8214-20 .8214-28 .7516-1 .7516-25 .7515-3	A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS PASSIVE STATIC PROTECTION: THEORY AND PRACTICE LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS STRAPS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	82 82 80 80	[142 [190 [1-1 [167	2-14 0-20 11 7-17	4] 2]] 5]
	A WRIST STRAP LIFE TEST PROGRAM	84	[94-	-96	1
	THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS		[29-		-
17517- 6	A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81	[34-	39	J
	PACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS		[192		
	AN EVALUATION OF WRIST STRAP PARAMETERS CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE		[218 [4-6		-
UIDE/PROC	CEDURE [REFERENCE DOCUMENT]				
	ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS		[6-1		-
	ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL		[17-		
	POWER FAILURE MODELING OF INTEGRATED CIRCUITS PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE		[56- [87-		-
18172-24	BOXES METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED	83	[168	3-17	6]
	CIRCUITS USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES		[177 [181		
	A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS		[198		
	ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT		[41-		- 1
	EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES		[57-		
	INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS		[65-		
	SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM		[106]		3]]
	CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE)
	ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS STATIC CONTROL USING TOPICAL ANTISTATS		[7-1 [13-]]
17515-18	HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	79	[122	-12	5]
17515-24	SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79	{ 140 [168 [183	3-17	5]

(TERM-CATEGORY MENT-SEQUENCE NO. TITLE	YEAR	PAGES
E/PROCEDURE [REFERENCE DOCUMENT]		
15-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [2	205-209]
COPTOR [APPLICATION ENVIRONMENT]		
15-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	79 [1	122-125}
N BODY ESD MODEL [ESD, DEVICE, TESTING METHODS]		
D5- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN D5- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL D5-16 CRITICAL CONSIDERATIONS FOR ESD TESTING D5-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES D5-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84 [2 84 [1 84 [1	1-6] 25-33] 104-111] 112-123] 165-178]
D5-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 72- 1 ESD-HOW OFTEN DOES IT HAPPEN? 72- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY HODELS	83 [1	189-195] 1-5] 48-55]
72-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 72-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS 14- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	83 [1	134-146] 185-197] 13-18]
14-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 17-1 A CLOSER LOOK AT THE HUMAN ESD EVENT 17-9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL 17-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS 17-32 TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY	81 [4 81 [4 81 [5 81 [2	169-174] 1-8
DAMAGED OPERATIONAL AMPLIFIERS 17-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS 16-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE	80 [7	236-241] 73-80]
15- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR 15-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS		36-40] 104-108]
N FACTORS [SYSTEMS]		
72- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE? 72- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL 14-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	83 [2	12-16] 21-28]
CTIVE CHARGING { ESD, EOS/ESD PHYSICS]	02 (143-130;
05- 9 ESTIMATION OF DISCHARGE ENERGY RELEASED FROM CHARGED INSULATOR 72- 6 ESD BY STATIC INDUCTION 16-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD	83 [2	50-57] 29-36] 225-230]
T PROTECTION [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION]		
05-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW 14-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 17-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 17-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES 17-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS 17-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES 16- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS 16- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE) 16- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES 16- 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES 16-13 SOS PROTECTION: THE DESIGN PROBLEM 16-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS	82 [18 81 [8 81 [9 81 [18 80 [2 80 [3 80 [4 80 [5	202-209] 169-174] 85-89] 90-96] 97-100] 114-119] 26-34] 35-43] 44-53] 58] 81-86]
16-26 SURGE TESTS ON PLUG-IN TRANSFORMERS		176-183]

TERM-CATEGORY MENT-SEQUENCE NO. TITLE	YEAR PAGES
PROTECTION [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION]	
L5-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS L5-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION L5-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79 [88-96] 79 [122-125] 79 [183-187]
[FIELD EFFECT, (FET), SEMICONDUCTOR TECHNOLOGY]	
16-11 ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS	80 [67-72]
NT ESD FAILURE [ESD, DEVICE, FAILURE MODES]	
72-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS 14- 5 LATENT ESD FAILURES 16- 8 IDENTIFICATION OF LATENT ESD FAILURES	83 [198-204] 82 [41-48] 80 [54-57]
15-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC	79 [55-63]
[TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]	
05-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES 72-21 THE EFFECT OF ESD ON CCD RELIABILITY 72-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS 14- 5 LATENT ESD FAILURES	84 [85-93] 83 [147-153] 83 [198-204] 82 [41-48]
STICS [SYSTEMS]	
05-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS PROPENSITY ON PACKING MATERIALS	84 [64-77]
TAINABILITY TECHNIQUES [MAINTAINABILITY, SYSTEMS]	
.72- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL	83 [21-28]
RIALS [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]	
72- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 72-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [17-20] 83 [87-94]
14-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS 14-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS	82 [115-119] 82 [120-123] 82 [131-135] 81 [9-13]
17-8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 17-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS 17-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 16-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS 15- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS	81 [44-48] 81 [65-74] 81 [75-84] 80 [206-212] 79 [7-12]
EMATICAL ANALYSIS	
72-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 72-18 SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED	83 [118-121] 83 [122-127]
14- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS 14- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES 14- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWN	82 [56-61] 82 [62-70] 82 [71-75]
14-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES 17-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT	82 [76-81] 81 [139-144] 81 [192-197]

	1-CATEGORY SEQUENCE NO.	TITLE	YEAR	PAGES
'R	AP [ESD, MATERIALS AND	EQUIPMENT, PROTECTIVE]		
_	AN EVALUATION OF WRIST CONTROLLING ELECTROSTAT HARDWARE	STRAP PARAMETERS TIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT		218-224] 4-6]
3E	LL MODEL (ESD, DEVICE,	TESTING METHODS }		
18	SEMICONDUCTOR JUNCTION REVISITED	NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL	83 [122-127]
2	ELECTROSTATIC DISCHARGE	E (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND	82 [13-18]
3	LIMITATIONS IN MODELING	G ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES	82 [19-33]
8	AN IMPROVED EOS CONDUCT	TION MODEL OF SEMICONDUCT DEVICES	82 [62-70]
18	ELECTRICAL OVERSTRESS	INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES	81 [114-119]
19	AN OVERVIEW OF EOS EFF	ECTS ON SEMICONDUCTOR DEVICES	81 [120-131]
20	MODELING OF EOS IN SIL	ICON DEVICES	81 [132-138]
22	DETERMINING AN EMITTER	-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS	81 [145-150]
35	NON-LINEAR KINETICS OF	SEMICONDUCTOR JUNCTION THERMAL FAILURE	81 [242-245]
		LECTRICALLY CHARGED IC PINS		17-22]
			-	117-121]
	SOLAR CELL ELECTRICAL		•	149-153]
13	FAILURE ANALYSIS OF MI	CROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	79 [88-96]

ERM-CATEGORY I-SEQUENCE NO. TITLE	YEAR PAGES
TOR [DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE]	
10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS 17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS 21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS 25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE 27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	80 [59-66] 80 [112-116] 79 [116-121] 79 [140-146] 79 [176-182] 79 [188-192]
LECTRIC CHARGING [ESD, EOS/ESD PHYSICS]	
5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER	84 [25-33] 84 [58-63]
11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS PROPENSITY ON PACKING MATERIALS	84 [64-77]
12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS 15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL	84 [78-84] 84 [97-103] 84 [131-135]
13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [87-94]
14 COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS	83 [95-101]
13 TEST METHODS FOR STATIC CONTROL PRODUCTS 16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS	82 [94-109] 82 [120-123]
17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES	82 [124-130]
22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]
8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 [44-48]
10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES	81 [57-64]
29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS	81 [208-211]
3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	80 [17-22]
4 STATIC CONTROL USING TOPICAL ANTISTATS 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [13-21] 79 [22-26]
9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	79 [45-54]
IPOLAR, COMPONENT TYPE]	
1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES	82 [1-12] 80 [58]
RESISTIVITY [ESD, MATERIALS AND EQUIPMENT, TESTING]	
11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81 [65-74]
[EQUIPMENT TYPE/FUNCTION]	
29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS	81 [208-211]
[STATISTICAL ANALYSIS]	
22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS 10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC	81 [145-150] 79 [55-63]
SHIP { FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY }	
4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE?	81 [21-27]
TRAP [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 14 A WRIST STRAP LIFE TEST PROGRAM 13 TEST METHODS FOR STATIC CONTROL PRODUCTS 21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	84 [7-19] 84 [94-96] 82 [94-109] 82 [145-156]

EX TERM-CATEGORY UMENT-SEQUENCE NO. TITLE	YEAR PAGES
RMAL SECONDARY BREAKDOWN [ESD, DEVICE, FAILURE MODES]	
172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 1214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 1214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES 17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES 17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS	83 [118-121] 82 [19-33] 82 [76-81] 81 [219-224] 80 [117-121] 80 [122-129] 80 [149-153]
7515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS	79 [116-121]
ERMAL STRESS/STRAIN [MECHANICAL & PHYSICAL FAILURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY	1
3172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE	83 [118-121]
LERANCES [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]	
8305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 8172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 8214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS	84 [104-111] 83 [76-86] 82 [115-119]
PICAL ANTISTATS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]	
7517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 7517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 7516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS 7515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 7515- 4 STATIC CONTROL USING TOPICAL ANTISTATS	81 [44-48] 81 [75-84] 80 [192-205] 79 [7-12] 79 [13-21]
ADE-OFFS [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]	
8172-10 STATIC SURVEY METERS 8172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES 8214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	82 [94-109]
7515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [22-26]
ANSIENT SUPPRESSORS [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION]	
8172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	83 [168-176]
8172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS 7517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES 7516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS 7516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE) 7516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES 7516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS	
7516-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR 7516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS	80 [167-175] 80 [176-183]
7516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS 7515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS	80 [206-212] 79 [193-197]
ANSISTOR [DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE]	
8305-21 AN EVALUATION OF EOS FAILURE MODELS 8172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 8214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES 8214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 7517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE 7517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS	84 [144-156] 83 [108-117] 82 [82-90] 82 [91-93] 81 [101-105] 81 [145-150]
7516- 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES	80 [58]

DEX TERM-CATEGORY CUMENT-SEQUENCE NO. TITLE	YEAR PAGES
ST TECHNIQUES FOR REL. ASSESSMENT [SEMICONDUCTOR TECHNOLOGY]	
8214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS 7517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE 7517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES 7517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 7517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS 7516-6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE) 7516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 7516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	81 [219-224] 81 [236-241]
17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515-1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM 17515-4 STATIC CONTROL USING TOPICAL ANTISTATS 17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC 17515-12 DYNAMIC WAVEFORN CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE 17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS 17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS 17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION 17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP	80 [176-183] 79 [1-3] 79 [13-21] 79 [55-63] 79 [78-87] 79 [88-96] 79 [104-108] 79 [116-121] 79 [122-125] 79 [158-167]
ESTING TOOLS & TECHNIQUES [SEMICONDUCTOR TECHNOLOGY]	
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18305- 9 ESTIMATION OF DISCHARGE ENERGY RELEASED FROM CHARGED INSULATOR 18305-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI 18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS 18214- 1 ESD SUSCEPTIBILITY TESTING OP ADVANCED SCHOTTKY TTL 18214- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING 18214- 6 A SUVREY OF EOS/ESD DATA SOURCES 18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 17517- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS 17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN 17516- 8 IDENTIFICATION OF LATENT ESD FAILURES 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTNING-INDUCED TRANSIENTS 17515-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS 17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS 17515-22 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	84 [40-44] 84 [50-57] 84 [85-93] 84 [94-96] 84 [97-103] 84 [124-130] 83 [185-197] 82 [1-12] 82 [34-40] 82 [49-55] 82 [124-130] 81 [1-8] 80 [12-16] 80 [17-22] 80 [23-25] 80 [54-57] 80 [161-166] 79 [140-146] 79 [147-157] 79 [183-187] 79 [188-192]
HEORY OF OPERATION [SEMICONDUCTOR TECHNOLOGY]	
18172- 6 ESD BY STATIC INDUCTION 18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 18172-14 COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS 17517- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION 17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	83 [29-36] 83 [76-86] 83 [95-101] 81 [1-8] 81 [9-13] 80 [1-11]
HERMAL [TEST STRESS]	
18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS	83 [118-121] 82 [76-81] 82 [91-93] 80 [206-212]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
SYSTEM [LEVEL OF ASSEMBLY]	
17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS	80 [140-148]
TEST EQUIPMENT [TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECHNOLOGY]	
18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS 18172-10 STATIC SURVEY METERS 18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES 18214- 5 LATENT ESD FAILURES	84 [20-21] 84 [25-33] 83 [6-11] 83 [63-66] 83 [87-94]
17516-31 STATIC CONTROL SYSTEMS	80 [213-217]
17516-32 AN EVALUATION OF WRIST STRAP PARAMETERS	80 [218-224]
TEST PROGRAM DEVELOPMENT [TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECHNOLOGY]	
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS 18172- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE? 18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS 18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [6-11] 83 [12-16] 83 [17-20] 83 [56-62] 83 [87-94]
18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL	82 [179-184]
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 [44-48] 79 [36-40]
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	79 [36-40]
TEST SPECIFICATION [TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECHNOLOGY]	
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
18172-19 ESD SENSITIVITY OF COMPLEX ICS	83 [128-133]
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS	83 [198-204] 81 [97-100]
17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	: : : : : : : : : : : : : : : : : : :
17515-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79 [183-187]
TEST TECHNIQUES [TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECHNOLOGY]	
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL	84 [25-33]
18172- 1 ESD-HOW OFTEN DOES IT HAPPEN? 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO	83 [1-5] 83 [37-47]
15KV	
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [87-94]
18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES	83 [134-146] 81 [90-96]
TEST TECHNIQUES FOR REL. ASSESSMENT [SEMICONDUCTOR TECHNOLOGY]	
18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15kV	83 [37-47]
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY	
18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE	83 [76-86] 83 [87-94]
BOXES	00 (07-74)
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES	82 [1-12] 82 [19-33]
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	82 [94-109]
18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES	82 [124-130]
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE YEAR			
STATIC CONTROL [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES]			
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN	84 [1-6]		
18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY	84 [34-39]		
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	83 [6-11]		
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [131-135]		
18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION)	82 [142-144]		
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	82 [145-156]		
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]		
18214-23 UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT	82 [165-168]		
18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS	82 [185-189]		
17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/	81 [9-13]		
SUPPRESSION 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - EMPIRICAL ANALYSIS	AN 81 [29-33]		
17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	80 [1-11]		
17516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS 17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES	80 [26-34]		
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES	80 [44-53]		
17516-28 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM	80 [189-191]		
17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS	80 [192-205]		
17516-31 STATIC CONTROL SYSTEMS	80 [213-217]		
17515- 1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM	79 [1-3]		
17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGR	AM - 79 [27-35]		
BACKGROUND AND STATUS			
17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	79 [122-125]		
STATISTICAL ANALYSIS	02 (122 122)		
18172-18 SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED			
17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING	81 [219-224]		
STEP STRESS [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]			
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [196-201]		
18214- 1 ESD SUSCEPTIBILI∀Y TESTING OF ADVANCED SCHOTTKY TTL	82 [1-12]		
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS	81 [106-113]		
17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLO	GIES 81 [114-119]		
17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATU	RE 79 [168-175]		
SURFACE RESISTIVITY [ESD, MATERIALS AND EQUIPMENT, TESTING]			
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 18305- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SP	84 [7-19]		
18305- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS	84 [45-49]		
CENTER			
18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS PROPENSITY ON PACKING MATERIALS	84 [64-77]		
18305-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMI			
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	84 [97-103]		
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TO BOXES			
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	82 [94-109]		
18214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS 18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS	82 [115-119] 82 [120-123]		
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [131-135]		
17517- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMEN	-		
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 [44-48]		
17517-1 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81 [65-74]		
17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	80 [1-11]		
SYSTEM [LEVEL OF ASSEMBLY]			
18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL 18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS	82 [179-184] 82 [190-202]		

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEA	IR.	PAG	ES
SECONDARY BREAKDOWN [ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY]				
18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 18214- 5 LATENT ESD FAILURES 18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWN	83 82	[108 [118 [41- [71-	3-12 -48	ıj l
18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL 17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS 17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES 17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN	82 81 80 80	[76- [91- [151] [112] [122]	-93 1-16 2-11 2-12) 6] 6] 9]
17515-16 DOPING PROFILES AND SECOND BREAKDOWN 17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS 17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES 17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 79	[109 [116 [126	6-12 6-13	1]
SEMICONDUCTOR DEVICE				
18172-18 SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED	83	[122	2-12	7]
18172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS 18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS 18214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 18214- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES 18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) 18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS 17515-20 HODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES SENSITIVE ELECTRONIC DEVICE SYMBOLS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] 17517- 5 TH" ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS 17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT	83 82 82 82 81 81 81 80 79	•	8-20 -33 -70 2-14 5-15 -27 -64 -96 -100 4-16 -35 -33	4] 4] 6] 1] 0] 9]
HARDWARE SILICON [SEMICONDUCTOR TECHNOLOGY]				
17517-20 MODELING OF EOS IN SILICON DEVICES	81	[132	2-13	8]
SPACE [APPLICATION ENVIRONMENT]				
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE	79	[4-6	5	1
SPECIFICATION/STANDARD [REFERENCE DOCUMENT]				
18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY		[21- [48-		_
MODELS 18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A	79	[136 [27-	-35	1
SIMPLE MODEL FOR STATIC PROTECTION				

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
RELATIVE HUMIDITY [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES]	
18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY 18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION	82 [136-141] 82 [142-144] 82 [157-164] 81 [9-13]
17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81 [34-39]
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS 17517-12 SELECTION OF PACKAGING MATERIA 3 FOR ESD SENSITIVE ITEMS 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	81 [44-48] 81 [65-74] 81 [75-84] 81 [106-113] 80 [12-16]
17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS	79 [7-12] 79 [13-21]
RELIABILITY [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]	
18214- 5 LATENT ESD FAILURES 17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES	82 [41-48] 81 [114-119]
RELIABILITY [SYSTEMS]	
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS 17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS	82 [94-109] 81 [167-173] 80 [140-148] 80 [154-160] 80 [192-205]
RELIABILITY MANAGEMENT TECH [USER OF REL. PREDICTION MODELS]	
17515- 1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM	79 [1-3]
RELIABILITY MODELING TECHNIQUES [RELIABILITY MODELS/DATA/ANALYSIS]	
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
17517-20 MODELING OF EOS IN SILICON DEVICES 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL 17517-33 EOS DAMAGE IN SILICON SOLAR CELLS	81 [132-138] 81 [151-166] 81 [209-235]
RESISTOR [PASSIVE DEVICE, COMPONENT TYPE]	
18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	
17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT 17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS	81 [167-173] 81 [192-197] 81 [198-201]
REVERSE BREAKDOWN [ELECTRICAL FAITURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY]	
18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWN	D 82 [71-75]
SCREENING [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]	
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION	79 [41-44] 79 [64-77]
SECONDARY BREAKDOWN [ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY]	
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES	83 [102-107]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE YEAR PAGES REFERENCE DOCUMENT 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 83 [67-75 18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 83 [76-86 18172-14 COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS 83 [95-101] 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 83 [118-121] 83 [134-146] 18172-20 ESD EVALUATION OF RADIATION-HARDED, HIGH RELIABILITY CMOS AND MNOS ICS 18172-21 THE EFFECT OF ESD ON CCD RELIABILITY 83 [147-153] 18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 83 [154-157] 18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT 83 [158-167] 18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS 83 [185-197] 18214- 5 LATENT ESD FAILURES 82 [41-48 18214- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES 82 [62-70 18214-23 UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT 82 [165-168] 18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 82 [169-174] 18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS 82 [190-202] 17517- 3 ANALYSIS OF ESD FAILURES 81 [14-20] 17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 81 [21-27 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN 81 [29-33 **EMPIRICAL ANALYSIS** 17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT 81 [34-39] A CASE HISTORY 17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 81 [44-48 17517- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL 81 [49-56 17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 81 [75-84 17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 81 [85-89 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES 81 [90-96 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS 81 [97-100] 17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE 81 [101-105] 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 81 [120-131] 17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 81 [167-173] 17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS 81 [174-191] 17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT 81 [192-197] 17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS 81 [198-201] 17517-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS 81 [208-211] 17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES 81 [212-218] 17516-28 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM 80 [189-191] 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 79 [22-26] GASPOUS PRESSURE TESTS 17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC 79 [55-63] 17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES 79 [97-103] 17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS 79 [147-157] 17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP 79 [158-167] 17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE 79 [176-182] 17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS 79 [188-192] APPLICATIONS TO LINEAR INTEGRATED CIRCUITS 17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS 79 [193-197] REL. STANDARDS [USER OF REL. PREDICTION MODELS] 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - 79 [27-35] BACKGROUND AND STATUS RELATIVE HUMIDITY [ESD. MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES] 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 84 [58-63] CENTER 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 84 [104-111] 18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL 84 [131-135] 18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 83 [17-20 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 83 167-75 18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS 83 [76-86 18172-14 COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS 83 [95-101] 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 82 [94-109] 18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS 82 [131-135]

DOCUMENT-SEQUENCE NO. TITLE	YEAR	PAC	ES
PROTECTED ESD AREA [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]			
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION	• •	7-19	•
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS 18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL	•	6-11 21-28	-
18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY	82 [136-14	1]
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM		145-15	
17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE? 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN		21-27 29-33	
EMPIRICAL ANALYSIS 17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT		34-39	
A CASE HISTORY	•••		•
17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE		1-11	
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE 17515- 2 FIGURE 17515 CONDUCTIVITY CHARACTERISTICS OF HORKERS TO CHARACTERISTICS OF HORKERS TO CHARACTERISTICS OF HORKERS]
17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS			
PROTECTIVE BAGS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]			
	84 [7-19]
18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS PROPENSITY ON PACKING MATERIALS	84 [64-77)
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS	-	78-84	•
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [87-94	J
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS	82 [120-12	23]
17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS		75-84	
17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION		1-11 45-54	
PROTECTIVE WORK BENCH SURFACE [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]			
18305-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES	84 [85-93	1
18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL		131-13	
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	-	157-16	-
17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81 [34-39	J
17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	80 [1-11]
17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS	79 [7-12	j
QUALITY ASSURANCE [SYSTEMS]			
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN	84 [84 [1-6]
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL)
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	82 [94-109)
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	_	131-13	_
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE?		145-15 21-27	
17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	_	65-74	
REFERENCE DOCUMENT			
18172- 1 ESD-HOW OFTEN DOES IT HAPPEN?	83 [1-5	}
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	83 [6-11	Ì
18172- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE? 18172- 6 ESD BY STATIC INDUCTION		12-16 29-36	
18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO		29-30 37-47	=
15KV	_		-
18172-10 STATIC SURVEY METERS	83 [63-66]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
OXIDATION [CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY]	
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NHOS DEVICES 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17516-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE	84 [179-188] 81 [90-96] 81 [120-131] 80 [73-80]
17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS	80 [87-94]
17516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS 17516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	80 [95-103] 80 [104-111]
PACKAGE [SEMICONDUCTOR TECHNOLOGY]	
18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER	84 [58-63]
18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI 18214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS 17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS 17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS	84 [124-130] 82 [115-119] 81 [57-64] 81 [65-74] 81 [75-84]
PKG BODY MATERIAL [PACKAGE, SEMICONDUCTOR TECHNOLOGY]	
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [87-94]
PKG ENCAPSULANT [PACKAGE, SEMICONDUCTOR TECHNOLOGY]	
17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [22-26]
PKG LID OR COVER [PACKAGE, SEMICONDUCTOR TECHNOLOGY]	
17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	80 [17-22]
PROCESS CONTROL/SPECIFICATION [FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECHNOLOGICAL PROCESSES & TECHNIQUES, SEMICONDUCTOR TECHNIQUES, SE	OGY]
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY 18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) 18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	
PROCESS DESIGN [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECHNOLOGY]	
18214-14 METALLOPLASTICS 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS PROCESS/WORKMANSHIP INDUCED [MISC. FAILURE PHENOMENA, SEMICONDUCTOR TECHNOLOGY]	82 [110-114] 81 [106-113] 79 [193-197]
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]
PROCUREMENT CONTROLS [USER OF REL. PREDICTION MODELS]	. = ,
18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL 17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES 17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	82 [179-184] 79 [41-44] 79 [122-125]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEA	R PAGES
NOTICE/BULLETIN [REFERENCE DOCUMENT]		
17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE	79	[78~87]
OPERATIONAL TEST [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECHNOLOGY]		
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY 18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS		[147-153] [198-204]
OVERSTRESS [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECHNOLOGY]		
18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL	83	[21-28]
18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT		[154-157] [158-167]
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS		[198-204]
18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	82	[13-18]
18214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 18214- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING		[19-33] [34-40]
18214- 5 LATENT ESD FAILURES		[41-48]
18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES		[82-90]
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION		[145-156]
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA		[157-164]
18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES		[169-174] [175-178]
18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL		[179-184]
17517- 3 ANALYSIS OF ESD FAILURES		[14-20]
17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE?		[21-27]
17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS		[29-33]
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES	81	[57-64]
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 17517-14 ON CHIP PROTECTION OF HIGH DENSITY NHOS DEVICES		[85-89]
		[90-96]
17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS		[97-100]
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS		[106-113]
17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES		[114-119]
17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS		[120-131] [174-191]
17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS		[198-201]
17517-32 TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY DAMAGED OPERATIONAL AMPLIFIERS		[225-228]
17517-33 EOS DAMAGE IN SILICON SOLAR CELLS	81	[209-235]
17517-34 FVAINATION OF FIRCTBOSTATIC DISCHARGE TO 16K EDDOMS		[236-241]
17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE		[242-245]
17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	79	[27-35]
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR		[36-40]
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES		[41-44]
17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC		[55-63]
17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION		[64-77]
17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE		[78-87]
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS		[88-96]
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES		[97-103]
17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS		[104-108]
17515-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES		[133-139]
17515-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS 17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS		[140-146] [147-157]
17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE		[147-157]
17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS		[188-192]
APPLICATIONS TO LINEAR INTEGRATED CIRCUITS		
17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79	[205-209]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
MICROCIRCUIT [SEMICONDUCTOR DEVICE]	
17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION 17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC 17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS 17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP 17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	80 [184-188] 79 [55-63] 79 [88-96] 79 [104-108] 79 [158-167] 79 [188-192]
MICROWAVE [DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE]	
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES	83 [102-107]
MISC. FAILURE PHENOMENA [SEMICONDUCTOR TECHNOLOGY]	
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [120-123] 82 [131-135]
MISSILE [APPLICATION ENVIRONMENT]	
17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES	81 [202-207]
MNOS [FIELD EFFECT, (FET), SEMICONDUCTOR TECHNOLOGY]	
17516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	80 [104-111]
MODELS/THEORY/EQUATIONS [RELIABILITY MODELING TECHNIQUES, RELIABILITY MODELS/DATA/ANALY	sis]
18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN MONITORS 18214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS 18214- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES 18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17515-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES	
MOISTURE [TEST STRESS]	
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	80 [12-16]
MOSFET [FIELD EFFECT, (FET), SEMICONDUCTOR TECHNOLOGY]	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 17516-13 SOS PROTECTION: THE DESIGN PROBLEM	84 [7-19] 80 [81-86]
MOSFET C [FIELD EFFECT, (FET), SEMICONDUCTOR TECHNOLOGY]	
18305-21 AN EVALUATION OF EOS FAILURE MODELS 18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [144-156] 84 [189-195] 84 [196-201]
MOSFET N [FIELD EFFECT, (FET), SEMICONDUCTOR TECHNOLOGY]	
18305-22 DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR DEVICES SUBJECTED TO VOLTAGE TRANSIENTS	84 [157-164]
NONELECTRONICS	
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL	84 [40-44] 84 [131-135]

INDEX TERM-CATEGORY DOCUMENT-SEQUENCE NO. TITLE	YEAI	R PAGES
MATHEMATICAL ANALYSIS		
17517-33 EOS DAMAGE IN SILICON SOLAR CELLS	81	[209-235]
17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE		[242-245]
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF	79	[126-132]
SILICON-ON-SAPPHIRE DIODES 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79	[168-175]
METALLIZATION MELT [ESD, DEVICE, FAILURE MODES]		
18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84	[165-178]
18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS	82	[56-61]
17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD		[85-89]
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS		[106-113]
17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17517-33 EOS DAMAGE IN SILICON SOLAR CELLS		[120-131] [209-235]
17516- 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES	80	
17516-11 ANALYSIS OF ESD DAMAGE IN JETT PREAMPLIFIERS		67-72]
17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS		[149-153]
17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION	79	[64-77]
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES	79	[97-103]
17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS		[147-157]
17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79	[168-175]
METALLURGICAL FAILURE PHENOMENA [SEMICONDUCTOR TECHNOLOGY]		
18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS	82	[56-61]
MICROCIRCUIT [SEMICONDUCTOR DEVICE]		
18305- 3 TEST EQUIPMENTA SOURCE OF ESD!!		[20-21]
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS?		[22-23]
18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY		[34-39]
18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI		[58-63] [124-130]
18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL		[131-135]
18305-21 AN EVALUATION OF EOS FAILURE MODELS		[144-156]
18305-22 DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR		[157-164]
DEVICES SUBJECTED TO VOLTAGE TRANSIENTS 18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE	84	[165-178]
MICROPROCESSORS		
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING		[179-188]
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS		[189-195] [196-201]
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS		[56-62]
18172-19 ESD SENSITIVITY OF COMPLEX ICS		[128-133]
18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS	83	[134-146]
18172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	_	[168-176]
18172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS		[177-180]
18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES		
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL		[1-12]
18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS 18214- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES		[56-61] [62-70]
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA		[157-164]
18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES		[175-178]
17517- 3 ANALYSIS OF ESD FAILURES		[14-20]
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS		[106-113]
17516-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE		[73-80]
17516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	80	[104-111]

Section 3:

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
ADAMS, O. E.	
18214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES	82 [19-33]
ALEXANDER, D. R.	
17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED C ROUIT TECHNOLOGIES	81 [114-119]
ANAND,Y.	
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES	79 [97-103]
ANDERSON, W. E.	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	84 [7-19] 83 [87-94]
17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS	81 [75-84]
ANTINONE, R. J.	
17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION	80 [184-188]
ANTONEVICH, J. N.	
18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS	83 [76-86]
ARMENDARIZ, M. G.	
17516-16 SUPRISING PATTERNS OF CHOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	80 [104-111]
ASH, M. S.	
18172-18 SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED	83 [122-127]
17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE	81 [242-245]
AVERY, L. R.	
18172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS	83 [177-180]
BAKER, R. P.	
17516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	80 [104-111]
BARNUM,J.	
17517-33 EOS DAMAGE IN SILICON SOLAR CELLS	81 [209-235]
BARUAH,A.	
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	79 [126-132]
BAUMGARTNER, G.	
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL	84 [97-103] 84 [25-33]
BAZARIAN,A.	
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES	80 [44-53]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
BEALL, J.	
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS	83 [198-204]
BERBECO, G. R.	
18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	82 [124-130] 80 [1-11]
BERNETT, M. K.	
18214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS	82 [115-119]
BERNING, D. W.	
17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS	79 [116-121]
BHAR, T. N.	
17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	79 [27-35]
BLACKBURN, D. L.	
17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS	79 [116-121]
BLINDE, D. R.	
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION	83 [67-75] 81 [9-13]
BLITSHTEYN,M.	
18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS	83 [76-86]
BLORE, R.A.	
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [41-44]
BOLASNY, R. E.	
17516-31 STATIC CONTROL SYSTEMS	80 [213-217]
BOSSARD, P. R.	
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172- 6 ESD BY STATIC INDUCTION 17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	84 [40-44] 83 [29-36] 81 [57-64] 80 [17-22]
BOWERS, J.	·
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS	83 [198-204]
BRANBERG.G.	//
17515-10 ELECTRO-STATIC DISCHARGE AND CHOS LOGIC	79 [55-63]
BRENNAN, T. F.	. , (55-55
18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT	83 [158-167]
TOTAL OF THE STATE	,

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
BRIGGS,C.	
17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS	79 [7-12]
BUDEN, B. N.	
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS	83 [56-62]
BUDENSTEIN, P. P.	
17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES	80 [122-129]
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	79 [126-132]
BURNETT, E. S.	
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [131-135]
BURROUGHS, J. E.	
18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS	82 [185-189]
CABAYAN, H.S.	
17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	79 [198-204]
CAIDERBANK, J. M.	
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	80 [12-16]
CALVIN, H.	
17517- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 17516-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD	81 [1-8] 80 [225-230]
CARLTON, R. M.	
18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY	84 [34-39]
CASTLE,G.S.P.	
17516-11 ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS	80 [67-72]
CHASE, E. W.	
18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	82 [13-18]
17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS	81 [236-241]
CHEMELLI, R.G.	
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172- 6 ESD BY STATIC INDUCTION	84 [40-44] 83 [29-36]
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	81 [57-64] 80 [17-22]
CHI,K.	
18305-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW	84 [202-209]
CLARK, O. M.	
17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES	81 [212-218]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
CLARK, O. M.	
17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS	79 [193-197]
CROCKETT, R. G. M.	
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [196-201]
CROUCH, K. E.	
17516-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR	80 [167-175]
DANGELMAYER, G. T.	
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN 18172- 1 ESD-HOW OFTEN DOES IT HAPPEN?	84 [1-6] 83 [1-5]
DASH,G.R.	
18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES	84 [112-123]
DAVENPORT, D. E.	
18214-14 METALLOPLASTICS	82 [110-114]
DEADRICK, F. J.	
17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	79 [198-204]
DECHIARO, L. F.	
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING	84 [179-188]
denson, w. K.	
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL	82 [1-12]
DERMARDEROSIAN, A.	
17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [22-26]
DEY,K.A.	
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL	82 [1-12]
DODSON, G. A.	
17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	79 [188-192]
DOMINGOS, H.	
18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS 17515-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS	82 [169-174] 80 [206-212] 79 [140-146]
DOWNING, M. H.	
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	83 [6-11]
DREIBELBIS, D. H.	
18172-22 BOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE?	83 [154-157]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
DURGIN, D. L.	
18214- 6 A SUVREY OF EOS/ESD DATA SOURCES 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS	82 [49-55] 81 [120-131] 80 [154-160]
DUVVURY,C.	
18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES	83 [181-184]
ELLIS, E. B.	
18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL	82 [179-184]
ENDERS, J.	
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS	81 [106-113]
ENLOW, E. W.	
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS 17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS 17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS	83 [56-62] 81 [145-150] 80 [59-66]
ENOCH, R. D.	
18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE	84 [165-178]
MICROPROCESSORS 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY	83 [48-55]
MODELS 18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS	83 [185-197]
EUKER, R.	
18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION)	82 [142-144]
FEASEY, P. R.	
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS	84 [189-195]
FELT,F.S.	
18172-14 COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS	83 [95-101]
FOERSTER,G.	
18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN MONITORS	84 [136-143]
FORMANEK, V. C.	
17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP	79 [158-167]
FRANK, D. E.	
17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE?	81 [21-27]
GIERI, V. A.	
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS	83 [56-62]
GOMPF,R.H.	
18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER	84 [58-63]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
GRUCHALLA,M.	
18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS	82 [190-202]
GUAY, R. H.	
17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS	81 [198-201]
HALPERIN, S. A.	
17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS 17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS	80 [192-205] 79 [13-21]
HANSEL, G. E.	
18172- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE?	83 [12-16]
HART, A.R.	
17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND	80 [87-94]
LAYOUT VARIATIONS 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [168-175]
HARTDEGEN, N.	
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]
HARTMANN, H. C.	
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 [44-48]
HAVERMANN,R.	
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	84 [97-103]
HAYS,R.A.	
18214- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING 17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES	82 [34-40] 81 [202-207]
HEAD,G.O.	
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 17517-32 TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY	82 [120-123] 81 [225-228]
DAMAGED OPERATIONAL AMPLIFIERS 17517- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT	81 [41-43]
HESS,R.F.	
17 16-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS	80 [161-166]
HIBBERT, D. R.	
17516-11 ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS	80 [67-72]
HOHL,A.P.	
18305-14 A WRIST STRAP LIFE TEST PROGRAM	84 [94-96]
HOLMES,G.C.	
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS	84 [78-84]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
HOLT, V. E.	
18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES	83 [17-20]
HONDA, M.	
18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAP ARP GOVERNS THE EMI	84 [124-130]
HOPKINS, D. C.	
17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE)	80 [35-43]
HORGAN, E. L.	
18214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL 17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS	82 [19-33] 81 [219-224] 81 [151-166] 80 [140-148]
HOWER, P. L.	
17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS	80 [112-116]
HUFF, P. J.	
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS	84 [78-84]
HUGHES, J. F.	
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [196-201]
HULETT, T.V.	
17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES	81 [90-96]
HUNTSMAN, J. R.	
18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS	84 [64-77]
PROPENSITY ON PACKING MATERIALS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	82 [94-109] 79 [45-54]
HYATT,H.	
17516-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD	80 [225-230]
HYATT,H.M.	
18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 17517- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT	84 [104-111] 81 [1-8]
JENSEN, M. C.	
17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE	81 [101-105]
JOHNSON, M. A.	
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 [44-48]
JOHNSON, R. L.	
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS	84 [78-84]

AUTHOR DOCUMENT-SEQUENCE N	IO. TITLE	YEAR	PAGES
JONASSEN, N.			
18305- 8 STATIC-EL	LECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS	84 [45	-49]
KARASKIEWICZ,R.J.			
	AL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES CHRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS	81 [11 80 [59	
KAWAHURA,T.			
18305-18 EMI CHARA	ACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI	84 [12	4-130]
KELAIDIS, M. J.			
18172- 5 AIR FORCE (EOS/ESD)	E MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE CONTROL	83 [21	-28]
KELLER, J.K.			
17516-12 PROTECTIO DISCHARGE	ON OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC	80 [73	-80]
KING, M. W.			
17515-12 DYNAMIC W	VAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE	79 [78	-87]
KIRK,W.J.			
18214-23 UNIFORM E	ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT	82 [16	5-168]
KNIGHT, E.R.			
	P JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN BILITY OF SILICON-ON-SAPPHIRE DIODES	80 [12	2-129]
KOLYER, J. M.			
		84 [7 - 83 [87	-
	N OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS	81 [75	-84]
KORN, S.R.			
18172-24 METAL OXI CIRCUITS	IDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED	83 [16	8-176]
KRESSLER, D.R.			
17516-26 SURGE TES	STS ON PLUG-IN TRANSFORMERS	80 [17	6-183}
KUSENEZOV, N.			
17515-20 MODELING	OF ELECTRICAL OVERSTRESS IN SILICON DEVICES	79 [13	3~139]
KUSNEZOV,N.			
17517-20 MODELING	OF EOS IN SILICON DEVICES	81 [13	2-138]
LAFFERTY,D.			
18305-19 SECONDARY	DISCHARGE: A NEW JEOPARDY AND A NEW TOOL	84 [13	1-135]

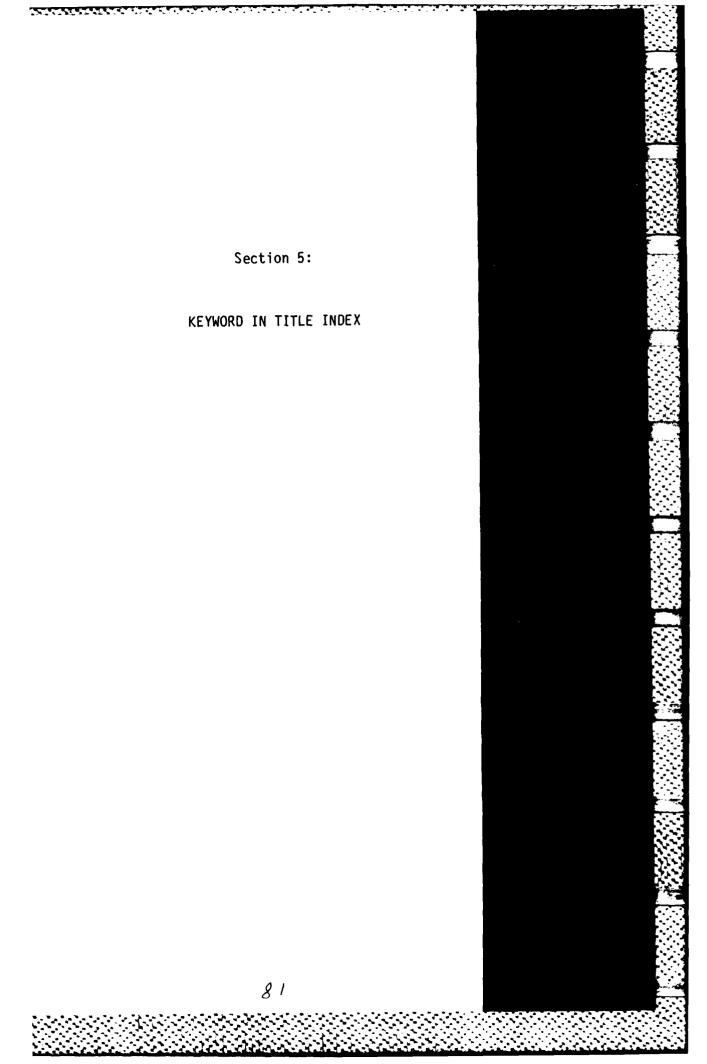
AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
LANE, C. H.	
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [41-44]
LAVOIE, L.	
17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION	81 [9-13]
LEE,T.W.	
18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV	83 [37-47]
LEVINSON, L. M.	
17516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS	80 [26-34]
LIN,T.S.	
17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING	81 [219-224]
LINGOUSKY, J. E.	
18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES	83 [17-20]
LITTAU, W. R.	
17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT	81 [192-197]
LONBORG, J. O.	
18172-10 STATIC SURVEY METERS	83 [63-66]
LUCAS,G.H.	
17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81 [34-39]
LUISI,J.A.	
17516-13 SOS PROTECTION: THE DESIGN PROBLEM	80 [81-86]
LYNCH, J. T.	
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY	83 [147-153]
MADISON, J. A.	
17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [205-209]
MADZY, T. M.	
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	79 [36-40]
MALINARIC,P.	
17517- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL	81 [49-56]
MARTIN, L. C.	
18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	83 [108-117] 82 [76-81] 79 [198-204]

PR SEQUENCE NO. TITLE	YEAR PAGES
i,R.H.	
14-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES	82 [82-90]
EWS,D.	
16-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES	80 [117-121]
JRIN, J.	
17-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS	81 [198-201]
J. E.	
72-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	83 [168-176]
ULLOUGH,D.T.	
15- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [41-44]
AHON, E. J.	
15- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	79 [27-35]
EER,R.E.	
17- & A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81 [34-39]
EER, O. J.	
14- 5 LATENT ESD PAILURES 17- 3 ANALYSIS OF ESD FAILURES 16-28 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM 15- 1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM	82 [41-48] 81 [14-20] 80 [189-191] 79 [1-3]
NALD,A.	
17- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81 [34-39]
RLAND, W. Y.	
17- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS	81 [29-33]
NNA ,A.	
15-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [168-175]
BERG,H.	
17- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 16-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD	81 [1-8] 80 [225-230]
URN,R.T.	
17-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE	81 [101-105]
HAN,J.R.	
05-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES	84 [85-93]

R IENT-SEQUENCE NO. TITLE	YEAR PAGES
R,R.L.	
.5-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	79 [188-192]
II,S.	
15-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	79 [88-96]
,M. G.	
15-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS	79 [104-108]
is,s.	
16-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS	80 [95-103]
INEN, C. F.	
72-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 17-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS	83 [67-75] 81 [208-211]
,P.H.	
72-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE?	83 [154-157]
,C. L.	
72- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL	83 [21-28]
r,r.	
15- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	79 [27-35]
5,W.J.	
72-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 14-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA	83 [108-117] 82 [76-81]
BAY, D. E.	
16- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	80 [12-16]
HOLY, R.K.	
17-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD	81 [85-89]
DISE,E.D.	
16- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN	80 [23-25]
)REK,R.A.	
72-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS	83 [134-146]
E,R.L.	
17-33 EOS DAMAGE IN SILICON SOLAR CELLS	81 [209-235]
LLA,J.	
17- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL	81 [49-56]

TITLE	YEAR PAGES
· H•	
6 A SUVREY OF EOS/ESD DATA SOURCES	82 [49-55]
r,J.	
21 AN EVALUATION OF EOS FAILURE MODELS	84 [144-156]
,J. F.	
11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION	79 [64-77]
0,C.J.	
26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79 [183-187]
,H.R.	
5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS	80 [26-34]
S,L.P.	
19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY	82 [136-141]
D. G.	
21 AN EVALUATION OF EOS FAILURE MODELS 11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES	84 [144-156] 82 [82-90]
7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS 19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES	82 [56-61] 81 [120-131]
,W. H.	
17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS	83 [118-121] 82 [91-93 }
•A•	
7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	79 [36-40]
N,R.	
24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION	82 [169-174]
NO,E.	
22 MICROWAVE NAMOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS	79 [147-157]
н.	
15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS	82 [115-119]
SON,L.	
27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW	84 [202-209]
,L.	
5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [22-26]

T-SEQUENCE NO. TITLE		YEAR	PAGES
,B.C.			
22 DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE DEVICES SUBJECTED TO VOLTAGE TRANSIENTS	MECHANISMS IN SEMICONDUCTOR	84 [15	57-164]
•			
28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTOR	as	83 [19	8-204]
E,R.N.			
26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISC MEMORIES AND THEIR OBSERVED FAILURE MODES	CHARGE PROTECTION CIRCUITS FOR MOS	83 [18	31-184]
I. H.			
3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS 23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THE		82 [19 81 [15	9-33] 51-166]
'ORD,D.H.			
·11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BY TECHNIQUES FOR FAILURE SITE LOCATION	POLAR MICROCIRCUITS AND ANALYSIS	79 [64	i-77]
,N. I.			
·13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE S	STATIC CONTROL TABLE TOP LAMINATES	84 [85	5-93]
,J. P.			
· 3 TEST EQUIPMENTA SOURCE OF ESD!! ·25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES			0-21 } 75-178]
CER, T.R.			
·18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTE	CTION	79 [12	22-125]
₹,J.R.			
·16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO I	SSD AND IMPLICATIONS ON LONG-TERM	80 (10	04-111]
1.			
-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURE	ING FINAL TEST AREA	82 [15	57-164]
. No.			
-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE	E BIAS VOLTAGE OF NMOS 8085-TYPE	84 [16	55-178]
MICROPROCESSORS - 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DIS	CHARGE TESTING TO HUMAN BODY	83 [48	3-55]
MODELS -27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR	R FAILURE CHARACTERISTICS	83 [18	35-197]
ŧ,D.K.			
-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER S	SYSTEMS	82 [18	35-189]
,W.L.			
-21 AN EVALUATION OF EOS FAILURE MODELS		84 [14	4-156]
,R.			
·27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIE)W	84 [20	02-209]



CORPORATE INDEX

SEQUENCE NO. TITLE	YEAR PAGES
LECTRIC COMPANY, INC.	
ESD-HOW OFTEN DOES IT HAPPEN? THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS	83 [1-5] 81 [29-33]
USE	
LATENT ESD FAILURES ANALYSIS OF ESD FAILURES HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	82 [41-48] 81 [14-20] 80 [112-116] 80 [189-191] 79 [1-3] 79 [205-209]

RATION ENT-SEQUENCE NO. TITLE	YEAR PAGES
Y UNIVAC	
4-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	82 [145-156]
ARD ELECTRIK LORENZ AG	
.7-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS	81 [106-113]
AT BUFFALO	
.5-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS .5-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS	79 [140-146] 79 [147-157]
IICAL UNIVERSITY OF DENMARK	
)5- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS	84 [45-49]
IONIX	
16- 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES	80 [58]
; INSTRUMENTS (TI)	
12-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES 17- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT	83 [181-184] 81 [34-39]
A CASE HISTORY	
5 TECH UNIVERSITY	
72-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 14-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS	83 [118-121] 82 [91-93]
OR MBA	
14-14 METALLOPLASTICS	82 [110-114]
72-18 SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED	83 [122-127]
14- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 14- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES 17-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL 17-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE 16-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS	82 [19-33] 82 [62-70] 81 [151-166] 81 [219-224] 81 [242-245] 80 [140-148]
	00 [140-140]
AIR FORCE	04 [00 00 1
 35- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 72- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL 	84 [22-23] 83 [21-28]
14- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING 17-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES	82 [34-40] 81 [202-207]
ARMY	
16-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES	80 [117-121]
ERSITY OF SOUTHAMPTON	
25-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [196-201]

ORATION MENT-SEQUENCE NO. TITLE	YEAR PAGES
SEY	
72-21 THE EFFECT OF ESD ON CCD RELIABILITY	83 [147-153]
HEON	
15- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	79 [22-26]
15-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION	79 [64-77]
05-14 A WRIST STRAP LIFE TEST PROGRAM	84 [94-96]
05-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN HONITORS	
72-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS 15-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	83 [177-180] 79 [183-187]
ABILITY SCIENCES, INC.	
-15- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - BACKGROUND AND STATUS	79 [27-35]
WELL	
105- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION 72-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE	84 [7-19] 83 [87-94]
BOXES 17-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS 17-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 16-13 SOS PROTECTION: THE DESIGN PROBLEM	81 [75-84] 81 [85-89] 80 [81-86]
: AIR DEVELOPMENT CENTER (RADC)	
15- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [41-44]
IA LABORATORIES	
.72-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 116-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 116-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	83 [134-146] 80 [59-66] 80 [104-111]
15-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	79 [176-182]
INTIFIC ENTERPRISES, INC.	
16-31 STATIC CONTROL SYSTEMS	80 [213-217]
O COMPANY	
.72-12 MEASURING EFFECTIVENESS OF AIR IONIZERS	83 [76-86]
ILDING FIBRE COMPANY, INC.	
05-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES	84 [85-93]
RY CORPORATION	
.72-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT 16-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS	83 [158-167] 80 [161-166]

PORATION UMENT-SEQUENCE NO. TITLE		YEAR	PAGES
KHEED			
172- 2 ESD CONTROL IMPLEMENTATION AND COST AV 517-20 MODELING OF EOS IN SILICON DEVICES 517-26 PREDICTION OF THIN-FILM RESISTOR BURNO 515-20 MODELING OF ELECTRICAL OVERSTRESS IN S	UT	81 [19	11] 2-138] 2-197] 3-139]
NAVOX			
305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEV	ICES	84 [20 82 [17)-21] /5-178]
TIN MARIETTA			
172-14 COPLANAR TRIBOELECTRIFICATION OF SELECT 172-19 ESD SENSITIVITY OF COMPLEX ICS 172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICATION OF SELECT SERVICES OF SERV		83 [12	6-101] 8-133] 8-204]
ROWAVE ASSOCIATES, INC.			
'515-14 ELECTROSTATIC FAILURE OF X-BAND SILICO	N SCHOTTKY BARRIER DIODES	79 [97	-103]
IISTORY OF LABOUR			
1305- 9 ESTIMATION OF DISCHARGE ENERGY RELEASE	D FROM CHARGED INSULATOR	84 [50	-57]
SION RESEARCH CORPORATION			
7517-33 EOS DAMAGE IN SILICON SOLAR CELLS 7516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALY	sis		9-235] 9-153]
TEK			
1214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MAN 1517-15 INPUT PROTECTION DESIGN FOR THE 3-MICR 1516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS I	ON NMOS PROCESS	81 [97	7-164] 7-100] 5-103]
COROLA			
1172- 3 THE PRODUCTION OPERATOR: WEAK LINK OR 1172- 7 CONSTRUCTION AND APPLICATION OF A TEST 15KV	· · · · · · · · · · · · · · · · · · ·	83 [12 83 [37	
'517-14 ON CHIP PROTECTION OF HIGH DENSITY NMO '517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE)-96])1-105]
'IONAL BUREAU OF STANDARDS (NBS)			
'515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER	TRANSISTORS	79 [11	6-121]
'AL RESEARCH LABORATORY (NRL)			
1214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ES	D PROTECTIVE MATERIALS	82 [11	5-119]
PON UNIVAC KAISHA, LTD.			
1305-18 EMI CHARACTERISTICS OF ESD IN A SMALL	AIR GAPARP GOVERNS THE EMI	84 [12	4-130}
THERN TELECOM			
'516-11 ANALYSIS OF ESD DAMAGE IN JPET PREAMPL	IFIERS	80 [67	7-72]
MAGING INDUSTRIES OF CALIFORNIA			
'517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING M	ATERIALS	81 (44	-48]

RPORATION CUMENT-SEQUENCE NO. TITLE	YEAR PAGES
WLETT PACKARD	
.7516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND	80 [87-94]
LAYOUT VARIATIONS 17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [55-63] 79 [168-175]
ITACHI	
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	79 [88-96]
NEYWELL	
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/SUPPRESSION	83 [67-75] 82 [185-189] 81 [9-13]
17517-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS 17516-32 AN EVALUATION OF WRIST STRAP PARAMETERS	81 [208-211] 80 [218-224]
BM CORPORATION	
18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN 17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR	83 [154-157] 80 [23-25] 79 [36-40]
IT RESEARCH INSTITUTE	
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 17516- 8 IDENTIFICATION OF LATENT ESD FAILURES 17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP	82 [1-12] 80 [54-57] 79 [158-167]
NTEL	
18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL	84 [131-135]
ET PROPULSION LABORATORY (JPL)	
18172-10 STATIC SURVEY METERS	83 [63-66]
AMAN SCIENCES CORPORATION	
17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES	81 [139-144]
WERNCE LIVERMORE NATIONAL LABORATORY	
18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	83 [108-117] 82 [76-81] 79 [198-204]
EAR SIEGLER, INC.	
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 17517- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT 17517-32 TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY DAMAGED OPERATIONAL AMPLIFIERS	82 [120-123] 81 [41-43] 81 [225-228]
IGHTNING TECHNOLOGIES	
17516-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR	80 [167-175]
CKHEED	
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	84 {25-33 } 84 [97-103]

CORPORATION DOCUMENT-SEQUENCE NO. TITLE	YEAF	<u>.</u>	PAGES	<u>s</u>
E-SYSTEMS, INC.				
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	80 (12-	16)
EG&G WASC, INC.				
18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS	82	190	-202])
EPITEK ELECTRONIC, LTD.				
17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS	81	198	-201]	j
ERA TECHNOLOGY, LTD.				
18305-22 DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR DEVICES SUBJECTED TO VOLTAGE TRANSIENTS	84 [157	-164])
EXPERIMENTAL PHYSICS CORPORATION				
18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 17517- 1 A CLOSER LOOK AT THE HUMAN ESD EVENT 17516-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD	81	1-8	-111 -230	Ì
GARRETT MANUFACTURING, LTD.				
18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY	82 (136	-141]	j
GENERAL ELECTRIC				
CIRCUITS	83	168	-176]]
17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS 17516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS 17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE)	80	26-	-191] 34 43)
GENERAL INSTRUMENT				
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES	80 [44-	53	l
GENERAL SEMICONDUCTOR INDUSTRIES				
17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES 17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS			-218] -197]	
COULD				
17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	79	122	- 125]	I
HARRIS				
17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS	79	104	-108]	J
HARRY DIAMOND LAB (HDL)				
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES 18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND				•
BREAKDOWN 17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN 17515-16 DOPING PROFILES AND SECOND BREAKDOWN			-139] -115]	
HEWLETT PACKARD				
18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION) 18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL			-144] -184]	-

CORPORATION DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
BENDIX	
18214-23 UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT	82 [165-168]
BOOZ, ALLEN & HAMILTON	
18305-21 AN EVALUATION OF EOS FAILURE MODELS 18214- 6 A SUVREY OF EOS/ESD DATA SOURCES 18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS 18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES 17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES 17516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS	84 [144-156] 82 [49-55] 82 [56-61] 82 [82-90] 81 [120-131] 80 [154-160]
BRITISH TELECOM	00 [154-100]
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS 18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS 18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS	84 [78-84] 84 [165-178] 84 [189-195]
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
18172-27 ESD SENSITIVITY OF NHOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS	83 [185-197]
CHARLES STARK DRAPER LABORATORIES	
17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS	79 [7-12]
CHARLESWATERS PRODUCT, INC.	
18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	82 [124-130] 80 [1-11]
CHOMERIC, INC.	
17517- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL	81 [49-56]
CLARKSON COLLEGE	
18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS	82 [169-174] 80 [206-212]
CONSULTANT	
18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE	84 [58-63] 79 [78-87]
DASH, STRAUS, & GOODHUE, INC.	
18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES	84 [112-123]
DIGITAL EQUIPMENT CORPORATION (DEC)	
18305-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW	84 [202-209]
DOUGLAS AIRCRAFT	
17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE?	81 [21-27]
DU PONT	
17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81 [65-74]

CORPORATION DOCUMENT-SEQUENCE NO. TITLE	YEA	<u>.R</u> .	PAGES
3M			
18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS PROPENSITY ON PACKING MATERIALS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	82	[94-	77] 109] 54]
AEROSPACE CORPORATION			
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE	79	[4-6	1
AMERICAN INSTITUTE OF MEDICAL CLIMATOLOGY (AIMC)			
18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY	84	[34-	39 j
ANALYTICAL CHEMICAL LABORATORY			
17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS 17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS			-205] 21]
ARATEX			
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82	[131	-135]
ATT			
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN	84	[1-6	1
AUBURN UNIVERSITY			
17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES 17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF			-129] -132]
SILICON-ON-SAPPHIRE DIODES BDM CORPORATION			
	••		.
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS 17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES 17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS 17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION	81 81 81	[114 [145 [167	62] -119] -150] -173] -188]
BELL COMMUNICATIONS RESEARCH, INC.			
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL	84	[40-	44 j
BELL LABORATORIES			
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 18172- 6 ESD BY STATIC INDUCTION 18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS	83 83	[17-]	-188] 20] 36] 18]
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES		-	64]
17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	80	[17-	-241} 22]
17516-12 PROTECTION OF HOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE			80]
17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS		-	-183] -192]

Section 4:

CORPORATE INDEX

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
wunsch, d. c.	
17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS	81 [167-173]
YEE,J.H.	
18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA	83 [108-117] 82 [76-81]
YENNI, D. M.	
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS A SIMPLE MODEL FOR STATIC PROTECTION	82 [94-109] AND A 79 [45-54]
YOUN,S.Y.	
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]
YOUNG, P.A.	
17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNO	DLOGIES 81 [114-119]
ZAJAC,H.	
17516- 9 STUDY OF EFFECTS OF ELECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES	80 [58]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
VAN LINT, V.A. J.	
17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS	80 [149-153]
VOLMERANGE, H.	
18214- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES	82 [62-70]
VULIET, W.	
17517-33 EOS DAMAGE IN SILICON SOLAR CELLS	81 [209-235]
WALKER, R. C.	
18214- 5 LATENT ESD FAILURES 17516- 8 IDENTIFICATION OF LATENT ESD FAILURES	82 [41-48] 80 [54-57]
WARD, A. L.	
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES 18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWN	83 [102-107] 82 [71-75]
17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN 17515-16 DOPING PROFILES AND SECOND BREAKDOWN	80 [130-139] 79 [109-115]
WATSON, D. E.	
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION	84 [7-19]
WEBER, D. C.	
18214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS	82 [115-119]
WEIGHT, M. E.	
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	82 [145-156]
WHALEN, J. J.	
17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS 17515-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS	79 [147-157] 79 [140-146]
WHITE, L.S.	
18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES	83 [181-184]
WHITEHEAD, A.P.	
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY	83 [147-153]
WILSON, D.	
18172-19 ESD SENSITIVITY OF COMPLEX ICS	83 [128-133]
WOODHOUSE,J.	
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS	84 [189-195]
WU,C.	
17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN	80 [23-25]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
TEMPLAR, L. C.	
17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL	81 [151-166]
TENG, T.	
17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS	80 [87-94]
17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [168-175]
TENZER, F. D.	
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS	81 [44-48]
THOMAS, R. E.	
17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES	81 [139-144]
THOMAS, R. M.	
17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS	81 [198-201]
THOMPSON, W. H.	
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE	84 [22-23] 83 [21-28]
(EOS/ESD) CONTROL 18214- 6 A SUVREY OF EOS/ESD DATA SOURCES	82 [49-55]
THORN, M. L.	
17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS	79 [147-157]
TOPOLSKI,A.S.	
17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81 [65-74]
TURNER, T. E.	
17516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS	80 [95-103]
TWEET,A.	
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	82 [145-156]
TWIST, R. E.	
18214- 5 LATENT ESD FAILURES 17517- 3 ANALYSIS OF ESD FAILURES	82 [41-48] 81 [14-20]
UETSUKI,T.	
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS	79 [88-96]
UNGER, B.	
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES	81 [57-64]
UNGER, B.A.	
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172- 6 ESD BY STATIC INDUCTION 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	84 [40-44] 83 [29-36] 80 [17-22]

AUTHOR DOCUMENT-SEQUENCE NO. TITLE	YEAR	PAGES
SKELTON,D.J.		
18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS	82 [9]	-93]
SMITH, J.G.		
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [19	6-201]
SMITH, J. S.		
17517-20 MODELING OF EOS IN SILICON DEVICES 17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT 17515-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES	81 [19	32-138] 92-197] 33-139]
SMYTH, J. B.		
17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS	80 [14	9-153]
SNYOER, H. Z.		
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	80 [12	2-16]
SODEN, J. M.		
18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	83 [13 79 [17	34-146] 76-182]
SOHL, J. E.		
17516-32 AN EVALUATION OF WRIST STRAP PARAMETERS	80 [2]	18-224]
STEWART, H. D.		
18172-20 ESD EVATUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS	83 [13	34-146]
STORM, D. C.		
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT HARDWARE	r 79 [4 -	-6]
STOTTS, L. J.		
18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE	83 [11	18-121]
STRAND, C. J.		
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM	82 [14	5-156]
TABATA,Y.		
18305- 9 ESTIMATION OF DISCHARGE ENERGY RELEASED FROM CHARGED INSULATOR	84 [50)-57]
TASCA, D. M.		
17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS	81 [17	74-191]
TAYLOR, R. G.		
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84 [16	39-195] 55-178]
18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS	-	35-197] 7-100]

KEYWORD				
DOCUMENT-SEQUENCE NO. TITLE	YEAR	<u> </u>	AGES	3
ANALYSIS				
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS 18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES 17517- 3 ANALYSIS OF ESD FAILURES	83 [83 [83 [82 [81 {	189- 6-11 17-2 154- 175-	0] 157] 178]	j]]]]
17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS 17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17516-11 ANALYSIS OF ESD DAMAGE IN JET PREAMPLIFIERS 17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION 17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	81 [81 [81 [80 [80 [79 [29-3 44-4 101- 151- 219- 67-7 149- 64-7 88-9	8] -105] -166] -224] 72] -153] 77]]]]]]
17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [205-	209]	l
ANTI-STATIC				
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS	84 (78-8	34]]
ANTISTATIC				
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 (87-9	4])
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS 17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81	120- 44-4 65-7	8	j
BAG				
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS 18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES		78-8 87-9		_
BARRIER				
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES	79 [97-1	.03]	ł
BIPOLAR				
17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIFGLAR TRANSISTORS 17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIFOLAR TRANSISTORS 17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIFOLAR DEVICES 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIFOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION	80 [80 [79 [59-6 112- 117- 64-7	116] 121] 7) }
17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	79 (188-	192]	ı
вох				
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE BOXES	83 [87-9	4]	ì
BREAKDOWN				
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 18214- 9 THE PORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND BREAKDOWP	83 [83 [102- 108- 118- 71-7	117] 121]	j]

KEYWORD DOCUMENT-SEQUENCE NO. TITLE	YEAR	PAGES
BREAKDOWN		
18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES 17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES 17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN 17515-16 DOPING PROFILES AND SECOND BREAKDOWN 17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS 17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	82 [9] 80 [1] 80 [1] 80 [1] 79 [1]	6-81] 1-93] 17-121] 22-129] 30-139] 09-115] 16-121] 26-132]
BURNOUT		
18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS 17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT 17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS CALCULATION	81 [19	6-61] 92-197] 47-157]
	02 [1/	02 1071
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES	03 (10	02-107]
CAPACITOR 18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND	82 (1:	3-18 Ì
CAPACITORS 17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS		74-191]
CCD	01 (1)	4 1/11
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY	83 [14	47-153]
CELL	05 (1	********
17517-33 EOS DAMAGE IN SILICON SOLAR CELLS 17516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS		09-235] 49-153]
CHARACTERIZATION		
18305- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS 18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES		5-49] 24-130]
CHIP		
17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES	81 [90	0-96]
CLEAN		
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [13	31-135}
CMOS		
18305-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW 18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 17516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY 17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES 17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC	83 [13 80 [10 79 [4]	02-209] 34-146] 04-111] 1-44] 5-63]
17513-25 THE DIELECTAIC STRENGTH OF SIOZ IN A CMOS TRANSISTOR STRUCTURE		76-182
COMPLEX		
18172-19 ESD SENSITIVITY OF COMPLEX ICS	83 [12	28-133]

KEYWORD DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
COMPONENT	
18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS I HONITORS	IN 84 [136-143]
17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS	81 [167-173] 80 [206-212]
CONDUCTIVITY	
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS 17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS	82 [120-123] 79 [7-12]
CONTAMINATION	
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 [131-135]
CONTROL	
18305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN	84 [1-6]
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL	84 [25-33] 84 [40-44]
18305-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINAT	
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	83 [6-11]
18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHAR (EOS/ESD) CONTROL	RGE 83 [21-28]
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS	82 [94-109] 81 [29-33]
17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL	81 [151-166]
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES	80 [44-53]
17516-31 STATIC CONTROL SYSTEMS	80 [213-217]
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECR HARDWARE	AFT 79 [4-6]
17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS	79 [13-21]
17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM BACKGROUND AND STATUS	- 79 [27-35]
COST	
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS	83 [6-11]
CURRENT	
18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	82 [76-81] 79 [126-132]
DEFECT	
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS	83 [198-204]
DEGRADATION	
18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84 [165-178]
DESIGN	
18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION 17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS 17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN 17516-13 SOS PROTECTION: THE DESIGN PROBLEM	84 [112-123] 84 [179-188] 82 [169-174] 81 [97-100] 80 [23-25] 80 [81-86]
17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AN LAYOUT VARIATIONS	ID 80 [87-94]

SECTION V, PAGE 3

■フンソンシャンで関係であるのできる場所できたのである。 1000年度からためのでは、1000年度からのでは、1000年度からのでは、1000年度が1000年度に1

KEYWORD DOCUMENT-SEQUENCE NO. TITLE	YEAR	PAGES
DESIGN		
17516-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES 17516-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR 17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	80 [16	17-121] 67-175] 88-192]
DIAGNOSIS		
17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE	81 [10	01-105]
DIELECTRIC		
17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	79 [17	76-182]
DIODE		
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES 17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES 17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES 17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF SILICON-ON-SAPPHIRE DIODES	80 {12 79 [9]	02-107] 22-129] 7-103] 26-132]
DYNAMIC		
17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE	79 [78	8-87]
ELECTRO-THERMAL		
17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS	80 [26	06-212]
ELECTRONIC		
17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS	80 [16	40-148] 61-166] 06-212]
ELECTROSTATIC	00 (0	,
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL		5-33] 0-44]
18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER	-	3-63
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1	84 [9]	7-103]
18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES		7-20]
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS		3-55]
18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORILS AND THEIR OBSERVED FAILURE MODES		
18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND CAPACITORS		3-18]
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM 18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL		45-156] 70-1841
18214-27 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL 18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS	= =	79-184] 35-189]
17517-32 TIME-RELATED IMPROVEMENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY		25-228]
DAMAGED OPERATIONAL AMPLIFIERS 17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS	81 [2	36-241]
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE		2-16]
17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN	7	3-25]
17516-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE	80 [73	3-80]
17516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS	80 [9:	5-103]

ELECTROSTATIC	
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT 79 [4-6	. 1
HARDWARE 17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS 79 [7-1 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 79 [22-	
GASEOUS PRESSURE TESTS 17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM - 79 [27-BACKGROUND AND STATUS	-
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR 79 [36-	-
17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE 79 [78-17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES 79 [97-	103
17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION 79 [122 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 79 [168	
17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS 79 [193	
EMP	
17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP 79 [158 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [198	
EMPIRICAL	
17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN 81 [29- EMPIRICAL ANALYSIS	33]
EPROM	
17517-34 EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS 81 [236	-241]
EQUIPMENT	
18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 84 [20- 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 83 [48-	
MODELS	_
	43 ;
ESD 19205 1 4 PRALICITIC AND CYCTEMATYC PCD CONTROL DIAN	,
18305- 1 & REALISTIC AND SYSTEMATIC ESD CONTROL PLAN 84 [1-6 18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 84 [20-	21]
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS? 18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS 84 [22-	
PROPENSITY ON PACKING MATERIALS	_
18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS 84 [78-18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 84 [104	
18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 84 [112	=
18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAPARP GOVERNS THE EMI 84 [124 18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE 84 [165 MICROPROCESSORS	
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 84 [179	= =
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS 84 [189 18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HOMOS INTEGRATED CIRCUITS 84 [196	
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HOMOS INTEGRATED CIRCUITS 84 [196 18305-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW 84 [202	= =
18172- 1 ESD-HOW OFTEN DOES IT HAPPEN? 83 [1-5]	
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS 18172- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE? 83 [12-	
18172- 6 ESD BY STATIC INDUCTION 83 [29-	
18172-19 ESD SENSITIVITY OF COMPLEX ICS 83 [128	
18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS 83 [134] 18172-21 THE EFFECT OF ESD ON CCD RELIABILITY 83 [147]	
18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE? 83 [154	-157]
18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS 83 [185	
18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-1]	= =

KEYWORD DOCUMENT-S	SEQUENCE NO. TITLE	YEAR	<u> </u>	PAGES
ESD				
18214-15 18214-17	LATENT ESD FAILURES ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS	82 82	[115 [124	48] -119] -130] -135]
	BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION)			-141] -144]
	ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT			-164] -168]
18214-25	IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES		175	-178]
17517- 2	A CLOSER LOOK AT THE HUMAN ESD EVENT QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/ SUPPRESSION	81	9-1	.3 j
	ANALYSIS OF ESD FAILURES THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN EMPIRICAL ANALYSIS			33]
	A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT A CASE HISTORY	81	[34 -	39]
	A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS		-	43] 84]
	SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS		-	-113]
	POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS		_	-211]
	ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS IDENTIFICATION OF LATENT ESD FAILURES		=	22] 57]
	ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS		-	72
	LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS			94]
	SUPRISING PATTERNS OF CHOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY		_	-111]
	AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS		_	-191] !-205]
	MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD			~230]
	AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM	79	1-3	1
	ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS		-	-108] -192]
EVALUATION	ı			
	A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES		-	
	AN EVALUATION OF EOS FAILURE MODELS		•	~156] ~146]
	ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT			43
	EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES		_	64
	EVALUATION OF ELECTROSTATIC DISCHARGE TO 16K EPROMS		-	-241]
	FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS			-205] -224]
PAILURE	AN EVALUATION OF WRIST STRAP PARAMETERS	00 j	,210	-2241
18305-21	AN EVALUATION OF EOS FAILURE MODELS			-156]
	A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS			-195]
	POWER FAILURE MODELING OF INTEGRATED CIRCUITS SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL REVISITED			62] -127]
	EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE?			-157]
	A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS MEMORIES AND THEIR OBSERVED FAILURE MODES		_	
	ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES		-	33]
	LATENT ESD FAILURES			48
	A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES	82	82-	90]
17517- 3	ANALYSIS OF ESD FAILURES	81	14-	20]

KEYWORD DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
FAILURE	
17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD 17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES 17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS 17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL 17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE 17516-8 IDENTIFICATION OF LATENT ESD FAILURES 17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS 17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION 17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	81 [151-166] 81 [219-224] 81 [242-245] 80 [54-57] 80 [59-66] 80 [112-116] 79 [64-77] 79 [88-96] 79 [97-103]
FIELD	
	84 [7-19] 84 [34-39]
FLOOR	
18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES 18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES	83 [17-20] 82 [124-130]
GAS	
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS	80 [44-53] 79 [22-26]
GEOMETRY	
17515-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79 [183-187]
GOLD	
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES	79 [41-44]
нсмоѕ	
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS	84 [196-201]
HUMAN	
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS	83 [48-55]
17517- I A CLOSER LOOK AT THE HUMAN ESD EVENT 17516-33 MEASUREMENT OF FAST TRANSIENTS AND APPLICATION TO HUMAN ESD 17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION	81 [1-8] 80 [225-230] 79 [122-125]
HUHIDITY	
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 17517- 2 QUANTITATIVE EFFECTS OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/	83 [67-75] 81 [9-13]
SUPPRESSION 17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND DISCHARGE	80 [12-16]
INDUCED	
17515-30 THE ANALYSIS AND ELIMINATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79 [205-209]

YWORD	SEQUENCE NO. TITLE	YEAR	PAGES
(PUT			
17517-15	A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS	81 [97	2-209] -100] -103]
NSPECTIO	1		
17517-11	INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81 [65	-74]
NSTRUMENT	FATION		
18214-28	ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS	82 [19	0-202]
NSULATOR			
18305- 9	ESTIMATION OF DISCHARGE ENERGY RELEASED FROM CHARGED INSULATOR	84 [50	-57]
NTEGRATE			
18305-26 18172- 9	A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS POWER FAILURE MODELING OF INTEGRATED CIRCUITS METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	84 [19 83 [56	9-195] 6-201] -62] 8-176]
18214- 7 17517-10 17517-18	USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC DISCHARGE	83 [17 82 [56 81 [57 81 [11 80 [73	-61] -64]
17515-23	ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	79 [15	4-108] 8-167] 8-192]
INTERFACE			
17515-23	DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP	79 [15	8-167]
[NVESTIGAT	TION		
17517-18	ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES	81 [11	4-119]
ION			
	EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY MEASURING EFFECTIVENESS OF AIR IONIZERS		-39] -86]
CONIZATION	1		
	A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY		-44] -75]
IUNCTION			
18172-18	SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL	83 [12	2-127]
18214-11	REVISITED A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION	82 [82	-90]
17517-35	TRANSIENT-INDUCED FAILURES DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES	81 [24	1-105] 2-245] 2-129]

(WORD SUMENT-SEQUENCE NO. TITL	<u>E</u>	YEAR	PAGES
TENT			
3172-28 A STUDY OF ESD LATENT DEFECT 3214- 5 LATENT ESD FAILURES 7516- 8 IDENTIFICATION OF LATENT ES		82 [4]	98-204] 1-48] 4-57]
PE			
8305-14 A WRIST STRAP LIFE TEST PRO	GRAM	84 [94	¥-96]
GHTNING			
7517-30 LIGHTNING PROTECTION FOR CO 7516-24 TEST WAVEFORMS AND TECHNIQU LIGHTNING-INDUCED TRANSIENT	ES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF		12-218} 51-166]
7516-25 LIGHTNING PROTECTION DESIGN		80 [16	57-175]
I			
	CIRCUITS AND THEIR FAILURE CHARACTERISTICS OR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND		35-197] 7-94]
7515-24 SUSCEPTIBILITY OF LSI MOS T	O ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [16	8-175]
TERIAL			
.8305- 8 STATIC-ELECTRIC CHARACTERIZ .8305-10 TRIBOELECTRIC TESTING FOR E CENTER	ATION OF SEMI-INSULATING MATERIALS LECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE	= =	5-49] 8-63]
	SD ABILITY AND A MEASUREMENT METHOD FOR ITS	84 [64	4-77]
.8305-13 A MATERIAL EVALUATION PROGR .8305-15 TESTING OF ELECTROSTATIC MA .8172-14 COPLANAR TRIBOELECTRIFICATI .8214-15 ELECTROACTIVE POLYMERS AS A .7517- 7 A LOW-COST PROGRAM FOR EVAL .7517- 8 AN ANALYSIS OF ANTISTATIC C .7517- 9 CHO-TRAP, A NOVEL VOLTAGE T .7517-11 INCOMING INSPECTION OF ANTI .7517-12 SELECTION OF PACKAGING MATE	AM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES TERIALS FED. STD. 101C, METHOD 4046.1 ON OF SELECTED MATERIALS LTERNATE ESD PROTECTIVE MATERIALS UATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT USHIONING MATERIALS RANSIENT PROTECTION PACKAGING MATERIAL STATIC PACKAGING MATERIALS	84 [9] 83 [9] 82 [1] 81 [4] 81 [4]	7-103] 5-101] 15-119] 1-43] 4-48] 9-56] 5-74]
ASUREMENT			
.8305- 5 ELECTROSTATIC MEASUREMENT F .8305-11 TRIBOELECTRIC CHARGE: ITS E PROPENSITY ON PACKING MATER	SD ABILITY AND A MEASUREMENT METHOD FOR ITS	= =	5-33] 4-77]
.7516-33 HEASUREMENT OF FAST TRANSIE	NTS AND APPLICATION TO HUMAN ESD	80 [2:	25-230]
CHANISM			
.8305-22 DETERMINATION OF THRESHOLD DEVICES SUBJECTED TO VOLTAG	E TRANSIENTS		57-164]
	ILURE MECHANISMS IN BIPOLAR TRANSISTORS N OF EOS INDUCED SECONDARY FAILURE MECHANISMS		12-116] 05-209]
MORIES			
.8172-26 A SUMMARY OF MOST EFFECTIVE MEMORIES AND THEIR OBSERVED	ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS FAILURE MODES	83 [18	81-184]
SPET			
.7515-22 MICROWAVE NANOSECOND PULSE	BURNOUT PROPERTIES OF ONE MICRON MESFETS	79 [1	47-157]

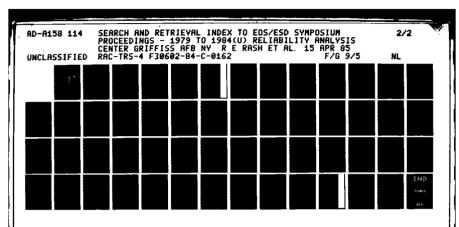
RD IENT-SEQUENCE NO. TITLE	:	YEAR	PAGES
•			
12-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-	VOLT INTEGRATED	83 [1	68-176]
CIRCUITS 4-14 METALLOPLASTICS		82 [1	10-114]
LLIZATION			
14- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS		82 [5	6-61]
ł			
72-10 STATIC SURVEY METERS		83 [6	3-66]
OC			
05-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT M PROPENSITY ON PACKING MATERIALS	ETHOD FOR ITS	84 [6	4-77]
D5-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD			7-103]
D5-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE T 14-13 TEST METHODS FOR STATIC CONTROL PRODUCTS	= "		89-195] 4-109]
OCIRCUIT			
16-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND C	•	_	84-188]
15-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICRO TECHNIQUES FOR FAILURE SITE LOCATION			_
15-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL	. OVERSTRESS	79 [8	8-96]
OWAVE			
72-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MIC 15-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICR			02-107] 47-157]
72-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CM	OS AND MNOS ICS	83 [1	34-146]
72-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTE MEMORIES AND THEIR OBSERVED FAILURE MODES	CTION CIRCUITS FOR MOS	83 [1	81-184]
14-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHE	NOMENA	82 [7	6-81]
TOR			
05-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (E	OS) AND TRANSIENTS IN	84 [1	36-143]
MONITORS 16- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN	:	80 [2	3-25]
72-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTE MEMORIES AND THEIR OBSERVED FAILURE MODES	CTION CIRCUITS FOR MOS	83 [1	81-184]
14-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TE			57-164]
16-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY DISCHARGE		•	3-80]
15-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT E	LEVATED TEMPERATURE	79 [1	68-175]
05-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTA MICROPROCESSORS	GE OF NMOS 8085-TYPE	84 [1	65-178]
72-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CH 17-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES		_	85-197] 0-96]

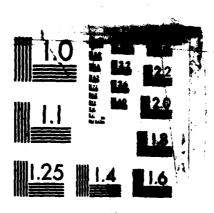
ENT-SEQUENCE NO. TITLE	YEAR PAGES
7-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS	81 [97-100]
TRESS	
5-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN HONITORS	84 [136-143]
2- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE (EOS/ESD) CONTROL	83 [21-28]
4- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES 4- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING	82 [19-33 } 82 [34-40]
7-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE	81 [101-105]
7-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES	81 [114-119]
6-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS 6-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS	80 [140-148] 80 [149-153]
6-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS	80 [154-160]
.6-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION	80 [184-188]
.6-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS .5-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS	80 [206-212] 79 [64-77]
TECHNIQUES FOR FAILURE SITE LOCATION	
15-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS 15-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES	79 [88-96]
15-21 SOUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS	79 [133-139] 79 [140-146]
15-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY	79 [183-187]
E	
72-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED CIRCUITS	83 [168-176]
AGING	
17- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL	81 [49-56]
17-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS	81 [65-74]
17-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS	81 [75-84]
YETER	
16-32 AN EVALUATION OF WRIST STRAP PARAMETERS	80 [218-224]
LVE	
17-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS 16- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE	81 [167-173] 80 [1-11]
ERN	
16-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM RELIABILITY	80 [104-111]
OVOLTAIC	
16-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR	80 [167-175]
ric	
14-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS	82 [120-123]
MER	
14-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS	82 [115-119]

-sequence no.	TITLE	YEAR	PAGES
REVISITED 15 PULSE POWER RESPONSE A 17 BEHAVIOR OF THICK-FILM	OF INTEGRATED CIRCUITS I NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL IND DAMAGE CHARACTERISTICS OF CAPACITORS I POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS LEAKDOWN IN POWER TRANSISTORS	83 [12 81 [13 81 [19	5-62] 22-127] 74-191] 98-201] 16-121]
ION			
% PREDICTION OF THIN-FIL	M RESISTOR BURNOUT	81 [19	92-197]
	MENT FOR PROCESS CONTROL EN FOR THE 3-MICRON NMOS PROCESS ONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND	81 [9]	5-33] 7-100] 7-94]
ION			
10 PROTECTION OF COMPONEN MONITORS	TS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN	84 [13	36-143]
17 A CMOS VLSI ESD INPUT	PROTECTION DEVICE, DIFIDW FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED		02-209] 68-176]
!5 USING SCR'S AS TRANSIE	ENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS CCTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOSE REVED FAILURE MODES	-	77-180] 81-184]
!1 AN EFFECTIVE ELECTROST !3 UNIFORM ESD PROTECTION !4 CIRCUIT DESIGN FOR EOS 9 CHO-TRAP, A NOVEL VOLT 14 ON CHIP PROTECTION OF 15 INPUT PROTECTION DESIGN 10 LIGHTNING PROTECTION F 1 PASSIVE STATIC PROTECT 15 TRANSIENT PROTECTION W 16 PROTECTION LEVEL COMPA	AGE TRANSIENT PROTECTION PACKAGING MATERIAL HIGH DENSITY NMOS DEVICES N FOR THE 3-MICRON NMOS PROCESS	82 [16 82 [16 82 [16 81 [49 81 [97 81 [27 80 [1- 80 [26 80 [35]	5-34
3 SOS PROTECTION: THE DE 14 LSI DESIGN CONSIDERATI	SIGN PROBLEM ONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND	7	1-86] 7-94]
5 LIGHTNING PROTECTION D THE DEFICIENCIES IN MI SIMPLE MODEL FOR STATI B HUMAN FACTORS IN ELECT		80 [16 79 [45 79 [12	5-103] 57-175] 5-54] 22-125] 93-197]
10 OSCILLATING VOLTAGE PU 11 SQUARE PULSE AND RF PU	AND DAMAGE CHARACTERISTICS OF CAPACITORS PLISES AND SECOND BREAKDOWN PLISE OVERSTRESSING OF UHF TRANSISTORS PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS	80 [13 79 [14	74-191] 30-139] 40-146] 47-157]
	ATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS	83 [13	34-146]

EQUENCE NO.	TITLE	YEA	R :	PAGI	ES
t					
THE EFFECT OF ESD ON C	TATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS CCD RELIABILITY CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM	83	[134 [147 [104	-153	3 J
	REENED GOLD DOPED 4002 CMOS DEVICES	79	[41-	44	J
ELECTROSTATIC DISCHARG	GE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND	82	[13-	18	1
PREDICTION OF THIN-FILE BEHAVIOR OF THICK-FILE	LM RESISTOR BURNOUT 1 POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS		[192 [198		•
SQUARE PULSE AND RF PU	ULSE OVERSTRESSING OF UHF TRANSISTORS	79	[140	-140	ś j
	TEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL ON SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY		[40-4		
	FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS		[131		-
THE EFFECTS OF VLSI SO	CALING ON EOS/ESD FAILURE THRESHOLD	81	[85-	89]
ESD SUSCEPTIBILITY TES ELECTROSTATIC FAILURE			[1-1: [97-		
THE FORWARD-BIAS CHARA BREAKDOWN	ACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND	82	[71-	75]
	REENED GOLD DOPED 4002 CHOS DEVICES	79	[41-	44	ľ
AN EXPERIMENTAL STUDY	OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS	84	[78-	84	1
	NEW JEOPARDY AND A NEW TOOL DEREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES		[131- [102-		
	FOR SECOND BREAKDOWN PHENOMENA BREAKDOWN AT A WELL-DEFINED SITE		[108- [118-		-
	CTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND				
MODELING OF CURRENT AN SECOND BREAKDOWN IN SW	ID THERMAL MODE SECOND BREAKDOWN PHENOMENA		[76-8 [91-9		-
	FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES		[91-\ [117-		
EFFECT OF JUNCTION SPI	IKES AND DOPING LEVEL ON THE SECOND BREAKDOWN		[122		
	ILSES AND SECOND BREAKDOWN		[130		
DOPING PROFILES AND SE	COND BREAKDOWN LEAKDOWN IN POWER TRANSISTORS		[109· [116·		
	L FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF		[126-		
	NATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS	79	[205	-209)

UENCE NO.	TITLE	YEAR	<u>P</u>	AGE	<u>:s</u>
	NEW JEOPARDY AND A NEW TOOL NATION OF EOS INDUCED SECONDARY FAILURE MECHANISMS		[131- [205-		-
TERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR VICES SUBJECTED TO VOLTAGE TRANSIENTS			[157-	164	,]
VISITED	N NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL DEFECTS IN SEMICONDUCTORS		122- 198-		-
MITATIONS IN MODELIN	G ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES	82	19-3	3	j
	FECTS ON SEMICONDUCTOR DEVICES PAILURE CRITERIA FOR SINUSOIDAL STRESSES	:	120- 139-		•
LILURE ANALYSIS OF SE	MICONDUCTOR DEVICES IN EOS/ESD TESTING	81	219-	224	ij
)N-LINEAR KINETICS OF	SEMICONDUCTOR JUNCTION THERMAL FAILURE	81	[242-	245	,]
D SENSITIVITY AND LA D SENSITIVITY OF COM	TENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS		[196-: [128-		-
	S LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS		185-		1
LECTROSTATIC SENSITIV	ITY OF VARIOUS INPUT PROTECTION NETWORKS	80 [95-1	03]
HE DIELECTRIC STRENGT	TH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	79	[176-	182	:]
	BREAKDOWN IN SILICON DIODES AT MICROWAVE FREQUENCIES		102-		
DDELING OF EOS IN SIL DS DAMAGE IN SILICON			132- [209-		
FFECT OF JUNCTION SPI	KES AND DOPING LEVEL ON THE SECOND BREAKDOWN CON-ON-SAPPHIRE DIODES		122-		
HE GENERATION OF ELECTION ASSOCIATION OF THE STATE OF THE	TROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC	79	22-2	6]
	OF X-BAND SILICON SCHOTTKY BARRIER DIODES L FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF		[97-1 [126-		-
	OVERSTRESS IN SILICON DEVICES	79	133-	139)]
LECTROSTATIC DISCHARG	E PROTECTION USING SILICON TRANSIENT SUPPRESSORS	79	[193-	197	1
DS DAMAGE IN SILICON			209-		
OLAR CELL ELECTRICAL	UVERSTRESS ANALYSIS	80	[149-	153	1
RIBOELECTRIC TESTING	FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE	84	58-6	3]
-	TIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT	79	4-6		1
NC					
	OR ESD PROTECTION IN INDUSTRY LITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A C PROTECTION		136- 45-5		-
NZARDS OF STATIC CHAR	GES AND FIELDS AT THE WORK STATION	84 I	7-19		1





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

KEYWORD IN TITLE INDEX		
DOCUMENT-SEQUENCE NO. TITLE	YEAR	PAGES
STATIC		
18305- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS 18305-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18172- 6 ESD BY STATIC INDUCTION 18172-10 STATIC SURVEY METERS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE 17516-31 STATIC CONTROL SYSTEMS 17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS 17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A SIMPLE MODEL FOR STATIC PROTECTION	84 [8 84 [1 83 [2 83 [6 82 [9 80 [1 80 [2 79 [1	12-123] 9-36] 3-66] 4-109]
STATION		
18305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION	84 [7	-19 }
STATISTIC		
17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	79 [1	98-204]
STEP		
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS	81 [1	06-113]
STRAP		
18305-14 A WRIST STRAP LIFE TEST PROGRAM 17516-32 AN EVALUATION OF WRIST STRAP PARAMETERS	=	4-96] 18-224]
STRESS		
17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES	81 [1	39-144]
STRUCTURE		
18172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS 17516-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND LAYOUT VARIATIONS		77-180] 7-94]
17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	79 [1	76-182]
SUBSTRATE		
18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE MICROPROCESSORS	84 [1	65-178]
SUPPRESSOR		
17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE) 17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS		
SURFACE		
18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES 17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS		24-130] -12]
SURGE		
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS		4-53] 76-183]
SUSCEPTIBILITY		
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING	84 [1	79-188}

SUSCEPTIBILITY SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 1211-1-1 ESD SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 105-113 1106-113 11	KEYWORD	
18214-1 ESD SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17315-173 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17315-174 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17315-125 SUSCEPTIBILITY OF STRESS AND DOPING LEVEL ON THE SECOND BREAKDOWN 17315-125 SUSCEPTIBILITY OF STRESS AND DOPING LEVEL ON THE SECOND BREAKDOWN 17315-125 SUSCEPTIBILITY OF STRESS AND DOPING LEVEL ON THE SECOND BREAKDOWN 17315-125 SUSCEPTIBILITY OF STRESS AND DOPING LEVEL ON THE SECOND BREAKDOWN IN SWITCHING TRANSISTORS 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 18305-7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18212-12 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 18214-22 ELECTROSTATIC DISCHARGE INHUMITY IN COMPUTER SYSTEMS 18214-22 ELECTROSTATIC DISCHARGE INSTRUMENTATION SYSTEMS 18214-25 ELECTROSTATIC DISCHARGE INSTRUMENTATION SYSTEMS 18214-26 ELECTROSTATIC OFFEND OFF	DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
17511-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-12 SUBSTRISH CATTERNS OF CHOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM (6 [104-111]) 17516-19 EFFECT OF JUNCTION SPIKES AND DOFING LEVEL ON THE SECOND BREAKDOWN SUSCEPTIBILITY OF SILECON-ON-SAPPHIRE DIODES SWITCH 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS SVITCH 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 82 [91-93] SYSTEM 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE TRAN AOX RELATIVE HUMIDITY 18214-22 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS 82 [195-20] 17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRORIC SYSTEMS 82 [190-202] 17516-23 TATLIC COMPROLIS SYSTEMS 83 [104-12] 17515-25 STATISTICAL FAILURE ANALISIS OF HILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [188-204] TECHNIQUE 18214-22 ESD HINIHIZATION TECHNIQUES TO ASSESS THE THREAT TO ELECTRORIC DEVICES OF LICHWING. THE CHORGED TRANSISTEMS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-12 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-12 EFFECTS OF ELECTRORICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-12 EFFECTS OF ELECTRORICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-12 EFFECTS OF ELECTRORICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-12 ENFERTATIONE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 18305-3 TEST EQUIPHENTA SOURCE OF ESD11 18305-3 TEST EQUIPHENTA SOURCE OF SELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 181715-2 SUSCEPTIBILITY OF ISI MOS TO ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18172-18 HIGHLY AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 1876-19 SUSCEPTIBILITY OF ISI MOS TO ELECTROSTATIC CHARGES ON MATERIALS AT REMARDY SPACE 18171-183-1931-19 SUSCEPTIBILITY TESTIM AND DESIGN HANDERING	SUSCEPTIBILITY	
17516-16 SUPRISHING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM 80 [104-111] RELIABILITY 17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN 80 [122-129] SUSCEPTIBILITY OF SILCON-ON-SAPPHIRE DIODES 17515-24 SUSCEPTIBILITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 79 [168-175] SWITCH 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 82 [91-93] 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM, A RETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY 83 [67-75] 18214-22 ELECTROSTATIC DISCHARGE INHUNITY IN COMPUTER SYSTEMS 82 [185-189] 18214-22 ELECTROSTATIC DISCHARGE INHUNITY IN COMPUTER SYSTEMS 82 [185-189] 17515-31 STATIC CONTROL SYSTEMS 82 [185-189] 17515-32 STATISTICAL FAILURE ANALYSIS OF NILLITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [194-204] TECHNIQUE 18214-22 ESD HIMILIZATION TECHNIQUE FOR MOS HANUPACTURING FINAL TEST AREA 80 [213-2,17] 17515-21 EXPERTANCE AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 117515-11 EFFECTS OF PLACETRICAL OFFICENSTRESS SPECIES OF SIGNATURE AND ANALYSIS 79 [46-77] TECHNIQUE 18214-22 ESD HIMILIZATION TECHNIQUE FOR MOS HANUPACTURING FINAL TEST AREA 82 [137-164] 17515-24 SUSCEPTIBLITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 83 [161-165] 17515-24 SUSCEPTIBLITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 84 [40-46] 18305-13 TEST EQUIPMENT-A SOURCE OF ESD1! 84 [40-46] 18305-14 A WRIST STRAP LIFE TEST PROCRAM 181017-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 83 [79-47] 18214-12 SESD HIBLITATION TECHNIQUE FOR MOS MANUPACTURING FINAL TEST AREA 84 [40-46] 18214-12 SEST MINIMIZATION TECHNIQUES FOR ASSESS THE THREAT TO ELECTROSTATIC DISCHARGE FOR MALUPACTURING FINAL TEST AREA 84 [40-46] 18305-10 TRIBOELECTRIC TESTING FOR SECONDS PRESURE TESTS 81 [106-113] 18305-12 ORIGINATION TECHNIQUE FOR MOS MANUPACTURING FINAL TEST AREA 84 [40-41] 18305-13 DESCRIPTIBLITY OF LICS THE SE		T T
SUICEPTIBLITY OF SILCON-ON-SAPPHER DIDORS 17515-24 SUSCEPTIBLITY OF SILCON-ON-SAPPHER DIDORS 17515-24 SUSCEPTIBLITY OF SILCON-ON-SAPPHER DIDORS SWITCH 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 82 [91-93] SYSTEM 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM A BETTER ALTERNATIVE THAN 40% RELATIVE HUNDIDITY 18214-22 ELECTROSTATIC DISCHARGE INHUITY IN COMPTER SYSTEMS 18214-22 ELECTROSTATIC DISCHARGE INHUITY IN COMPTER SYSTEMS 17516-31 STATIC CONTROL SYSTEMS 17515-33 STATIC CONTROL SYSTEMS 17516-24 STATISTICAL FAILURE ANALYSIS OF HILITARY SYSTEMS FOR HIGH-ALTITUDE EMP TECHNIQUE 18214-22 ESD HINIHIZATION TECHNIQUE FOR MOS HANUFACTURING FINAL TEST AREA 17516-24 TEST MAYEROAMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTROSTIC DEVICES OF 18214-27 ENTIRE THE STATE CONTROL SYSTEMS SOR DIGITAL BIPOLAR HICROCIRCUITS AND AMALYSIS 17515-12 IEFFECTS OF ELECTRICAL OVERSTENSS ON DIGITAL BIPOLAR HICROCIRCUITS AND AMALYSIS 17515-24 SUSCEPTIBLITY OF LIST HOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 18305-3 TEST EQUIPMENTA SOURCE OF ESD1! 18305-10 A WRIST STRAP LIFE TEST PROGRAM 18112-2 ESD MINIMIZATION FOR STATIC CONTROL FRODUCTS 18114-12 ESD MINIMIZATION FOR STATIC CONTROL FRODUCTS 18114-12 ESD MINIMIZATION FERDINGUES TO ASSESS THE THREAT TO ELECTROSIC DEVICES OF LICHTNING-INDUCED TRANSIERTS 18115-15 SINGEPTIBLITY OF ICS IN ESD STEP-STRESS THST 18115-5 THE GEBERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18216-153 17516-26 SUSCEPTIBLITY OF TICS IN ESD STEP-STRESS THE THREAT TO ELECTROSIC DEVICES OF LICHTNING-INDUCED TRANSIERTS 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT REMBEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT REMBEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR SECO	17516-16 SUPRISING PATTERNS OF CHOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM	
SWITCH 18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 82 [91-93] SYSTEM 18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18214-27 ELECTROSTATIC DISCARGE INHUNITY IN COMPUTER SYSTEMS 18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS 84 [40-44] 18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS 85 [191-93] 18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS 86 [103-193] 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS POR NIGH-ALITITUDE EMP 79 [182-204] TECHNIQUE 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17516-24 TEST MAYEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTRUSC-INDUCED TRANSISHYS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIFOLAR MICROGIRCUITS AND ANALYSIS 17515-24 SUSCEPTIBILITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 18305-3 TEST EQUIPHENT-A SOURCE OF ESD!! 18305-4 A WRIST STRAP LIFE TEST PROCRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 155V 18214-21 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18172-17 SUSCEPTIBILITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305-14 A WRIST STRAP LIFE TEST PROCRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 155V 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD MINIMIZATION TECHNIQUES FOR MANUFACTURING FINAL TEST AREA 20 [175-164] 17515-5 THE CENTRAL PROCRAM AND PROCESSES THE THREAT TO ELECTRONIC DEVICES OF 21 [176-183] 21 [176-183] 21 [176-183] 21 [176-184] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 21 [176-185] 22 [177-186] 23 [176-185] 24 [176-185] 25 [176-185] 26 [176-185] 27 [176-185] 28 [176-185] 28 [176-185] 29 [176-185] 20 [176-185] 20 [176-185] 20 [1	17516-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN	80 [122-129]
18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS 82 [91-93] SYSTEM 18305-7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL. 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAM 40% RELATIVE HUMIDITY 83 [67-75] 18214-27 ELECTROSTATIO DISCHARGE INHUBITY IN COMPUTER SYSTEMS 82 [180-189] 18214-28 ELECTRICAL CROUNDING IN LARGE INSTRUMENTATION SYSTEMS 82 [180-189] 17516-31 STATIC CONTROL SYSTEMS 17515-39 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP TECHNIQUE 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTROMIC DEVICES OF 18175-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ARALYSIS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ARALYSIS TEST TEST TEST 18305-3 TEST EQUIPMENTA SOURCE OF ESD1! 18305-14 A WRIST STRAP LIFE TIST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15XY SISCEPTIBILITY OF ISS IN SED SYSTEMS FREES TESTS 18216-24 TEST MUTUROUS FOR STATIC CONTROL PRODUCTS 18216-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17516-24 TEST METHODS FOR STATIC CONTROL PRODUCTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18216-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18216-25 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-27 THE GENERAL FORM OF BELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC CASEOUS PRESSURE TESTS TESTING 18305-16 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 284 [39-63] 17616-183] 17516-27 THE OPERATOR OF EL		79 [168-175]
18305- 7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUNDIDITY 18214-27 ELECTROSTATIC DISCHARGE INHUNITY IN COMPUTER SYSTEMS 20 185-189 18214-28 ELECTRICAL CHOUNDING IN LARGE INSTRUMENTATION SYSTEMS 21 190-2021 17516-31 STATIC CONTROL SYSTEMS 22 190-2021 17516-31 STATIC CONTROL SYSTEMS 36 1213-23/71 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS POR HIGH-ALTITUDE EMP 79 198-204 18214-22 ESD HINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18214-27 ESD HINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-12 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 17515-17 TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 18305-3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 15KY 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-12 SISCEPTIBILITY OF LSI NESD STEP-STRESS TESTS 1810-24 TEST MAYEROMAS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18214-12 SUSCEPTIBILITY OF LSI NESD STEP-STRESS TESTS 17516-26 SURCE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURCE TESTS ON PLUG-IN TRANSFORMERS 17516-27 THE GENERAL THOO OF ELECTROSTATIC CHARGES IN SILICOME ENCAPSULANTS DURING CYCLIC 18305-16 CENTER 18305-17 TESTING OF ELECTROSTATIC CHARGES IN SILICOME ENCAPSULANTS DURING CYCLIC 18305-16 CENTER 18305-17 TESTING OF ELECTROSTATIC CHARGES IN SILICOME ENCAPSULANTS DURING CYCLIC 18405-15 18305-16 MODELIS MAD TESTING OF DIGITAL DEVICES 44 [190-18] 18305-17 DESIGNING TO	SWITCH	
18305-7 A ROOM IONIZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL 18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUNDIDITY 18214-27 ELECTROSTATIC DISCHARGE INHUNITY IN COMPUTER SYSTEMS 18214-28 ELECTRICAL CROUNDING IN LARGE INSTRUMENTATION SYSTEMS 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS 160-148; 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS 79 [198-204] 17515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [198-204] 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17515-24 TEST MAVEPORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 161-166] 16214-12	18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS	82 [91-93]
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN AOZ RELATIVE HUMIDITY 18214-27 ELECTROSTATIC DISCHARGE INHUNITY IN COMPUTER SYSTEMS 18716-21 ASSESSING ELECTRICAL CROUNDING IN LARGE INSTRUMENTATION SYSTEMS 17516-31 STATIC CONTROL SYSTEMS 17516-31 STATIC CONTROL SYSTEMS 17516-31 STATIC CONTROL SYSTEMS 17516-31 STATIC CONTROL SYSTEMS 17515-29 STATISTICAL FAILURE ANALYSIS OF HILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 18214-22 ESD HINIMIZATION TECHNIQUE FOR NOS MANUFACTURING FINAL TEST AREA 18216-22 ESD HINIMIZATION TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18216-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18216-25 ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS 18216-27 ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS 18216-28 SUSCEPTIBILITY OF ISI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305-3 TEST EQUIPMENTA SOURCE OF ESDI! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 18214-22 ESD HINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 22 [157-164] 17516-26 SURGE TESTS 25 HINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 26 [158-19] 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-27 SINGE PERSONE TESTS 26 THE STEMS OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 27 [22-26] 18305-10 TERIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 38 [161-165] 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 39 [176-183] 17516-27 SURGE PERSONE TESTS 30 [161-166] 30 [161-166] 30 [161-166] 30 [161-166] 30 [161-166] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31 [161-167] 31	SYSTEM	
18214-27 ELECTRICAL COUNDING IN LARGE INSTRUMENTION SYSTEMS 22 [190-202] 17516-21 ASSESSING ELECTRICAL COUNDING IN LARGE INSTRUMENTATION SYSTEMS 30 [140-148] 17516-31 STATIC CONTROL SYSTEMS 50 [140-148] 17516-31 STATIC CONTROL SYSTEMS 50 [140-148] 17515-39 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [198-204] 17515-39 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [198-204] 17515-31 EXPENDING AND TECHNIQUE FOR MOS HANUFACTURING FINAL TEST AREA 82 [157-164] 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 79 [64-77] 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 79 [64-77] 17515-24 SUSCEPTIBILITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 83 [118-121] 17515-24 SUSCEPTIBILITY OF LIST MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 84 [20-21] 18305-14 A WRIST STRAP LIFE TEST PROCRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST HETMODS FOR STATIC CONTROL PRODUCTS 18114-12 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 62 [157-164] 17515-75 SUSCEPTIBILITY OF LOS HOS STEP-STRESS TESTS STEED 1106-113 17516-24 TEST WAVEFORNS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 1616-1166		
18214-28 ELECTRICAL CHOUNDING IN LARGE INSTRUMENTATION SYSTEMS 17916-31 SASSESINE RELECTRICAL OPRESTRESS EFFECTS ON ELECTRONIC SYSTEMS 17916-31 STATIC CONTROL SYSTEMS 17916-32 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [198-204] TECHNIQUE 18214-22 ESD HINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18214-22 ESD HINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18216-24 TEST MAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTHING-INDUCED TRANSIENTS 17915-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 18305-3 TEST EQUIPMENTA SOURCE OF ESDI! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 1814-22 ESD HINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD HINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17316-26 SURGE TESTS ON PELGC-INCHINQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTHING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PELGC-INT HARSFORMERS 17516-25 SURGE TESTS ON PELGC-IN THANSFORMERS 17516-26 SURGE TESTS ON PELGC-IN THANSFORMERS 17516-26 SURGE TESTS ON PELGC-IN THANSFORMERS 18305-15 TESTING OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC TESTING 18305-15 TESTING OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 44 [59-103] 18305-18 DESCRIPTIBLITY TOR THE MANUFACTURING FINAL DEVICES 45 [157-164] 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 46 [157-163] 18305-18 DESCRIPTIBLITY TESTING FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 46 [172-188] 47 [182-18] 47 [182-18] 47 [182-18] 47 [182-18] 47 [182-18] 47 [182-18] 47 [182-18] 47 [182-18] 47	· ·	
17516-21 ASSESSIMG ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS 17516-79 STATISCTORDOL SYSTEMS 17515-79 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP 79 [198-204] TECHNIQUE 18214-22 ESD HINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTNING-IMDUCED TRANSIENTS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALTSIS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALTSIS 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 18305-3 TEST EQUIPMENTA SOURCE OF ESDI! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18314-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTNING-INDUCED TRANSIENTS 17516-25 SURGE TESTS ON PILGE-IN THANSFORMERS 17516-26 SURGE TESTS ON PILGE-IN THANSFORMERS 17516-27 TESTING OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-19 TESTING OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-19 TESTING OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-19 TESTING OF ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-10 TRIBOELECTRIC TESTING FOR FED TESTING OP DIGITAL DEVICES 18405-19 DESICHING TO AVOID STATIC - ESD TESTING OP DIGITAL DEVICES 18405-19 DESICHING TO AVOID STATIC - ESD TESTING OP DIGITAL DEVICES 184172-1861 18316-1871-18814-1 ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18416-1851 SADS-24 DEVICE ESD SUSCEPTIBILITY TESTING HOW DESIGN HARDENING 18518-1971-1881 18511-1851 SADS-24 DEVICE ESD SUSCEPTIBILITY TESTING FO		I :
TECHNIQUE 18214-22 ESD HINIMIZATION TECHNIQUE FOR MOS MANUPACTURING FINAL TEST AREA 17516-24 TEST MAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTHINGINDUCED TRANSIENTS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND AMALYSIS 17515-12 TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 18305-3 TEST EQUIPMENTA SOURCE OF ESDI! 18305-14 A URIST STRAP LIFE TEST PROCRAM 1518V 18305-14 A URIST STRAP LIFE TEST PROCRAM 1518V 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-17 SUSCEPTIBILITY OF ICS IN SED SEPS-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTWING-INDUCED TRANSIENTS 17516-25 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-27 TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ASSEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ASSEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ASSEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ASSEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ASSEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ASSEOUS PRESSURE TESTS TESTING 18305-10 REPRESSURE TESTS TESTING OF DIGITAL DEVICES ASSEOUS PRESSURE TESTS TESTING 18305-10 REPRESSURE TESTING FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY ASSESSED TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES AS A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY		80 [140-148]
TECHNIQUE 18214-22 ESD HINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTRING-INDUCED TRANSIENTS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 79 [64-77] TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305-3 TEST EQUIPMENTA SOURCE OF ESD1! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD HINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 22 [157-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD SEP-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTRING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-2 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-2 FINE CENTER OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 84 [97-103] 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNIKO TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 46 [112-123] 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-18 MODELS 18172-18 MODELLE CAND THE STING FOR ADVANCED SCHOTTKY TIL 1816-11 ESD SUSCEPTIBILITY TESTING FOR ADVANCED SCHOTTKY TIL 18216-11 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TIL		
18214-22 ESD HINIMIZATION TECHNIQUE FOR MOS HANUFACTURING FINAL TEST AREA 17515-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17515-11 EFFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR HICROCIRCUITS AND ANALYSIS 79 [64-77] TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305-3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 181127 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD HINIMIZATION TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 17516-26 SURGE TESTS ON FLUG-INS INFEST SESSES TESTS 17516-26 SURGE TESTS ON FLUG-IN TRANSFORMERS 17515-5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ESD TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 184 [175-183] 18512-2 BASIS ON PROSECUED SUSCEPTIBILITY TESTING AND DESIGN HARDENING 184 [175-185] 18512-18 A PROCRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TIL 18511-12	1/515-29 STATISTICAL FAILURE ANALYSIS OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	/9 [198-204]
17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17515-11 EPFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS 79 [64-77] TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 18214-13 TEST THEOPORE OF STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18214-12 TEST UNPERFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 18305-16 LIGHTNING-INDUCED TRANSIENTS 17516-26 SURCE TESTS ON PLUC-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-10 TRIBDELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-15 TESTING OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18405-18305-19 DESIGNING TO AVOID STATIC - ESD TESTING 18305-10 TRIBOELECTRIC TESTING FOR ESD TESTING OF DIGITAL DEVICES 184105-18316-18316-184 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18405-18316-18416-18518-1851	TECHNIQUE	
LIGHTNING-INDUCED TRANSIENTS 17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS 79 [64-77] TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 1875-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD MINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 22 [94-109] 18214-22 ESD MINIHIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 23 [175-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 24 [106-113] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 1.1GHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GEMERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18405-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18405-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18405-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18405-18 A PROGRAMBABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18214- 1 ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18417-1861-1812-14 HORDENING AND TESTING OF DAVANCED SCHOTTKY TIL 18214- 1 ESD SUSCEPTIBILITY TESTING OF DAVANCED SCHOTTKY TIL 18216- 1 ESD SUSCEPTIBLLITY TESTING OF DAVANCED SCHOTTKY TIL 18216- 1 ESD SUSCEPTIBILITY TESTING OF DAVANCED SCHOTTKY TIL	18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA	82 [157-164]
TECHNIQUES FOR FAILURE SITE LOCATION TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 187515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 18305-3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD HININIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 22 [94-109] 18214-22 ESD HININIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 42 [157-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRSS TESTS 41 [106-113] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 41 LICHTNING-INDUCED TRANSFORMERS 42 [161-166] 43 [17515-5] 44 THE GEMERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 45 GASEOUS PRESSURE TESTS 46 [176-183] 17515-5 THE GEMERATION OF ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 46 [176-183] 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON HATERIALS AT KENNEDY SPACE 47 [18305-17 DESIGNING TO AVOID STATIC - ESD TESTING 48 [176-183] 18305-19 CENTER 49 [176-183] 18305-10 ERISTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 48 [176-183] 18305-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 48 [176-183] 18172-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 48 [176-183] 18172-18 HODBELS 48 [112-123] 48 [112-124] 48 [112-125] 48 [112-125] 48 [112-126] 48 [112-126] 48 [112-127] 48 [112-126] 48 [112-127] 48 [112-126] 48 [112-127] 48 [112-126] 48 [112-127] 48 [112-126] 48 [112-127] 48 [112-127] 48 [112-126] 48 [112-127] 48 [112-127] 48 [112-127] 48 [112-127] 48 [112-128] 48 [112-127] 48 [112-128] 48 [112-128] 48 [112-128] 48 [112-128] 48 [112-129] 48 [112-129] 48 [112-129] 48 [112-129] 48 [112-129] 48 [112-129] 48 [112-129] 48 [112-129] 48 [112-129] 48 [· ·	80 [161-166]
TEMPERATURE 18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEFINED SITE 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 79 [168-175] TEST 18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD HINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 26 [137-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 31 [106-113] 17516-24 TEST MAYEPORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC CASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18105-17 DESIGNING TO AVOID STATIC - ESD TESTING AND DESIGN HARDENING 18105-18 A PROCRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY NODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTRY TTL 83 [108-117] 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTRY TTL 84 [10-11]	17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS	s 79 [64-77]
18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE 17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE 79 [168-175] TEST 18305-3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST HETHODS FOR STATIC CONTROL PRODUCTS 18214-12 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 20 [157-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-26 TEST MAYEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515-5 THE GEMERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18105-19 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18172-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY NODELS 18172-18 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18172-18 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18172-18 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18172-18 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 25 TESTING TEMPERATURE AND ADVANCED SCHOTTKY TTL 26 TESTING TO HUMAN BODY 18172-18 MODELING AND TESTING OF ADVANCED SCHOTTKY TTL 27 THE PROPERTURE TO THE TEST TEST TO THE TEST TO THE TEST TEST TO THE TEST TO THE TEST TEST THE TEST TEST TEST THE TEST TEST		
TEST 18305-3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172-7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-12 SED MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF 16161-166] 17515-5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING OF DIGITAL DEVICES 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING OF DIGITAL DEVICES 18305-18 PRESCRIPT OF A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING OF BISIONING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY NODELS 18172-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-18 HESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTKY TIL 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTKY TIL 18214-12 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTKY TIL 18214-1 E	IZHFERMIONE	
18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 2 [157-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 31 [106-113] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTHING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC CASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE A [58-63] 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-18 A PROGRAMHABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172- 8 A PROGRAMHABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172-18 SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]		
18305- 3 TEST EQUIPMENTA SOURCE OF ESD!! 18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 22 [157-164] 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 31 [106-113] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-26 SURCE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURCE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC CENTER 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101c, METHOD 4046.1 84 [97-103] 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 85 [104-111] 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-18 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18105-19 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-18 ONDELIS OF ADVANCED SCHOTTKY TTL 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 1821-12	17515-24 SUSCEPTIBILITY OF LSI MOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE	79 [168-175]
18305-14 A WRIST STRAP LIFE TEST PROGRAM 18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE CENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY NODELS 18172-16 MODELS AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 84 [11-12]	TEST	
18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR HEASURING EOS/ESD THRESHOLDS TO 15KV 18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GEMERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUHAN BODY MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]	18305- 3 TEST EQUIPMENTA SOURCE OF ESD!!	84 [20-21]
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS 18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PIUG-IN TRANSFORMERS 17515- 5 THE GEMERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-19 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-10 TRIBOELECTRIC TESTING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 184 [104-111] 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18112-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18112-18 MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18112-18 SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 18216-112		7
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA 17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 81 [106-113] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE ECENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY HODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]		83 [37-47]
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LICHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101c, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY HODELS 18172-18 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY HODELS 18172-16 MODELING AND TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]	**-	7
17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS 17516-26 SURGE TESTS ON PLUC-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 80 [176-183] 80 [176-183] 81 [181-16] 84 [58-63] 84 [77-103] 85 [108-117] 86 [176-183] 87 [181-117] 87 [181-11] 88 [181-117] 89 [181-117] 80 [181-117]		
17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS 17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC GASEOUS PRESSURE TESTS TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 84 [97-103] 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]	17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF	
TESTING 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE 84 [58-63] CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 84 [97-103] 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 84 [104-111] 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING 0F DIGITAL DEVICES 84 [112-123] 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 84 [179-188] 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 83 [48-55] MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]		80 [176-183]
18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 84 [58-63] 84 [97-103] 84 [104-111] 85 [108-117] 86 [108-117]		C 79 [22-26]
CENTER 18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 84 [97-103] 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 84 [104-111] 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 84 [112-123] 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 84 [179-188] 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY 83 [48-55] MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]	TESTING	
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1 18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 84 [97-103] 85 [104-111] 86 [104-111] 87 [108-117]		84 [58-63]
18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING 18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES 18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]		84 [97-103 î
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING 18172-8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214-1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]	•	: :
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY MODELS 18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 83 [48-55] 83 [48-55] 83 [108-117] 82 [1-12]	18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES	
HODELS 18172-16 HODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA 83 [108-117] 18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]		•
18214- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL 82 [1-12]	MODELS	
		•
		· · · · · · · · · · · · · · · · · · ·

AND AND THE PERSON OF THE PERS

KEYWORD DOCUMENT-SEQUENCE NO. TITLE	YEAR PAGES
TESTING	
17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING 17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION	81 [219-224] 80 [184-188]
THERMAL	
18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA 17517-35 NON-LINEAR KINETICS OF SEMICONDUCTOR JUNCTION THERMAL FAILURE	82 [76-81] 81 [242-245]
THICK	
17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOAD	s 81 [198-201]
THIN	
18214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND ADDRESS OF THE PROPERTY OF THE PROPERT	ND 82 [13-18]
CAPACITORS 17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT	81 [192-197]
TRANSIENT	
18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS	IN 84 [136-143]
MONITORS 18305-22 DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR	84 [157-164]
DEVICES SUBJECTED TO VOLTAGE TRANSIENTS 18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYP	E 84 [165-178]
MICROPROCESSORS 18172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED	83 [168-176]
CIRCUITS 18172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS	83 [177-180]
18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES	82 [82-90]
17517- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL	81 [49-56]
17516- 5 TRANSIENT PROTECTION WITH ZNO VARISTORS: TECHNICAL CONSIDERATIONS 17516- 6 PROTECTION LEVEL COMPARISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TY	80 [26-34] PE) 80 [35-43]
17516- 7 GAS TUBE SURGE ARRESTERS FOR CONTROL OF TRANSIENT VOLTAGES	80 [44-53]
17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF LIGHTNING-INDUCED TRANSIENTS	80 [161-166]
17516-33 MEASUREMENT OF PAST TRANSIENTS AND APPLICATION TO HUMAN ESD	80 [225-230]
17515-28 ELECTROSTATIC DISCHARGE PROTECTION USING SILICON TRANSIENT SUPPRESSORS	79 [193-197]
TRANSISTOR	
18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION TRANSIENT-INDUCED FAILURES	82 [82-90]
18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS	82 [91-93]
17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTOR. 17516-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS	S 81 [145-150] 80 [59-66]
17516-10 FAILURE INRESHOLD DISTRIBUTIONS IN BIFOLAR TRANSISTORS 17516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIFOLAR TRANSISTORS	80 [112-116]
17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS	79 [116-121]
17515-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS	79 [140-146]
17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE	79 [176-182]
17515-27 THE PHANTOM EMITTER-AN ESD-RESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS APPLICATIONS TO LINEAR INTEGRATED CIRCUITS	79 [188-192]
TRIBOELECTRIC	
18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS	84 [64-77]
PROPENSITY ON PACKING MATERIALS 17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS	80 [17-22]
VLSI	
18305-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW	84 [202-209]

KEYWORD DOCUMENT-SEQUENCE NO.	TITLE	YEAR	PAGES
VLSI			
17517-13 THE EFFECTS OF VLSI S	CALING ON EOS/ESD FAILURE THRESHOLD	81 [85	-89]
WRIST			
18305-14 A WRIST STRAP LIPE TE: 17516-32 AN EVALUATION OF WRIST		84 [94 80 [21	
X-BAND			
17515-14 ELECTROSTATIC FAILURE	OF X-BAND SILICON SCHOTTKY BARRIER DIODES	79 [97	-103]

Section 6:

CHRONOLOGICAL LIST OF PAPERS

CHRONOLOGICAL LIST OF PAPERS 1984

```
DOCUMENT-SEQUENCE NO.
                                   TITLE
                                                                                                    PAGES
18305-27 A CMOS VLSI ESD INPUT PROTECTION DEVICE, DIFIDW
                                                                                                  [202-209]
AUTHOR(S) : RICHARDSON, L.
                                      SIMCOE, R.
                                                                CHI,K.
COMPANY
          : DIGITAL EQUIPMENT CORPORATION (DEC)
INDEX TERM
                                             CATEGORIES
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
INPUT PROTECTION
                                             [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
18305-26 ESD SENSITIVITY AND LATENCY EFFECTS OF SOME HCMOS INTEGRATED CIRCUITS
                                                                                                  [196-201]
AUTHOR(S) : CROCKETT, R.G.M.
                                      SMITH, J.G.
                                                                HUGHES, J.F.
COMPANY
          : UNIVERSITY OF SOUTHAMPTON
INDEX TERM
                                             CATEGORIES
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                             [ ESD, DEVICE, TESTING METHODS ]
MOSFET C
                                               FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
MICROCIRCUIT
                                               SEMICONDUCTOR DEVICE ]
                                             [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
STEP STRESS
18305-25 A FAILURE ANALYSIS METHODOLOGY FOR REVEALING ESD DAMAGE TO INTEGRATED CIRCUITS
                                                                                                  [189-195]
                                      WOODHOUSE, J.
AUTHOR(S) : TAYLOR, R.G.
                                                                FEASEY, P.R.
COMPANY
          : BRITISH TELECOM
INDEX TERM
                                             CATEGORIES
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
ELECTRO-THERMOMIGRATION
                                             [ ESD, DEVICE, FAILURE MODES ]
HUMAN BODY ESD MODEL
                                             [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
                                             [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
MOSFET C
MICROCIRCUIT
                                             [ SEMICONDUCTOR DEVICE ]
18305-24 DEVICE ESD SUSCEPTIBILITY TESTING AND DESIGN HARDENING
                                                                                                  [179-188]
AUTHOR(S) : DECHIARO, L.F.
COMPANY : BELL LABORATORIES
INDEX TERM
                                             CATEGORIES
OXIDATION
                                             [ CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                               SEMICONDUCTOR TECH. ]
EOS/ESD
ESD SUSCEPTIBILITY TESTING
                                             [ ESD, DEVICE, TESTING METHODS ]
FAILURE MODES
                                             [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE ANALYSIS TECHNIQUES
                                             FAILURE ANALYSIS, SEMICONDUCTOR TECH. ] SEMICONDUCTOR DEVICE ]
MICROCIRCUIT
18305-23 DEGRADATION BY ESD TRANSIENTS OF THE SUBSTRATE BIAS VOLTAGE OF NMOS 8085-TYPE
                                                                                                  [165-178]
          MICROPROCESSORS
AUTHOR(S) : SHAW, R.N.
                                      ENOCH, R.D.
                                                               TAY! OR, R.G.
COMPANY
          : BRITISH TELECOM
INDEX TERM
                                             CATEGORIES
CIRCUIT BOARD
                                             [ NON-ELECTRONICS ]
EOS/ESD
                                               SEMICONDUCTOR TECH. ]
                                             [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, FAILURE MODES ]
HUMAN BODY ESD MODEL
METALLIZATION HELT
                                             [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
                                             [ ESD, DEVICE, TESTING METHODS ]
[ SEMICONDUCTOR DEVICE ]
ESD SUSCEPTIBILITY TESTING
HICROCIRCUIT
```

SECTION VI, PAGE 1

101

CHRONOLOGICAL LIST OF PAPERS 1984

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                 PAGES
18305-22 DETERMINATION OF THRESHOLD ENERGIES AND DAMAGE MECHANISMS IN SEMICONDUCTOR
                                                                                               [157-164]
          DEVICES SUBJECTED TO VOLTAGE TRANSIENTS
AUTHOR(S) : ROBERTS, B.C.
COMPANY
         : ERA TECHNOLOGY, LTD.
INDEX TERM
                                           CATEGORIES
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
MOSFET N
                                           [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
18305-21 AN EVALUATION OF EOS FAILURE MODELS
                                                                                               [144-156]
AUTHOR(S) : PIERCE, D.G.
                                                              SHILEY, W.L.
                                    PERILLAT, J.
         : BOOZ, ALLEN & HAMILTON
INDEX TERM
                                           CATEGORIES
BIPOLAR
                                           [ COMPONENT TYPE ]
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
EMP - ELECTROMAGNETIC PULSE
                                           [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
                                             ESD, EOS/ESD PHYSICS ]
MOSFET C
                                            [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
TRANSISTOR
                                           [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
MICROCIRCUIT
                                            | SEMICONDUCTOR DEVICE |
18305-20 PROTECTION OF COMPONENTS AGAINST ELECTRICAL OVERSTRESS (EOS) AND TRANSIENTS IN
                                                                                               [136-143]
          MONITORS
AUTHOR(S) : FOERSTER,G.
COMPANY
          : RCA
INDEX TERM
                                           CATEGORIES
                                           [ SEMICONDUCTOR TECH. ]
ELECTROSTATIC SIMULATOR
                                           [ ESD, DEVICE, TESTING METHODS ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
MODELS/THEORY/EQUATIONS
                                           [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
                                                                                               [131-135]
18305-19 SECONDARY DISCHARGE: A NEW JEOPARDY AND A NEW TOOL
AUTHOR(S) : LAFFERTY, D.
COMPANY
         : INTEL
INDEX TERM
                                           CATEGORIES
CIRCUIT BOARD
                                             NON-ELECTRONICS ]
                                             SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ ESD, DEVICE, TESTING METHODS ]
CHARGE DEVICE MODEL
                                           [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
DECAY TIME
PROTECTIVE WORK BENCH SURFACE
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
RELATIVE HUMIDITY
                                           [ ESD, EOS/ESD PHYSICS ]
TRIOBOELECTRIC CHARGING
NONELECTRONICS
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
18305-18 EMI CHARACTERISTICS OF ESD IN A SMALL AIR GAP -- ARP GOVERNS THE EMI--
                                                                                               [124-130]
AUTHOR(S) : HONDA,M.
                                     KAWAMURA,T.
          : NIPPON UNIVAC KAISHA, LTD.
COMPANY
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
EMI - ELECTROMAGNETIC INTERFACE
                                           [ ESD. EOS/ESD PHYSICS ]
                                           [ SEMICONDUCTOR TECH. ]
PACKAGE
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
TESTING TOOLS & TECHNIQUES
                                           [ SEMICONDUCTOR TECH. ]
```

CHRONOLOGICAL LIST OF PAPERS 1984

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                   PAGES
18305-17 DESIGNING TO AVOID STATIC - ESD TESTING OF DIGITAL DEVICES
                                                                                                 [112-123]
AUTHOR(S) : DASH,G.R.
         : DASH, STRAUS, & GOODHUE, INC.
COMPANY
INDEX TERM
                                            CATEGORIES
ELECTRICAL FAILURE PHENOMENA
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
                                            [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
ELECTROSTATIC SIMULATOR
HUMAN BODY ESD MODEL
18305-16 CRITICAL CONSIDERATIONS FOR ESD TESTING
                                                                                                 [104-111]
AUTHOR(S) : HYATT, H.M.
COMPANY
         : EXPERIMENTAL PHYSICS CORPORATION
INDEX_TERM
                                            CATEGORIES
DESIGN CONSIDERATIONS
                                            [ SEMICONDUCTOR TECH. ]
                                            [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
TOLERANCES
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
                                            [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
ELECTROSTATIC SIMULATOR
HUMAN BODY ESD MODEL
EMI - ELECTROMAGNETIC INTERFACE
                                            [ ESD, EOS/ESD PHYSICS ]
RELATIVE HUMIDITY
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
18305-15 TESTING OF ELECTROSTATIC MATERIALS FED. STD. 101C, METHOD 4046.1
                                                                                                 [97-103
AUTHOR(S) : BAUMGARTNER,G.
                                    HAVERMANN.R.
COMPANY
         : LOCKHEED
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                              SEMICONDUCTOR TECH. ]
CONDUCTIVE ESD PROTECTIVE MATERIAL
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
DECAY TIME
ESD PROTECTIVE MATERIAL
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD STD AND HANDBOOK
                                            [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
SURFACE RESISTIVITY
TRIOBOELECTRIC CHARGING
                                            [ ESD, EOS/ESD PHYSICS ]
TESTING TOOLS & TECHNIQUES
                                            [ SEMICONDUCTOR TECH. ]
18305-14 A WRIST STRAP LIFE TEST PROGRAM
                                                                                                 [94-96
\underline{AUTHOR(S)}: HOHL, A.P.
COMPANY : RCA
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
GROUNDING STRAPS
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
WRIST STRAP
TESTING TOOLS & TECHNIQUES
                                            [ SEMICONDUCTOR TECH. ]
18305-13 A MATERIAL EVALUATION PROGRAM FOR DECORATIVE STATIC CONTROL TABLE TOP LAMINATES [85-93
AUTHOR(S) : SAFEER, N.I.
                                      MILEHAM, J.R.
         : SPAULDING FIBRE COMPANY, INC.
COMPANY
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
DECAY TIME
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
GROUNDING METHODS
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
PROTECTIVE WORK BENCH SURFACE
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
SURFACE RESISTIVITY
LIFE
TESTING TOOLS & TECHNIQUES
                                            [ SEMICONDUCTOR TECH. ]
```

DOCUMENT-SEQUENCE NO. TITLE PAGES 18305-12 AN EXPERIMENTAL STUDY OF THE ESD SCREENING EFFECTIVENESS OF ANTI-STATIC BAGS [78-84 AUTHOR(S) : HOLMES,G.C. JOHNSON, R.L. HUFF,P.J. COMPANY : BRITISH TELECOM CATEGORIES INDEX TERM EOS/ESD [SEMICONDUCTOR TECH.] BULK CONDUCTIVE PLASTIC [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] PROTECTIVE BAGS [ESD, EOS/ESD PHYSICS] TRIOBOELECTRIC CHARGING 18305-11 TRIBOELECTRIC CHARGE: ITS ESD ABILITY AND A MEASUREMENT METHOD FOR ITS [64-77 PROPENSITY ON PACKING MATERIALS AUTHOR(S) : HUNTSMAN, J.R. COMPANY : 3M CATEGORIES INDEX TERM EOS/ESD [SEMICONDUCTOR TECH.] [ESD, MATERIALS AND EQUIPMENT, TESTING] DECAY TIME ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]
ESD, MATERIALS AND EQUIPMENT, TESTING] PROTECTIVE BAGS SURFACE RESISTIVITY TRIOBOELECTRIC CHARGING [ESD, EOS/ESD PHYSICS] LOGISTICS [SYSTEMS] 18305-10 TRIBOELECTRIC TESTING FOR ELECTROSTATIC CHARGES ON MATERIALS AT KENNEDY SPACE [58-63 CENTER AUTHOR(S) : GOMPF,R.H. COMPANY : CONSULTANT INDEX TERM CATEGORIES [SEMICONDUCTOR TECH.] EOS/ESD ESD, MATERIALS AND EQUIPMENT, TESTING] DECAY TIME ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES] RELATIVE HUMIDITY SURFACE RESISTIVITY ESD, MATERIALS AND EQUIPMENT, TESTING] TRIOBOELECTRIC CHARGING ESD, EOS/ESD PHYSICS] SEMICONDUCTOR TECH.] PACKAGE [SEMICONDUCTOR DEVICE] MICROCIRCUIT 150-57 18305- 9 ESTIMATION OF DISCHARGE ENERGY RELEASED FROM CHARGED INSULATOR AUTHOR(S) : TABATA,Y. COMPANY : MINISTORY OF LABOUR INDEX TERM CATEGORIES SEMICONDUCTOR TECH. 1 EOS/ESD ESD, EOS/ESD PHYSICS) INDUCTIVE CHARGING TESTING TOOLS & TECHNIQUES [SEMICONDUCTOR TECH.] 145-49 18305- 8 STATIC-ELECTRIC CHARACTERIZATION OF SEMI-INSULATING MATERIALS AUTHOR(S) : JONASSEN, N. : TECHNICAL UNIVERSITY OF DENMARK INDEX TERM CATEGORIES EOS/ESD [SEMICONDUCTOR TECH.] [ESD, MATERIALS AND EQUIPMENT, TESTING] DECAY TIME [ESD, MATERIALS AND EQUIPMENT, TESTING] ESD PROTECTIVE MATERIAL SURFACE RESISTIVITY [ESD, MATERIALS AND EQUIPMENT, TESTING]

```
CUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                   PAGES
 8305- 7 A ROOM IO IZATION SYSTEM FOR ELECTROSTATIC CHARGE AND DUST CONTROL
                                                                                                 [40-44
 UTHOR(S) : UNGER, B.A.
                                      CHEMELLI, R.G.
                                                               BOSSARD, P.R.
         : BELL COMMUNICATIONS RESEARCH, INC.
 OMPANY
 NDEX TERM
                                            CATEGORIES
OS/RSD
                                            [ SEMICONDUCTOR TECH. ]
IR IONIZER
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ECAY TIME
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
IONELECTRONICS
TESTING TOOLS & TECHNIQUES
                                            [ SEMICONDUCTOR TECH. ]
18305- 6 EFFECTS OF AIR IONS AND ELECTRIC FIELDS ON HEALTH AND PRODUCTIVITY
                                                                                                 [34-39
                                                                                                           1
AUTHOR(S) : CARLTON, R.M.
         : AMERICAN INSTITUTE OF MEDICAL CLIMATOLOGY (AIMC)
COMPANY
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
AIR IONIZER
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
STATIC CONTROL
FABRICATION PROCESSES & TECHNIQUES
                                              SEMICONDUCTOR TECH. ]
                                              SEMICONDUCTOR DEVICE ]
MICROCIRCUIT
18305- 5 ELECTROSTATIC MEASUREMENT FOR PROCESS CONTROL
                                                                                                 [25-33
                                                                                                           1
AUTHOR(S) : BAUMGARTNER,G.
COMPANY
         : LOCKHEED
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                              SEMICONDUCTOR TECH. ]
ELECTROSTATIC CHARGE DETECTOR
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
HUMAN BODY ESD MODEL
                                              ESD, DEVICE, TESTING METHODS ]
                                            [ ESD, EOS/ESD PHYSICS ]
[ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
TRIOBOELECTRIC CHARGING
PROCESS CONTROL/SPECIFICATION
                                            [ FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECH. ]
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
[ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST EQUIPMENT
TEST TECHNIQUES
                                                                                                 [22-23
18305- 4 ESD DAMAGE, DOES IT HAPPEN ON PCBS?
AUTHOR(S) : THOMPSON, W.H.
COMPANY
          : U.S. AIR FORCE
INDEX TERM
                                            CATEGORIES
                                             [ LEVEL OF ASSEMBLY ]
BOARD
CIRCUIT BOARD
                                              NON-ELECTRONICS ]
EOS/ESD
                                              SEMICONDUCTOR TECH. ]
ASSEMBLY & EQUIPMENT ESD CLASSIFICATION
                                              ESD, DEVICE, TESTING METHODS ]
                                              ESD. EOS/ESD PHYSICS ]
EMI - ELECTROMAGNETIC INTERFACE
                                              ESD, EOS/ESD PHYSICS
EMP - ELECTROMAGNETIC PULSE
                                            [ SEMICONDUCTOR DEVICE ]
MICROCIRCUIT
18305- 3 TEST EQUIPMENT -- A SOURCE OF ESD!!
                                                                                                 [20-21
AUTHOR(S) : SAUERS, J.P.
COMPANY
         : MAGNAVOX
                                            CATEGORIES
INDEX TERM
EOS/ESD
                                              SEMICONDUCTOR TECH. ]
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE |
ELECTROSTATIC CHARGE DETECTOR
ESD STD AND HANDBOOK
                                              ESD, STANDARDS, HANDBOOKS, MANU/LS ]
MICROCIRCUIT
                                              SEMICONDUCTOR DEVICE |
```

SECTION VI. PAGE 5

TEST EQUIPMENT

[TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH.]

OCUMENT-SEQUENCE NO. TITLE PAGES (7-19 8305- 2 HAZARDS OF STATIC CHARGES AND FIELDS AT THE WORK STATION UTHOR(S) : KOLYER, J.M. ANDERSON, W.E. WATSON, D.E. OMPANY : ROCKWELL NDEX TERM CATEGORIES DS/ESD [SEMICONDUCTOR TECH.] [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]
[ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] IR IONIZER LECTROSTATIC CHARGE DETECTOR [ESD, MATERIALS AND EQUIPMENT, TESTING]
[ESD, MATERIALS AND EQUIPMENT, PROTECTIVE]
[ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] SD PROTECTIVE MATERIAL ROTECTED ESD AREA ROTECTIVE BAGS ESD, MATERIALS AND EQUIPMENT, TESTING]
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] JRFACE RESISTIVITY RIST STRAP ABRICATION PROCESSES & TECHNIQUES [SEMICONDUCTOR TECH.] ABRICATION EQUIPMENT [FABRICATION PROCESSES & TECHNIQES, SEMICONDUCTOR TECH.] [FIELD EFFECT, (FET), SEMICONDUCTOR TECH.])SFET JALITY ASSURANCE [SYSTEMS] 1305- 1 A REALISTIC AND SYSTEMATIC ESD CONTROL PLAN [1-6] THOR(S) : DANGELMAYER, G.T. MPANY : ATT CATEGORIES DEX TERM [SYSTEMS] ST SEMICONDUCTOR TECH.] S/ESD ARGE DEVICE MODEL ESD, DEVICE, TESTING METHODS] [ESD, DEVICE, TESTING METHODS] MAN BODY ESD MODEL [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES] [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES]

[SYSTEMS]

D CONTROL PROGRAM ATIC CONTROL ALITY ASSURANCE

DOCUMENT-SEQUENCE NO. TITLE **PAGES** 18172-28 A STUDY OF ESD LATENT DEFECTS IN SEMICONDUCTORS [198-204] AUTHOR(S) : BEALL, J. BOWERS, J. ROSSI,M. COMPANY : MARTIN MARIETTA INDEX TERM EOS/ESD CATEGORIES [SEMICONDUCTOR TECH.] DIELECTRIC BREAKDOWN [ESD, DEVICE, FAILURE MODES] LATENT ESD FAILURE [ESD, DEVICE, FAILURE MODES] **OVERSTRESS** [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH.] GUIDE/PROCEDURE [REFERENCE DOCUMENT] SEMICONDUCTOR DEVICE [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH.] LIFE OPERATIONAL TEST [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH.] TEST SPECIFICATION [TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH.] 18172-27 ESD SENSITIVITY OF NMOS LSI CIRCUITS AND THEIR FAILURE CHARACTERISTICS [185-197] AUTHOR(S) : ENOCH, R.D. TAYLOR, R.G. SHAW, R.N. : BRITISH TELECOM COMPANY INDEX TERM CATEGORIES EOS/ESD [SEMICONDUCTOR TECH.] [ESD, DEVICE, TESTING METHODS] [ESD, DEVICE, TESTING METHODS] HUMAN BODY ESD MODEL ESD SUSCEPTIBILITY TESTING FAILURE CHARACTERIZATION [SEMICONDUCTOR TECH.] FAILURE ANALYSIS RESULTS [FAILURE ANALYSIS, SEMICONDUCTOR TECH.] REFERENCE DOCUMENT DIGITAL LSI [MICROCIRCUIT, SEMICONDUCTOR DEVICE] TESTING TOOLS & TECHNIQUES [SEMICONDUCTOR TECH.] 18172-26 A SUMMARY OF MOST EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION CIRCUITS FOR MOS [181-184] MEMORIES AND THEIR OBSERVED FAILURE MODES ROUNTREE, R.N. AUTHOR(S) : DUVVURY, C. WHITE, L.S. COMPANY : TEXAS INSTRUMENTS (TI) INDEX TERM CATEGORIES CIRCUIT PROTECTION DEVICES [NON-ELECTRONICS] DESIGN CONSIDERATIONS [SEMICONDUCTOR TECH.] EOS/ESD [SEMICONDUCTOR TECH.] DIELECTRIC BREAKDOWN [ESD, DEVICE, FAILURE MODES] [FAILURE ANALYSIS, SEMICONDUCTOR TECH.] FAILURE MODES FAILURE ANALYSIS RESULTS FAILURE ANALYSIS, SEMICONDUCTOR TECH.] SUIDE/PROCEDURE REFERENCE DOCUMENT] MICROCIRCUIT [SEMICONDUCTOR DEVICE] 18172-25 USING SCR'S AS TRANSIENT PROTECTION STRUCTURES IN INTEGRATED CIRCUITS [177-180] AUTHOR(S) : AVERY, L.R. COMPANY : RCA CATEGORIES INDEX TERM DESIGN CONSIDERATIONS [SEMICONDUCTOR TECH.] [SEMICONDUCTOR TECH.] [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION] **FRANSIENT SUPPRESSORS** GUIDE/PROCEDURE [REFERENCE DOCUMENT] SEMICONDUCTOR DEVICE [SEMICONDUCTOR DEVICE] **1ICROCIRCUIT**

SECTION VI, PAGE 7

15 1

UMENT-SEQUENCE NO. TITLE PACES

14- 1 ESD SUSCEPTIBILITY TESTING OF ADVANCED SCHOTTKY TTL [1-12

HOR(S) : DENSON, W.K. DEY,K.A.

: IIT RESEARCH INSTITUTE

EX TERM

CATEGORIES [BIPOLAR, COMPONENT TYPE] [SEMICONDUCTOR TECH.]
[ESD, DEVICE, TESTING METHODS] /ESD RGE DEVICE MODEL STD AND HANDBOOK [ESD, STANDARDS, HANDBOOKS, MANUALS] SUSCEPTIBILITY TESTING [ESD, DEVICE, TESTING METHODS] ROCIRCUIT [SEMICONDUCTOR DEVICE]

T TECHNIQUES FOR REL. ASSESSMENT [SEMICONDUCTOR TECH.]

[TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH.]
[SEMICONDUCTOR TECH.] P STRESS

TING TOOLS & TECHNIQUES

```
CUMENT-SEQUENCE NO.
                                 TITLE
                                                                                                    PAGES
214- 5 LATENT ESD FAILURES
                                                                                                  141-48
                                                                                                            ]
THOR(S) : MCATEER, O.J.
                                    TWIST, R.E.
                                                               WALKER, R.C.
1PANY
       : WESTINGHOUSE
DEX TERM
                                           CATEGORIES
IPONENT
                                           [ LEVEL OF ASSEMBLY ]
LIABILITY
                                           [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
CONDARY BREAKDOWN
                                           [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
S/ESD
                                           [ SEMICONDUCTOR TECH. ]
TENT ESD FAILURE
                                           [ ESD, DEVICE, FAILURE MODES ]
D STD AND HANDBOOK
                                           [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
D SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
ERSTRESS
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
ILURE MODES
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FERENCE DOCUMENT
                                           [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
FF
ST EQUIPMENT
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
214- 4 ELECTRICAL OVERSTRESS THRESHOLD TESTING
                                                                                                  [34-40
                                                                                                            ]
THOR(S) : HAYS,R.A.
MPANY
        : U.S. AIR FORCE
DEX TERM
                                           CATEGORIES
MPUTER AIDED DESIGN, (CAD)
                                           DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
                                           [ SEMICONDUCTOR TECH. ]
S/ESD
                                           [ ESD, EOS/ESD PHYSICS ]
S - ELECTRICAL OVERSTRESS
                                           [ ESD, DEVICE, TESTING METHODS ]
D SUSCEPTIBILITY TESTING
ERSTRESS
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
STING TOOLS & TECHNIQUES
                                           [ SEMICONDUCTOR TECH. ]
214- 3 LIMITATIONS IN MODELING ELECTRICAL OVERSTRESS FAILURE IN SEMICONDUCTOR DEVICES
                                                                                                  [19-33
THOR(S) : HORGAN, E.L.
                                     ADAMS, O.E.
                                                               ROWAN, W.H.
MPANY
        : TRW
DEX TERM
                                           CATEGORIES
S/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, FAILURF MODES ]
D SUSCEPTIBILITY TESTING
ERMAL SECONDARY BREAKDOWN
NSCH BELL MODEL
                                           [ ESD, DEVICE, TESTING METHODS ]
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
[ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
ERSTRESS
DELS/THEORY/EQUATIONS
MICONDUCTOR DEVICE
ST TECHNIQUES FOR REL. ASSESSMENT
                                           [ SEMICONDUCTOR TECH. ]
214- 2 ELECTROSTATIC DISCHARGE (ESD) DAMAGE SUSCPETIBILITY OF THIN FILM RESISTORS AND
                                                                                                  113-18
        CAPACITORS
THOR(S) : CHASE, E.W.
MPANY
        : BELL LABORATORIES
DEX TERM
                                           CATEGORIES
S/ESD
                                             SEMICONDUCTOR TECH. ]
ARGE DEVICE MODEL
                                             ESD, DEVICE, TESTING METHODS ]
MAN BODY ESD MODEL
                                             ESD, DEVICE, TESTING METHODS ]
                                           [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
D SUSCEPTIBILITY TESTING
NSCH BELL MODEL
                                             FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ] PASSIVE DEVICE, COMPONENT TYPE ]
ERSTRESS
PACITOR
SISTOR
                                           [ PASSIVE DEVICE, COMPONENT TYPE ]
```

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                               PAGES
18214- 9 THE FORWARD-BIAS CHARACTERISTIC AS A PREDICTOR AND SCREEN OF REVERSE-BIAS SECOND [71-75
          BREAKDOWN
AUTHOR(S) : WARD, A.L.
COMPANY
         : HARRY DIAMOND LAB (HDL)
INDEX TERM
                                          CATEGORIES
REVERSE BREAKDOWN
                                          [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
SECONDARY BREAKDOWN
                                          [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                          [ ESD, DEVICE, TESTING METHODS ]
MATHEMATICAL ANALYSIS
CHARACTERIZATION
                                          [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
18214- 8 AN IMPROVED EOS CONDUCTION MODEL OF SEMICONDUCT DEVICES
                                                                                             [62-70
AUTHOR(S) : VOLMERANGE, H.
         : TRW
COMPANY
INDEX TERM
                                          CATEGORIES
EOS/ESD
                                          [ SEMICONDUCTOR TECH. ]
EMP - ELECTROMAGNETIC PULSE
                                          [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
                                          [ ESD, EOS/ESD PHYSICS ]
WUNSCH BELL MODEL
                                          [ ESD, DEVICE, TESTING METHODS ]
MATHEMATICAL ANALYSIS
REFERENCE DOCUMENT
MODELS/THEORY/EQUATIONS
                                          [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
SEMICONDUCTOR DEVICE
MICROCIRCUIT
                                          [ SEMICONDUCTOR DEVICE ]
18214- 7 MODELING METALLIZATION BURNOUT OF INTEGRATED CIRCUITS
                                                                                             [56-6]
                                                                                                       1
AUTHOR(S) : PIERCE, D.G.
COMPANY
         : BOOZ, ALLEN & HAMILTON
INDEX TERM
                                          CATEGORIES
EOS/ESD
                                           SEMICONDUCTOR TECH. ]
METALLIZATION MELT
                                          [ ESD, DEVICE, FAILURE MODES ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
MATHEMATICAL ANALYSIS
METALLURGICAL FAILURE PHENOMENA
                                          [ SEMICONDUCTOR TECH. ]
                                           [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
MODELS/THEORY/EQUATIONS
MICROCIRCUIT
                                          [ SEMICONDUCTOR DEVICE ]
18214- 6 A SUVREY OF EOS/ESD DATA SOURCES
                                                                                             [49-55
AUTHOR(S) : DURGIN, D.L.
                                    PELZL,R.M.
                                                            THOMPSON, W.H.
         : BOOZ, ALLEN & HAMILTON
COMPANY
INDEX TERM
                                          CATEGORIES
EOS/ESD
                                           SEMICONDUCTOR TECH. ]
                                           [ ESD, EOS/ESD PHYSICS ]
EMI - ELECTROMAGNETIC INTERFACE
EMP - ELECTROMAGNETIC PULSE
                                          [ ESD, EOS/ESD PHYSICS ]
ESD STD AND HANDBOOK
                                          [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
FAILURE CHARACTERIZATION
                                          [ SEMICONDUCTOR TECH. ]
DATA COLLECTION SYS./TECHNIQUES
                                          [ REL. MODELS/DATA/ANALYSIS ]
TESTING TOOLS & TECHNIQUES
                                          [ SEMICONDUCTOR TECH. ]
```

SECTION VI, PAGE 19

119

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                  PAGES
18214-13 TEST METHODS FOR STATIC CONTROL PRODUCTS
                                                                                                [94-109
AUTHOR(S) : HUNTSMAN, J.R.
                                     YENNI .D.M.
COMPANY
          : 3M
INDEX TERM
                                            CATEGORIES
TRADE-OFFS
                                            [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
DESIGN FOR TESTABILITY
                                              DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                              SEMICONDUCTOR TECH. ]
EOS/ESD
AIR IONIZER
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
CONDUCTIVE FOAM
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ] [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
DIP TUBE
DECAY TIME
ESD PROTECTIVE MATERIAL
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
RELATIVE HUMIDITY
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD STD AND HANDBOOK
                                            [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
SURFACE RESISTIVITY
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
TRIOBOELECTRIC CHARGING
                                              ESD, EOS/ESD PHYSICS ]
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
WRIST STRAP
QUALITY ASSURANCE
                                              SYSTEMS ]
RELIABILITY
                                              SYSTEMS ]
                                            [ SEMICONDUCTOR TECH. ]
TEST TECHNIQUES FOR REL. ASSESSMENT
18214-12 SECOND BREAKDOWN IN SWITCHING TRANSISTORS
                                                                                                [91-93
\underline{AUTHOR(S)} : SKELTON,D.J.
                                     PORTNOY.W.M.
          : TEXAS TECH UNIVERSITY
COMPANY
INDEX TERM
                                            CATEGORIES
SECONDARY BREAKDOWN
                                            [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
EMP - ELECTROMAGNETIC PULSE
                                            [ ESD, EOS/ESD PHYSICS ]
                                            [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
TRANSISTOR
                                            [ TEST STRESS ]
THERMAL
18214-11 A PROBABILISTIC ESTIMATOR FOR BOUNDING TRANSISTOR EMITTER-BASE JUNCTION
                                                                                                [82-90
          TRANSIENT-INDUCED FAILURES
\underline{\text{AUTHOR}(S)}: PIERCE, D.G.
                                      MASON, R.M.
         : BOOZ, ALLEN & HAMILTON
COMPANY
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                            I SEMICONDUCTOR TECH. 1
EOS - ELECTRICAL OVERSTRESS
                                            [ ESD, EOS/ESD PHYSICS ]
                                              ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
                                            [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                              SEMICONDUCTOR TECH. ]
FABRICATION PROCESSES & TECHNIQUES
TRANSISTOR
                                            [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
18214-10 MODELING OF CURRENT AND THERMAL MODE SECOND BREAKDOWN PHENOMENA
                                                                                                76-81
                                                                                                           1
AUTHOR(S) : YEE, J.H.
                                     ORVIS, W.J.
                                                              MARTIN, L.C.
          : LAWRENCE LIVERMORE NATIONAL LABORATORY
COMPANY
INDEX TERM
                                            CATEGORIES
SECONDARY BREAKDOWN
                                            [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
ELECTRICAL
                                              TEST STRESS }
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                            [ ESD, DEVICE, TESTING METHODS ]
THERMAL SECONDARY BREAKDOWN
                                            [ ESD, DEVICE, FAILURE MODES ]
MATHEMATICAL ANALYSIS
MODELS/THEORY/EQUATIONS
                                            [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
THERMAL
                                            [ TEST STRESS ]
```

```
DOCUMENT-SEQUENCE NO.
                                   TITLE
                                                                                                     PAGES
18214-17 CHARACTERIZATION OF ESD SAFE REQUIREMENTS FOR FLOOR SURFACES
                                                                                                   [124-130]
AUTHOR(S) : BERBECO,G.R.
COMPANY
          : CHARLESWATERS PRODUCT, INC.
INDEX TERM
                                             CATEGORIES
DESIGN CONSIDERATIONS
                                             [ SEMICONDUCTOR TECH. ]
DESIGN FOR TESTABILITY
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                               SEMICONDUCTOR TECH. ]
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
DECAY TIME
FLOOR SURFACE
TRIOBOELECTRIC CHARGING
                                             [ ESD, EOS/ESD PHYSICS ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                             [ SEMICONDUCTOR TECH. ]
CHARACTERIZATION
                                               TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
TESTING TOOLS & TECHNIQUES
                                             [ SEMICONDUCTOR TECH. ]
18214-16 DRASTIC LOSSES OF CONDUCTIVITY IN ANTISTATIC PLASTICS
                                                                                                   [120-123]
AUTHOR(S) : HEAD,G.O.
COMPANY
          : LEAR SIEGLER, INC.
INDEX TERM
                                             CATEGORIES
                                             DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
MATERIALS
DESIGN FOR TESTABILITY
                                               DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                               SEMICONDUCTOR TECH. 1
CONDUCTIVE ESD PROTECTIVE MATERIAL
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
[ ESD, MATERIALS AND EQUIPMENT, TESTING ]
DECAY TIME
PROTECTIVE BAGS
SURFACE RESISTIVITY
TRIOBOELECTRIC CHARGING
                                             [ ESD, EOS/ESD PHYSICS ]
EVALUATION TEST
                                               TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
MISC. FAILURE PHENOMENA
                                             [ SEMICONDUCTOR TECH. ]
18214-15 ELECTROACTIVE POLYMERS AS ALTERNATE ESD PROTECTIVE MATERIALS
                                                                                                   [115-119]
AUTHOR(S) : BERNETT, M.K.
                                     RAVNER,H.
                                                                WEBER.D.C.
         : NAVAL RESEARCH LABORATORY (NRL)
INDEX TERM
MATERIALS
                                              DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
DESIGN FOR TESTABILITY
TOLERANCES
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                               SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD PROTECTIVE MATERIAL
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ] [ SEMICONDUCTOR TECH. ]
SURFACE RESISTIVITY
PACKAGE
                                                                                                   [110-114 ]
18214-14 METALLOPLASTICS
AUTHOR(S) : DAVENPORT, D.E.
COMPANY : TRACOR MBA
INDEX TERM
                                             CATEGORIES
PROCESS DESIGN
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
DESIGN FOR TESTABILITY
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
                                             [ ESD, EOS/ESD PHYSICS ]
ELECTROSTATIC SHIELD
EMI - ELECTROMAGNETIC INTERFACE
                                             [ ESD, EOS/ESD PHYSICS ]
FABRICATION PROCESSES & TECHNIQUES
                                             [ SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                                                                                 PAGES
                                  TITLE
18214-20 ESD IN I.C. ASSEMBLY (A BASE LINE SOLUTION)
                                                                                               [142-144]
AUTHOR(S) : EUKER,R.
COMPANY
         : HEWLETT PACKARD
INDEX TERM
                                           CATEGORIES
CIRCUIT PROTECTION DEVICES
                                           [ NON-ELECTRONICS ]
                                           [ SEMICONDUCTOR TECH. ]
DEVELOPMENT PROGRAM
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
GROUNDING METHODS
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
RELATIVE HUMIDITY
STATIC CONTROL
PROCESS CONTROL/SPECIFICATION
                                           [ FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECH. ]
                                           [ SEMICONDUCTOR TECH. ]
FUTURE TRENDS
SEMICONDUCTOR DEVICE
18214-19 BASIC SPECIFICATION FOR ESD PROTECTION IN INDUSTRY
                                                                                               [136-141]
AUTHOR(S) : PHILLIPS, L.P.
         : GARRETT MANUFACTURING, LTD.
COMPANY
INDEX TERM
                                           CATEGORIES
AVAILABILITY
                                            SYSTEMS
                                            [ SYSTEMS ]
COST
DEVELOPMENT PROGRAM
                                            [ SEMICONDUCTOR TECH. ]
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
ESD PROTECTIVE MATERIAL
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
                                           [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTED ESD AREA
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
RELATIVE HUMIDITY
                                            [ FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECH. ]
PROCESS CONTROL/SPECIFICATION
                                            [ REFERENCE DOCUMENT ]
SPECIFICATION/STANDARD
                                                                                               [131-135]
18214-18 ESD AND CONTAMINATION FROM CLEAN ROOM GARMENTS - PROBLEMS AND SOLUTIONS
AUTHOR(S) : BURNETT, E.S.
COMPANY
          : ARATEX
INDEX TERM
                                            CATEGORIES
DESIGN CONSIDERATIONS
                                            [ SEMICONDUCTOR TECH. ]
APPLICATION FACTORS
                                             DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                            [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
MATERIALS
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
ANTISTATIC GARMENTS
                                             ESD, MATERIALS AND EQUIPMENT, PROTECTIVE )
                                             ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
CLEAN ROOM
                                             ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES
RELATIVE HUMIDITY
STATIC CONTROL
                                             ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
SURFACE RESISTIVITY
QUALITY ASSURANCE
                                             SYSTEMS 1
MISC. FAILURE PHENOMENA
                                             SEMICONDUCTOR TECH. ]
CONTAMINATION
                                            [ MISC. FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                   TITLE
                                                                                                      PAGES
18214-24 CIRCUIT DESIGN FOR EOS/ESD PROTECTION
                                                                                                    [169-174]
<u>AUTHOR(S)</u>: DOMINGOS, H.
                                      RAGHAVAN.R.
          : CLARKSON COLLEGE
COMPANY
INDEX TERM
                                             CATEGORIES
CIRCUIT PROTECTION DEVICES
                                             [ NON-ELECTRONICS ]
DESIGN FOR TESTABILITY
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                             [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ ESD, DEVICE, TESTING METHODS ]
HUMAN BODY ESD MODEL
INPUT PROTECTION
                                             [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
OVERSTRESS
                                             [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FUTURE TRENDS
                                             [ SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
18214-23 UNIFORM ESD PROTECTION IN A LARGE MULTI-DEPARTMENT ASSEMBLY PLANT
                                                                                                    [165-168]
AUTHOR(S) : KIRK, W.J.
          : BENDIX
COMPANY
                                             CATEGORIES
INDEX TERM
                                             SYSTEMS
COST
DEVELOPMENT PROGRAM
                                              [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
STATIC CONTROL
REFERENCE DOCUMENT
18214-22 ESD MINIMIZATION TECHNIQUE FOR MOS MANUFACTURING FINAL TEST AREA
                                                                                                    [157-164]
AUTHOR(S) : YOUN,S.Y.
                                       HARTDEGEN, N.
                                                                 SHARP.M.
COMPANY
          : MOSTEK
INDEX TERM
                                              CATEGORIES
DESIGN FOR TESTABILITY
                                              DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH.
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
PROTECTIVE WORK BENCH SURFACE
RELATIVE HUMIDITY
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
STATIC CONTROL
                                             [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
TRIOBOELECTRIC CHARGING
                                               ESD, EOS/ESD PHYSICS ]
                                             [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                             [ SEMICONDUCTOR DEVICE ]
MICROCIRCUIT
TEST TECHNIQUES FOR REL. ASSESSMENT
                                             [ SEMICONDUCTOR TECH. ]
                                             [ MISC. FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
[ MISC. FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
CONTAMINATION
PROCESS/WORKMANSHIP INDUCED
18214-21 AN EFFECTIVE ELECTROSTATIC DISCHARGE PROTECTION PROGRAM
                                                                                                    [145-156]
AUTHOR(S) : STRAND, C.J.
                                      TWEET.A.
                                                                 WEIGHT, M.E.
         : SPERRY UNIVAC
COMPANY
                                             CATEGORIES
INDEX TERM
DEVELOPMENT PROGRAM
                                              [ SEMICONDUCTOR TECH. ]
                                              [ SEMICONDUCTOR TECH. ]
EOS/ESD
PROTECTED ESD AREA
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
STATIC CONTROL
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ] [ ESD, DEVICE, TESTING METHODS ]
FLOOR SURFACE
ESD SUSCEPTIBILITY TESTING
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
WRIST STRAP
                                              [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                              [ SEMICONDUCTOR TECH. ]
FUTURE TRENDS
HUMAN FACTORS
                                             [ SYSTEMS ]
QUALITY ASSURANCE
                                              [ SYSTEMS ]
SEMICONDUCTOR DEVICE
```

```
DOCUMENT-SEQUENCE NO.
                                                                                              PAGES
                                 TITLE
18214-28 ELECTRICAL GROUNDING IN LARGE INSTRUMENTATION SYSTEMS
                                                                                            [190-202]
AUTHOR(S) : GRUCHALLA, M.
         : EG&G WASC, INC.
COMPANY
INDEX TERM
                                          CATEGORIES
CIRCUIT BREAKER
                                          [ CIRCUIT PROTECTION DEVICES, NON-ELECTRONICS ]
EOS/ESD
                                          SEMICONDUCTOR TECH. 1
                                          [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
GROUNDING METHODS
REFERENCE DOCUMENT
SYSTEM
                                          [ LEVEL OF ASSEMBLY ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                          [ SEMICONDUCTOR TECH. ]
18214-27 ELECTROSTATIC DISCHARGE IMMUNITY IN COMPUTER SYSTEMS
                                                                                            [185-189]
AUTHOR(S) : SHEEHAN, D.K.
                                    BURROUGHS, J.E.
COMPANY : HONEYWELL
INDEX TERM
                                          CATEGORIES
DESIGN FOR TESTABILITY
                                          DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                          [ SEMICONDUCTOR TECH. ]
EOS/ESD
ESD CONTROL PROGRAM
                                            ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
STATIC CONTROL
                                          [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                          [ SEMICONDUCTOR TECH. ]
FUTURE TRENDS
GUIDE/PROCEDURE
                                          [ REFERENCE DOCUMENT ]
COMPUTERIZED TECH
                                          [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
                                          [ DATA COLLECTION SYS./TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
COMPUTERIZED
                                                                                             [179-184]
18214-26 ELECTROSTATIC DISCHARGE AT THE PRODUCT LEVEL
AUTHOR(S) : ELLIS, E.B.
         : HEWLETT PACKARD
COMPANY
INDEX TERM
                                          CATEGORIES
DESIGN FOR TESTABILITY
                                          [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                          [ SEMICONDUCTOR TECH. ]
EOS/ESD
ESD CONTROL PROGRAM
                                          [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                          [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                          [ USER OF REL. PREDICTION MODELS ]
PROCUREMENT CONTROLS
SYSTEM
                                          [ LEVEL OF ASSEMBLY ]
                                          [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST PROGRAM DEVELOPMENT
18214-25 IN-CIRCUIT ANALYSIS OF ESD DAMAGED DEVICES
                                                                                             [175-178]
AUTHOR(S) : SAUERS, J.P.
COMPANY
         : MAGNAVOX
                                          CATEGORIES
INDEX TERM
DESIGN FOR TESTABILITY
                                          [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                          [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                          [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
                                          [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
                                          [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
PROCESS CONTROL/SPECIFICATION
                                          [ FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECH. ]
FUTURE TRENDS
                                          [ SEMICONDUCTOR TECH. ]
MICROCIRCUIT
                                          [ SEMICONDUCTOR DEVICE ]
```

```
DOCUMENT-SEQUENCE NO.
                                   TITLE
                                                                                                    PAGES
18172- 4 ANALYSIS OF ELECTROSTATIC CHARGE PROPENSITY OF FLOOR FINISHES
                                                                                                  [17-20
AUTHOR(S) : LINGOUSKY, J.E.
                                      HOLT, V.E.
         : BELL LABORATORIES
COMPANY
INDEX TERM
                                            CATEGORIES
MATERIALS
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
RELATIVE HUMIDITY
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
FLOOR SURFACE
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                            [ REFERENCE DOCUMENT ]
GUIDE/PROCEDURE
TEST PROGRAM DEVELOPMENT
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172- 3 THE PRODUCTION OPERATOR: WEAK LINK OR WARRIOR IN THE ESD BATTLE?
                                                                                                  [12-16
AUTHOR(S) : HANSEL,G.E.
COMPANY : MOTOROLA
INDEX TERM
                                            CATEGORIES
DEVELOPMENT PROGRAM
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
ESD CONTROL PROGRAM
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
HUMAN FACTORS
                                             [ SYSTEMS ]
REFERENCE DOCUMENT
TEST PROGRAM DEVELOPMENT
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172- 2 ESD CONTROL IMPLEMENTATION AND COST AVOIDANCE ANALYSIS
                                                                                                  [6-11
                                                                                                            1
AUTHOR(S) : DOWNING, M.H.
COMPANY : LOCKHEED
INDEX TERM
                                            CATEGORIES
COST
                                             [ SYSTEMS ]
EOS/ESD
                                               SEMICONDUCTOR TECH. ]
ESD PROTECTIVE MATERIAL
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
PROTECTED ESD AREA
STATIC CONTROL
REFERENCE DOCUMENT
GUIDE/PROCEDURE
                                            [ REFERENCE DOCUMENT ]
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST EQUIPMENT
TEST PROGRAM DEVELOPMENT
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172- 1 ESD-HOW OPTEN DOES IT HAPPEN?
                                                                                                  11-5
                                                                                                            1
AUTHOR(S) : DANGELMAYER,G.T.
COMPANY : WESTERN ELECTRIC COMPANY, INC.
INDEX TERM
                                            CATEGORIES
COMPONENT
                                            [ LEVEL OF ASSEMBLY ]
DESIGN CONSIDERATIONS
                                            [ SEMICONDUCTOR TECH. ]
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
HUMAN BODY ESD MODEL
                                            [ ESD, DEVICE, TESTING METHODS ]
ESD CONTROL PROGRAM
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD SUSCEPTIBILITY TESTING
                                            [ ESD, DEVICE, TESTING METHODS ]
REFERENCE DOCUMENT
TEST TECHNIQUES
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                               PAGES
18172- 8 A PROGRAMMABLE EQUIPMENT FOR ELECTROSTATIC DISCHARGE TESTING TO HUMAN BODY
                                                                                             [48-55
AUTHOR(S) : SHAW, R.N.
                                    ENOCH, R.D.
COMPANY
          : BRITISH TELECOM
                                          CATEGORIES
INDEX TERM
GEOMETRIES/LAYOUT
                                           DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                           DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECH.
COMPUTERIZED ANALYSIS
COMPUTER AIDED DESIGN, (CAD)
                                           [ DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
HUMAN BODY ESD MODEL
                                           [ ESD, DEVICE, TESTING METHODS ]
SPECIFICATION/STANDARD
                                            REFERENCE DOCUMENT }
RELIABILITY MODELING TECHNIQUES
                                            REL. MODELS/DATA/ANALYSIS ]
COMPUTERIZED TECH
                                           [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                            SEMICONDUCTOR TECH. ]
TEST SPECIFICATION
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172- 7 CONSTRUCTION AND APPLICATION OF A TESTER FOR MEASURING EOS/ESD THRESHOLDS TO
                                                                                             137-47
          15KV
AUTHOR(S) : LEE,T.W.
COMPANY
          : MOTOROLA
                                           CATEGORIES
INDEX TERM
DESIGN FOR TESTABILITY
                                           [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ELECTROSTATIC CHARGE DETECTOR
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
REFERENCE DOCUMENT
TEST TECHNIQUES FOR REL. ASSESSMENT
                                           [ SEMICONDUCTOR TECH. ]
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST TECHNIQUES
18172- 6 ESD BY STATIC INDUCTION
                                                                                             129~36
AUTHOR(S) : CHEMELLI,R.G.
                                    UNGER, B.A.
                                                            BOSSARD, P.R.
         : BELL LABORATORIES
COMPANY
INDEX TERM
                                           CATEGORIES
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ ESD, DEVICE, TESTING METHODS ]
CHARGE DEVICE MODEL
INDUCTIVE CHARGING
                                           [ ESD, EOS/ESD PHYSICS ]
ESD PROTECTIVE MATERIAL
                                           [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
REFERENCE DOCUMENT
THEORY OF OPERATION
                                           [ SEMICONDUCTOR TECH. ]
18172- 5 AIR FORCE MAINTENANCE PROGRAM FOR ELECTRICAL OVERSTRESS/ELECTROSTATIC DISCHARGE [21-28
          (EOS/ESD) CONTROL
AUTHOR(S) : THOMPSON, W.H.
                                                             KELAIDIS.M.J.
                                    NYBO.C.L.
COMPANY
         : U.S. AIR FORCE
                                           CATEGORIES
INDEX TERM
DEVELOPMENT PROGRAM
                                           SEMICONDUCTOR TECH.
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
PROTECTED ESD AREA
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                           [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
OVERSTRESS
                                            FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
HUMAN FACTORS
                                            SYSTEMS
QUALITY ASSURANCE
                                            SYSTEMS
                                           [ REFERENCE DOCUMENT ]
GUIDE/PROCEDURE
SPECIFICATION/STANDARD
                                           [ REFERENCE DOCUMENT ]
MAINTAINABILITY TECHNIQUES
                                           [ MAINTAINABILITY, SYSTEMS ]
```

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                               PAGES
18172-12 MEASURING EFFECTIVENESS OF AIR IONIZERS
                                                                                             [76-86
AUTHOR(S) : ANTONEVICH, J.N.
                                    BLITSHTEYN.M.
COMPANY
         : SIMCO COMPANY
INDEX TERM
                                          CATEGORIES
CONTROL
                                           [ EQUIPMENT TYPE/FUNCTION ]
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
APPLICATION FACTORS
TOLERANCES
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
AIR IONIZER
                                            ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                            ESD, MATERIALS AND EQUIPMENT, TESTING ]
DECAY TIME
EOS - ELECTRICAL OVERSTRESS
                                            ESD, EOS/ESD PHYSICS ]
RELATIVE HUMIDITY
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
REFERENCE DOCUMENT
TEST TECHNIQUES FOR REL. ASSESSMENT
                                          [ SEMICONDUCTOR TECH. ]
THEORY OF OPERATION
                                          [ SEMICONDUCTOR TECH. ]
18172-11 THE ROOM AIR IONIZATION SYSTEM, A BETTER ALTERNATIVE THAN 40% RELATIVE HUMIDITY
AUTHOR(S) : MYKKANEN, C.F.
                                    BLINDE, D.R.
        : HONEYWELL
COMPANY
INDEX TERM
                                          CATEGORIES
CONTROL
                                          [ EQUIPMENT TYPE/FUNCTION ]
APPLICATION FACTORS
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
AIR IONIZER
                                            ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
DECAY TIME
                                            ESD, MATERIALS AND EQUIPMENT, TESTING ]
EMI - ELECTROMAGNETIC INTERPACE
                                            ESD, EOS/ESD PHYSICS ]
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
RELATIVE HUMIDITY
REFERENCE DOCUMENT
TEST TECHNIQUES FOR REL. ASSESSMENT
                                          [ SEMICONDUCTOR TECH. ]
18172-10 STATIC SURVEY METERS
                                                                                             [63-66
AUTHOR(S) : LONBORG, J.O.
         : JET PROPULSION LABORATORY (JPL)
COMPANY
INDEX TERM
                                          CATEGORIES
TRADE-OFFS
                                           [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
ELECTROSTATIC CHARGE DETECTOR
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
REFERENCE DOCUMENT
TEST EQUIPMENT
                                          [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172- 9 POWER FAILURE MODELING OF INTEGRATED CIRCUITS
                                                                                             [56-62
AUTHOR(S) : ENLOW, E.W.
                                    BUDEN, B.N.
                                                            GIERI, V.A.
COMPANY
         : BDM CORPORATION
INDEX TERM
                                          CATEGORIES
ELECTRICAL
                                           [ TEST STRESS ]
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
EMP - ELECTROMAGNETIC PULSE
                                           [ ESD, EOS/ESD PHYSICS ]
ESD SUSCEPTIBILITY TESTING
                                          [ ESD, DEVICE, TESTING METHODS ]
GUIDE/PROCEDURE
                                           [ REFERENCE DOCUMENT ]
COMPUTERIZED TECH
                                          [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
TEST PROGRAM DEVELOPMENT
                                          [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                  PAGES
                                                                                                [108-117]
18172-16 MODELING AND TESTING FOR SECOND BREAKDOWN PHENOMENA
\underline{AUTHOR(S)}: ORVIS, W.J.
                                     MARTIN, L.C.
                                                              YEE, J.H.
         : LAWRENCE LIVERMORE NATIONAL LABORATORY
INDEX TERM
                                            CATEGORIES
COMPUTER AIDED DESIGN, (CAD)
                                            DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
                                            [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
SECONDARY BREAKDOWN
EOS/ESD
                                            [ SEMICONDUCTOR TECH. ]
                                            [ ESD, EOS/ESD PHYSICS ]
EMP - ELECTROMAGNETIC PULSE
                                            [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
FAILURE CHARACTERIZATION
                                             SEMICONDUCTOR TECH. ]
                                            [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
TRANSISTOR
18172-15 CALCULATIONS OF SECOND BREAKDOWN IN SILICON DIODES AT MICKOWAVE FREQUENCIES
                                                                                                [102-107]
AUTHOR(S) : WARD, A.L.
         : HARRY DIAMOND LAB (HDL)
COMPANY
INDEX TERM
                                            CATEGORIES
COMPONENT
                                            [ LEVEL OF ASSEMBLY ]
SECONDARY BREAKDOWN
                                              ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                             SEMICONDUCTOR TECH. ]
EOS/ESD
COMPUTERIZED
                                            [ DATA COLLECTION SYS./TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
                                              DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
DIODE
                                            [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
MICROWAVE
                                                                                                [95-101]
18172-14 COPLANAR TRIBOELECTRIFICATION OF SELECTED MATERIALS
AUTHOR(S) : FELT, F.S.
COMPANY
         : MARTIN MARIETTA
                                            CATEGORIES
INDEX TERM
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
ESD PROTECTIVE MATERIAL
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
RELATIVE HUMIDITY
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
TRIOBOELECTRIC CHARGING
                                            [ ESD, EOS/ESD PHYSICS ]
REFERENCE DOCUMENT
THEORY OF OPERATION
                                            [ SEMICONDUCTOR TECH. ]
18172-13 PERMANENCE OF THE ANTISTATIC PROPERTY OF COMMERCIAL ANTISTATIC BAGS AND TOTE
                                                                                                [87-94
          BOXES
AUTHOR(S) : KOLYER, J.M.
                                     ANDERSON, W.E.
COMPANY
         : ROCKWELL
INDEX TERM
                                            CATEGORIES
CIRCUIT PROTECTION DEVICES
                                            [ NON-ELECTRONICS ]
CONTROL
                                              EQUIPMENT TYPE/FUNCTION ]
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ] DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
MATERIALS
TRADE-OFFS
                                              SEMICONDUCTOR TECH. ]
EOS/ESD
ANTISTATIC IMPREGNATED PLASTIC
                                            [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                              ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD PROTECTIVE MATERIAL
PROTECTIVE BAGS
                                              ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
                                              ESD, MATERIALS AND EQUIPMENT, TESTING ]
SURFACE RESISTIVITY
                                              ESD, EOS/ESD PHYSICS ]
TRIOBOELECTRIC CHARGING
                                              SEMICONDUCTOR TECH. ]
FABRICATION PROCESSES & TECHNIQUES
                                              PACKAGE, SEMICONDUCTOR TECH. ]
PKG BODY MATERIAL
                                              REFERENCE DOCUMENT ]
GUIDE/PROCEDURE
TEST TECHNIQUES FOR REL. ASSESSMENT
                                            [ SEMICONDUCTOR TECH. ]
                                             TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST EQUIPMENT
TEST PROGRAM DEVELOPMENT
                                             TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST TECHNIQUES
                                            [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
```

SECTION VI, PAGE 10

113

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                                PAGES
18172-20 ESD EVALUATION OF RADIATION-HARDENED, HIGH RELIABILITY CMOS AND MNOS ICS
                                                                                             [134-146]
AUTHOR(S) : SODEN, J.M.
                                    STEWART, H.D.
                                                             PASTOREK, R.A.
         : SANDIA LABORATORIES
COMPANY
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
HUMAN BODY ESD MODEL
                                           [ ESD, DEVICE, TESTING METHODS ]
ESD STD AND HANDBOOK
                                           [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
                                          [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE ANALYSIS RESULTS
REFERENCE DOCUMENT
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
EVALUATION TEST
                                           [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
TEST TECHNIQUES
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172-19 ESD SENSITIVITY OF COMPLEX ICS
                                                                                              [128-133]
AUTHOR(S) : WILSON, D.
COMPANY : MARTIN MARIETTA
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
CHARGE DEVICE MODEL.
ESD SUSCEPTIBILITY TESTING
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE ANALYSIS RESULTS
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
TEST SPECIFICATION
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
18172-18 SEMICONDUCTOR JUNCTION NON-LINEAR FAILURE POWER THRESHOLDS: WUNSCH-BELL
                                                                                             [122-127]
          REVISITED
AUTHOR(S) : ASH, M.S.
COMPANY
         : TRW
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
                                           [ ESD, DEVICE, TESTING METHODS ]
WUNSCH BELL MODEL
MATHEMATICAL ANALYSIS
SEMICONDUCTOR DEVICE
STATISTICAL ANALYSIS
18172-17 TEMPERATURE AT SECOND BREAKDOWN AT A WELL-DEPINED SITE
                                                                                             [118-121 ]
AUTHOR(S) : STOTTS, L.J.
                                    PORTNOY, W.M.
         : TEXAS TECH UNIVERSITY
COMPANY
INDEX TERM
                                           CATEGORIES
SECONDARY BREAKDOWN
                                           [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, DEVICE, FAILURE MODES ]
THERMAL SECONDARY BREAKDOWN
MATHEMATICAL ANALYSIS
THERMAL STRESS/STRAIN
                                           [ MECHANICAL & PHYSICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
DIODE
                                           [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
THERMAL
                                           [ TEST STRESS ]
```

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                   PAGES
18172-24 METAL OXIDE VARISTORS FOR TRANSIENT PROTECTION OF 3 TO 5-VOLT INTEGRATED
                                                                                                 [168-176]
          CIRCUITS
AUTHOR(S) : MAY, J.E.
                                      KORN,S.R.
COMPANY
         : GENERAL ELECTRIC
INDEX TERM
                                            CATEGORIES
CIRCUIT PROTECTION DEVICES
                                             [ NON-ELECTRONICS ]
APPLICATION FACTORS
                                             [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
ELECTRICAL
                                             [ TEST STRESS ]
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
TRANSIENT SUPPRESSORS
                                            [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
GUIDE/PROCEDURE
                                            [ REFERENCE DOCUMENT ]
MICROCIRCUIT
                                            [ SEMICONDUCTOR DEVICE ]
18172-23 INVISIBLE EOS/ESD DAMAGE: HOW TO FIND IT
                                                                                                 [158-167]
AUTHOR(S) : BRENNAN, T.F.
COMPANY
         : SPERRY CORPORATION
INDEX TERM
                                            CATEGORIES
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
EOS - ELECTRICAL OVERSTRESS
                                            [ ESD, EOS/ESD PHYSICS ]
                                            [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                            [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE INDICATOR
FAILURE ANALYSIS RESULTS
                                            [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
18172-22 EOS OR ESD: CAN FAILURE ANALYSIS TELL THE DIFFERENCE?
                                                                                                 [154-157]
AUTHOR(S) : NOEL, P.H.
                                      DREIBELBIS, D.H.
         : IBM CORPORATION
COMPANY
INDEX TERM
                                            CATEGORIES
                                             [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
OVERSTRESS
                                            [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
                                            [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
[ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE INDICATOR
FAILURE ANALYSIS RESULTS
REFERENCE DOCUMENT
18172-21 THE EFFECT OF ESD ON CCD RELIABILITY
                                                                                                 [147-153]
AUTHOR(S): WHITEHEAD, A.P. LYNCH, J.T.
COMPANY
          : PLESSEY
INDEX TERM
                                             CATEGORIES
                                            [ SEMICONDUCTOR TECH. ]
                                            [ ESD, DEVICE, TESTING METHODS ]
CHARGE DEVICE MODEL
                                             [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
FAILURE ANALYSIS RESULTS
                                            [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
                                            [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
CCD
REFERENCE DOCUMENT
                                            [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ] [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
LIFE
OPERATIONAL TEST
```

DOCUMENT-SEQUENCE NO.	TITLE	PAGES	
17517-35 NON-LINEAR KINETICS OF AUTHOR(S) : ASH,M.S. COMPANY : TRW	SEMICONDUCTOR JUNCTION THERMAL FAILURE	[242-245]
INDEX TERM EOS/ESD ESD SUSCEPTIBILITY TESTING WUNSCH BELL MODEL OVERSTRESS MATHEMATICAL ANALYSIS DISCRETE SEMICONDUCTOR	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, TESTING METHODS] [ESD, DEVICE, TESTING METHODS] [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR [SEMICON_JUCTOR DEVICE]	тесн.]	
17517-34 EVALUATION OF ELECTROS AUTHOR(S) : CHASE, E.W. COMPANY : BELL LABORATORIES	STATIC DISCHARGE TO 16K EPROMS	[236-241	1
INDEX TERM EOS/ESD CHARGE DEVICE MODEL HUMAN BODY ESD MODEL ESD SUSCEPTIBILITY TESTING OVERSTRESS DIGITAL LSI TEST TECHNIQUES FOR REL. ASSESSM	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, TESTING METHODS] [ESD, DEVICE, TESTING METHODS] [ESD, DEVICE, TESTING METHODS] [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR [MICROCIRCUIT, SEMICONDUCTOR DEVICE] [SEMICONDUCTOR TECH.]	t TECH.]	
17517-33 EOS DAMAGE IN SILICON AUTHOR(S): PEASE,R.L. COMPANY: HISSION RESEARCH COR	BARNUM, J. VULIET, W.	[209-235	1
INDEX TERM EOS/ESD METALLIZATION MELT ESD SUSCEPTIBILITY TESTING OVERSTRESS MATHEMATICAL ANALYSIS RELIABILITY MODELING TECHNIQUES DETECTOR/SENSOR	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, FAILURE MODES] [ESD, DEVICE, TESTING METHODS] [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR [REL. MODELS/DATA/ANALYSIS] [OPTOELECTRONIC, SEMICONDUCTOR DEVICE]	TECH.]	
17517-32 TIME-RELATED IMPROVEMENT DAMAGED OPERATIONAL AND AUTHOR(S): HEAD,G.O. COMPANY: LEAR SIEGLER, INC.	ENTS OF ELECTRICAL CHARACTERISTICS IN ELECTROSTATICALLY APPLIFIERS	[225-228	Ì
INDEX TERM EOS/ESD HUMAN BODY ESD MODEL ESD STD AND HANDBOOK ESD SUSCEPTIBILITY TESTING OVERSTRESS	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, TESTING METHODS] [ESD, STANDARDS, HANDBOOKS, MANUALS] [ESD, DEVICE, TESTING METHODS] [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR	R TECH.]	

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                                PAGES
17517-31 FAILURE ANALYSIS OF SEMICONDUCTOR DEVICES IN EOS/ESD TESTING
                                                                                              [219-224 ]
AUTHOR(S) : LIN,T.S.
                                    HORGAN, E.L.
COMPANY
         : TRW
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
                                          [ ESD, DEVICE, TESTING METHODS ]
[ ESD, DEVICE, FAILURE MODES ]
ESD SUSCEPTIBILITY TESTING
THERMAL SECONDARY BREAKDOWN
FAILURE ANALYSIS RESULTS
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
DISCRETE SEMICONDUCTOR
                                           [ SEMICONDUCTOR DEVICE ]
STATISTICAL ANALYSIS
TEST TECHNIQUES FOR REL. ASSESSMENT
                                          [ SEMICONDUCTOR TECH. ]
17517-30 LIGHTNING PROTECTION FOR COMPUTER DATA LINES
                                                                                              [212-218 ]
AUTHOR(S) : CLARK, O.M.
         : GENERAL SEMICONDUCTOR INDUSTRIES
INDEX TERM
                                           CATEGORIES
CIRCUIT PROTECTION DEVICES
                                           [ NON-ELECTRONICS ]
COMPUTATION
                                           [ EQUIPMENT TYPE/FUNCTION ]
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
TRANSIENT SUPPRESSORS
                                           [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
REFERENCE DOCUMENT
17517-29 POTENTIAL ESD HAZARDS ASSOCIATED WITH EXPLOSIVE PRIMERS
                                                                                              [208-211]
AUTHOR(S) : MYKKANEN, C.F.
COMPANY
         : HONEYWELL
                                           CATEGORIES
INDEX TERM
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
HUMAN BODY ESD MODEL
                                           [ ESD, DEVICE, TESTING METHODS ]
TRIOBOELECTRIC CHARGING
                                           [ ESD, EOS/ESD PHYSICS ]
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE CAUSE
REPERENCE DOCUMENT
WEAPONS
                                           [ EQUIPMENT TYPE/FUNCTION ]
17517-28 EOS THRESHOLD DETERMINATION OF ELECTRO-EXPLOSIVE DEVICES
                                                                                              [202-207]
AUTHOR(S) : HAYS,R.A.
COMPANY
         : U.S. AIR FORCE
INDEX TERM
                                           CATEGORIES
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
DIELECTRIC BREAKDOWN
                                           [ ESD, DEVICE, FAILURE MODES ]
                                           [ ESD, EOS/ESD PHYSICS ]
EMP - ELECTROMAGNETIC PULSE
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
FAILURE CHARACTERIZATION
                                           [ SEMICONDUCTOR TECH. ]
MISSILE
                                           [ APPLICATION ENVIRONMENT ]
17517-27 BEHAVIOR OF THICK-FILM POWER RESISTORS SUBJECTED TO LARGE MOMENTARY OVERLOADS
                                                                                              [198-201]
AUTHOR(S) : MATHURIN, J.
                                    THOMAS, R.M.
                                                             GUAY.R.H.
COMPANY
         : EPITEK ELECTRONIC, LTD.
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
[ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
RESISTOR
                                           [ PASSIVE DEVICE, COMPONENT TYPE ]
REFERENCE DOCUMENT
```

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                 PAGES
                                                                                                [192-197 ]
17517-26 PREDICTION OF THIN-FILM RESISTOR BURNOUT
AUTHOR(S) : SMITH, J.S.
                                    LITTAU.W.R.
COMPANY : LOCKHEED
INDEX TERM
                                           CATEGORIES
                                            SEMICONDUCTOR TECH. ]
EOS/ESD
ESD SUSCEPTIBILITY TESTING
                                            [ ESD, DEVICE, TESTING METHODS ]
MATHEMATICAL ANALYSIS
RESISTOR
                                           [ PASSIVE DEVICE, COMPONENT TYPE ]
REFERENCE DOCUMENT
17517-25 PULSE POWER RESPONSE AND DAMAGE CHARACTERISTICS OF CAPACITORS
                                                                                               [174-191]
AUTHOR(S) : TASCA,D.M.
COMPANY : GENERAL ELECTRIC
INDEX TERM
                                            CATEGORIES
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
DIELECTRIC BREAKDOWN
                                            [ ESD, DEVICE, FAILURE MODES ]
ESD SUSCEPTIBILITY TESTING
                                            [ ESD, DEVICE, TESTING METHODS ]
                                            [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
CAPACITOR
                                            [ PASSIVE DEVICE, COMPONENT TYPE ]
REFERENCE DOCUMENT
                                                                                                [167-173 ]
17517-24 AN OVERVIEW OF EOS EFFECTS ON PASSIVE COMPONENTS
AUTHOR(S) : WUNSCH,D.C.
          : BDM CORPORATION
INDEX TERM
                                            CATEGORIES
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, DEVICE, TESTING METHODS ] [ SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
FAILURE CHARACTERIZATION
                                            [ PASSIVE DEVICE, COMPONENT TYPE ]
RESISTOR
                                            [ SYSTEMS ]
RELIABILITY
REFERENCE DOCUMENT
                                                                                            [151-166]
17517-23 EOS/ESD FAILURE THRESHOLD ANALYSIS ERRORS, THEIR SOURCE, SIZE AND CONTROL
AUTHOR(S) : HORGAN, E.L.
                                   TEMPLAR, L.C.
                                                              ROWAN, W.H.
         : TRW
COMPANY
INDEX TERM
                                            CATEGORIES
                                            TELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
[ SEMICONDUCTOR TECH. ]
SECONDARY BREAKDOWN
EOS/ESD
                                            [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, DEVICE, TESTING METHODS ]
[ REL. MODELS/DATA/ANALYSIS ]
ESD SUSCEPTIBILITY TESTING
RELIABILITY MODELING TECHNIQUES
                                            [ SEMICONDUCTOR DEVICE ]
DISCRETE SEMICONDUCTOR
                                                                                               [145-150]
17517-22 DETERMINING AN EMITTER-BASE FAILURE THRESHOLD DISTRIBUTION OF NPN TRANSISTORS
AUTHOR(S) : ENLOW, E.W.
COMPANY
         : BDM CORPORATION
                                            CATEGORIES
INDEX TERM
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                            [ ESD, DEVICE, TESTING METHODS ]
                                            [ ESD, DEVICE, TESTING METHODS ]
[ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
WUNSCH BELL MODEL
FAILURE ANALYSIS TECHNIQUES
TRANSISTOR
                                            [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
WEIBULL
                                            [ STATISTICAL ANALYSIS ]
```

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                                 PAGES
17517-21 SEMICONDUCTOR DEVICE FAILURE CRITERIA FOR SINUSOIDAL STRESSES
                                                                                              [139-144]
AUTHOR(S) : THOMAS, R.E.
         : KAMAN SCIENCES CORPORATION
COMPANY
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
EMP - ELECTROMAGNETIC PULSE
                                           [ ESD, EOS/ESD PHYSICS ]
                                           [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
FAILURE CHARACTERIZATION
                                           [ SEMICONDUCTOR TECH. ]
MATHEMATICAL ANALYSIS
                                           [ SEMICONDUCTOR DEVICE ]
DISCRETE SEMICONDUCTOR
17517-20 MODELING OF EOS IN SILICON DEVICES
                                                                                              [132-138]
AUTHOR(S) : KUSNEZOV, N.
                                   SMITH, J.S.
COMPANY : LOCKHEED
INDEX TERM
                                           CATEGORIES
                                           SEMICONDUCTOR TECH. ]
EOS/ESD
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
                                           [ ESD, DEVICE, TESTING METHODS ]
WUNSCH BELL MODEL
RELIABILITY MODELING TECHNIQUES
                                           [ REL. MODELS/DATA/ANALYSIS ]
                                           [ DATA COLLECTION SYS./TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
COMPUTERIZED
SILICON
                                           [ SEMICONDUCTOR TECH. ]
17517-19 AN OVERVIEW OF EOS EFFECTS ON SEMICONDUCTOR DEVICES
                                                                                               [120-131 ]
AUTHOR(S) : PIERCE, D.G.
                                    DURGIN, D.L.
         : BOOZ, ALLEN & HAMILTON
                                           CATEGORIES
INDEX TERM
OXIDATION
                                             CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
METALLIZATION MELT
                                           [ ESD, DEVICE, FAILURE MODES ]
EMP - ELECTROMAGNETIC PULSE
                                           [ ESD, EOS/ESD PHYSICS ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
                                           [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
WUNSCH BELL MODEL
                                           [ ESD, DEVICE, TESTING METHODS ]
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
FAILURE MODES
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
DISCRETE SEMICONDUCTOR
                                           [ SEMICONDUCTOR DEVICE ]
                                                                                              [114-119]
17517-18 ELECTRICAL OVERSTRESS INVESTIGATIONS IN MODERN INTEGRATED CIRCUIT TECHNOLOGIES
AUTHOR(S) : KARASKIEWICZ,R.J.
                                    YOUNG, P.A.
                                                             ALEXANDER, D.R.
COMPANY : BDM CORPORATION
INDEX TERM
                                           CATEGORIES
                                           [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
RELIABILITY
EOS/ESD
                                             SEMICONDUCTOR TECH. ]
INPUT PROTECTION
                                           [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
WUNSCH BELL MODEL
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                           [ SEMICONDUCTOR TECH. ]
FUTURE TRENDS
                                           [ MICROCIRCUIT, SEMICONDUCTOR DEVICE ]
[ SEMICONDUCTOR TECH. ]
DIGITAL LSI
TEST TECHNIQUES FOR REL. ASSESSMENT
                                           [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
STEP STRESS
```

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                              PAGES
17517-17 SUSCEPTIBILITY OF ICS IN ESD STEP-STRESS TESTS
                                                                                             [106-113]
AUTHOR(S): ENDERS,J.
COMPANY
         : STANDARD ELECTRIK LORENZ AG
INDEX TERM
                                          CATEGORIES
                                          DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
PROCESS DESIGN
                                          [ SEMICONDUCTOR TECH. ]
EOS/ESD
METALLIZATION MELT
                                            ESD, DEVICE, FAILURE MODES ]
                                          [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
RELATIVE HUMIDITY
ESD SUSCEPTIBILITY TESTING
                                          [ ESD, DEVICE, TESTING METHODS ]
                                          [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
GUIDE/PROCEDURE
                                            REFERENCE DOCUMENT ]
MICROCIRCUIT
                                          [ SEMICONDUCTOR DEVICE ]
STEP STRESS
                                          [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17517-16 DIAGNOSIS AND ANALYSIS OF EMITTER-BASE JUNCTION OVERSTRESS DAMAGE
                                                                                            [101-105]
AUTHOR(S) : JENSEN, M.C.
                                    MILBURN, R.T.
COMPANY
         : MOTOROLA
INDEX TERM
                                          CATEGORIES
EOS/ESD
                                          SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
                                          [ ESD, DEVICE, TESTING METHODS ]
FAILURE CAUSE
                                          [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
                                          [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
TRANSISTOR
TEST TECHNIQUES FOR REL. ASSESSMENT
                                          [ SEMICONDUCTOR TECH. ]
                                                                                             [97-100]
17517-15 INPUT PROTECTION DESIGN FOR THE 3-MICRON NMOS PROCESS
AUTHOR(S) : TAYLOR, R.G.
COMPANY
         : MOSTEK
INDEX TERM
                                          CATEGORIES
CIRCUIT PROTECTION DEVICES
                                          [ NON-ELECTRONICS ]
APPLICATION FACTORS
                                          [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                          [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                            ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
INPUT PROTECTION
                                          [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
REFERENCE DOCUMENT
SEMICONDUCTOR DEVICE
                                          [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST SPECIFICATION
17517-14 ON CHIP PROTECTION OF HIGH DENSITY NMOS DEVICES
                                                                                             190-96
                                                                                                       1
AUTHOR(S) : HULETT, T.V.
COMPANY
         : MOTOROLA
INDEX TERM
                                          CATEGORIES
CIRCUIT PROTECTION DEVICES
                                           [ NON-ELECTRONICS ]
                                            CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
OXIDATION
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
APPLICATION FACTORS
EOS/ESD
                                          [ SEMICONDUCTOR TECH. ]
                                          [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
INPUT PROTECTION
                                          [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
OVERSTRESS
                                          [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
SEMICONDUCTOR DEVICE
                                          [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST TECHNIQUES
```

```
DOCUMENT-SEQUENCE NO.
                                    TITLE
                                                                                                         PAGES
17517-13 THE EFFECTS OF VLSI SCALING ON EOS/ESD FAILURE THRESHOLD
                                                                                                       [85-89
<u>AUTHOR(S)</u>: PANCHOLY, R.K.
COMPANY
          : ROCKWELL
INDEX TERM
                                               CATEGORIES
CIRCUIT PROTECTION DEVICES
                                               [ NON-ELECTRONICS ]
                                               [ SEMICONDUCTOR TECH. ]
EOS/ESD
DIELECTRIC BREAKDOWN
                                               [ ESD, DEVICE, FAILURE MODES ]
INPUT PROTECTION
                                               [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
                                               [ ESD, DEVICE, FAILURE MODES ] [ ESD, DEVICE, TESTING METHODS ]
METALLIZATION MELT
ESD SUSCEPTIBILITY TESTING
OVERSTRESS
                                               [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
                                               [ SEMICONDUCTOR TECH. ]
FABRICATION PROCESSES & TECHNIQUES
REFERENCE DOCUMENT
17517-12 SELECTION OF PACKAGING MATERIALS FOR ESD SENSITIVE ITEMS
                                                                                                       [75-84
                                                                                                                  J
AUTHOR(S) : KOLYER, J.M.
                                      ANDERSON, W.E.
COMPANY
          : ROCKWELL
INDEX TERM
                                               CATEGORIES
MATERIALS
                                               [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                               [ SEMICONDUCTOR TECH. ]
                                               [ ESD, EOS/ESD PHYSICS ]
ELECTROSTATIC SHIELD
                                               [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD PROTECTIVE MATERIAL
PROTECTIVE BAGS
RELATIVE HUMIDITY
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                               [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
TOPICAL ANTISTATS
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
FAILURE ANALYSIS RESULTS
                                               [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
                                               [ SEMICONDUCTOR TECH. ]
PACKAGE
REFERENCE DOCUMENT
EVALUATION TEST
                                               [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17517-11 INCOMING INSPECTION OF ANTISTATIC PACKAGING MATERIALS
                                                                                                       [65-74
AUTHOR(S) : TOPOLSKI, A.S.
          : DU PONT
COMPANY
INDEX TERM
                                               CATEGORIES
                                               [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
MATERIALS
EOS/ESD
                                               [ SEMICONDUCTOR TECH. ]
                                               [ ESD, MATERIALS AND EQUIPMENT, TESTING ] [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
DECAY TIME
ELECTROSTATIC CHARGE DETECTOR
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ ESD, MATERIALS AND EQUIPMENT, TESTING ]
RELATIVE HUMIDITY
SURFACE RESISTIVITY
VOLUME RESISTIVITY
                                               [ SEMICONDUCTOR TECH. ]
PACKAGE
QUALITY ASSURANCE
                                               [ SYSTEMS ]
GUIDE/PROCEDURE
                                               [ REFERENCE DOCUMENT ]
EVALUATION TEST
                                               [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                   TITLE
                                                                                                      PAGES
17517-10 EVALUATION OF INTEGRATED CIRCUIT SHIPPING TUBES
                                                                                                    [57-64
                                                                 BOSSARD, P.R.
AUTHOR(S) : UNGER, B.
                                       CHEMELLI, R.G.
COMPANY
         : BELL LABORATORIES
INDEX TERM
                                             CATEGORIES
EOS/ESD
                                             SEMICONDUCTOR TECH. ]
CHARGE DEVICE MODEL
                                             [ ESD, DEVICE, TESTING METHODS ]
DIP TUBE
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                             [ ESD, DEVICE, TESTING METHODS ]
HUMAN BODY ESD MODEL
TRIOBOELECTRIC CHARGING
                                             [ ESD, EOS/ESD PHYSICS ]
                                             [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ] [ SEMICONDUCTOR TECH. ]
OVERSTRESS
PACKAGE
GUIDE/PROCEDURE
                                             [ REFERENCE DOCUMENT ]
SEMICONDUCTOR DEVICE
17517- 9 CHO-TRAP, A NOVEL VOLTAGE TRANSIENT PROTECTION PACKAGING MATERIAL \underline{AUTHOR(S)}: PEDULLA,J. MALINARIB,P.
                                                                                                    49-56
                                                                                                              1
         : CHOMERIC, INC.
COMPANY
INDEX TERM
                                             CATEGORIES
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
                                             [ ESD, DEVICE, TESTING METHODS ]
[ ESD, MATERIALS AND EQUIPMENT, TESTING ]
HUMAN BODY ESD MODEL
ESD PROTECTIVE MATERIAL
ESD SUSCEPTIBILITY TESTING
                                             [ ESD, DEVICE, TESTING METHODS ]
REFERENCE DOCUMENT
17517- 8 AN ANALYSIS OF ANTISTATIC CUSHIONING MATERIALS
                                                                                                    [44-48
AUTHOR(S) : TENZER, F.D.
                                                                 JOHNSON.M.A.
                                       HARTMANN.H.C.
COMPANY : PACKAGING INDUSTRIES OF CALIFORNIA
                                             CATEGORIES
INDEX TERM
MATERIALS
                                             DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                               SEMICONDUCTOR TECH. ]
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
DECAY TIME
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
RELATIVE HUMIDITY
                                             [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
[ ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD STD AND HANDBOOK
SURFACE RESISTIVITY
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
TOPICAL ANTISTATS
TRIOBOELECTRIC CHARGING
                                             [ ESD, EOS/ESD PHYSICS ]
REFERENCE DOCUMENT
TEST PROGRAM DEVELOPMENT
                                             [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
17517- 7 A LOW-COST PROGRAM FOR EVALUATION OF ESD PROTECTIVE MATERIALS AND EQUIPMENT
                                                                                                    [41-43
AUTHOR(S) : HEAD, G.O.
         : LEAR SIEGLER, INC.
COMPANY
INDEX TERM
                                             CATEGORIES
                                             SYSTEMS )
DEVELOPMENT PROGRAM
                                             [ SEMICONDUCTOR TECH. ]
                                             [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ] [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
AIR IONIZER
CONDUCTIVE ESD PROTECTIVE MATERIAL
ESD PROTECTIVE MATERIAL
                                              [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
                                             [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
SURFACE RESISTIVITY
GUIDE/PROCEDURE
                                             [ REFERENCE DOCUMENT ]
```

```
DOCUMENT-SEQUENCE NO.
                                    TITLE
                                                                                                         PAGES
17517- 6 A PRAGMATIC APPROACH TO ESD PROBLEM SOLVING IN THE MANUFACTURING ENVIRONMENT
                                                                                                       [34-39
          A CASE HISTORY
AUTHOR(S) : MCALEER, R.E.
                                        LUCAS, G.H.
                                                                   MCDONALD, A.
         : TEXAS INSTRUMENTS (TI)
COMPANY
                                               CATEGORIES
INDEX TERM
DEVELOPMENT PROGRAM
                                               SEMICONDUCTOR TECH. ]
EOS/ESD
                                               [ SEMICONDUCTOR TECH. ]
GROUNDING STRAPS
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTED ESD AREA
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTIVE WORK BENCH SURFACE
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
RELATIVE HUMIDITY
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
REFERENCE DOCUMENT
17517- 5 THE ECONOMIC BENEFITS OF AN EFFECTIVE ESD AWARENESS AND CONTROL PROGRAM - AN
                                                                                                       [29-33
           EMPIRICAL ANALYSIS
AUTHOR(S) : MCFARLAND, W.Y.
COMPANY
          : WESTERN ELECTRIC COMPANY, INC.
                                               CATEGORIES
INDEX TERM
COMPONENT
                                                 LEVEL OF ASSEMBLY ]
DEVELOPMENT PROGRAM
                                                 SEMICONDUCTOR TECH. ]
EOS/ESD
                                               [ SEMICONDUCTOR TECH. ]
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
AIR IONIZER
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
GROUNDING STRAPS
                                               [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD PROTECTIVE MATERIAL
ESD CONTROL PROGRAM
PROTECTED ESD AREA
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ] [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
STATIC CONTROL
SENSITIVE ELECTRONIC DEVICE SYMBOLS
                                               [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
REFERENCE DOCUMENT
17517- 4 THE PERFECT "10" - CAN YOU REALLY HAVE ONE?
                                                                                                       121-27
                                                                                                                  1
QTHOR(S) : FRANK, D.E.
COMPANY : DOUGLAS AIRCRAFT
INDEX TERM
                                               CATEGORIES
                                               [ LEVEL OF ASSEMBLY ]
COMPONENT
                                                 DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
APPLICATION FACTORS
DEVELOPMENT PROGRAM
                                                 SEMICONDUCTOR TECH. ]
                                               [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTED ESD AREA
ESD SUSCEPTIBILITY TESTING
                                               [ ESD, DEVICE, TESTING METHODS ]
                                               [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
[ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
WORKMANSHIP
QUALITY ASSURANCE
                                               [ SYSTEMS ]
REFERENCE DOCUMENT
SEMICONDUCTOR DEVICE
```

SECTION VI, PAGE 29

139

DOCUMENT-SEQUENCE NO.	TITLE	PAGES	
17517- 3 ANALYSIS OF ESD FAILU AUTHOR(S) : MCATEER,O.J. COHPANY : WESTINGHOUSE	RES TWIST,R.E.	[14-20	1
INDEX TERM EOS/ESD ESD SUSCEPTIBILITY TESTING OVERSTRESS FAILURE ANALYSIS RESULTS REFERENCE DOCUMENT MICROCIRCUIT	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, TESTING METHODS] [FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR [FAILURE ANALYSIS, SEMICONDUCTOR TECH.] [SEMICONDUCTOR DEVICE]	тесн.]	
17517- 2 QUANTITATIVE EFFECTS SUPPRESSION AUTHOR(S) : BLINDE, D.R. COMPANY : HONEYWELL	OF RELATIVE & ABSOLUTE HUMIDITY ON ESD GENERATION/	[9-13	1
INDEX TERM DESIGN CONSIDERATIONS MATERIALS EOS/ESD AIR IONIZER DECAY TIME RELATIVE HUMIDITY STATIC CONTROL FLOOR SURFACE THEORY OF OPERATION	CATEGORIES [SEMICONDUCTOR TECH.] [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH.] [SEMICONDUCTOR TECH.] [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] [ESD, MATERIALS AND EQUIPMENT, TESTING] [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHN [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHN [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE] [SEMICONDUCTOR TECH.]	IQUES]	
17517- 1 A CLOSER LOOK AT THE AUTHOR(S) : HYATT, H.M. COMPANY : EXPERIMENTAL PHYSIC	CALVIN, H. MELLBERG, H.	[1-8	}
INDEX TERM DESIGN FOR TESTABILITY EOS/ESD HUMAN BODY ESD MODEL THEORY OF OPERATION TESTING TOOLS & TECHNIQUES	CATEGORIES [DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH.] [SEMICONDUCTOR TECH.] [ESD, DEVICE, TESTING METHODS] [SEMICONDUCTOR TECH.] [SEMICONDUCTOR TECH.]		

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                               PAGES
17516-33 MEASUREMENT OF PAST TRANSIENTS AND APPLICATION TO HUMAN ESD
                                                                                             [225-230 ]
AUTHOR(S) : CALVIN, H.
                                    HYATT.H.
                                                             MELLBERG.H.
         : EXPERIMENTAL PHYSICS CORPORATION
COMPANY
INDEX TERM
                                          CATEGORIES
DESIGN FOR TESTABILITY
                                          DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
INDUCTIVE CHARGING
                                          [ ESD, EOS/ESD PHYSICS ]
17516-32 AN EVALUATION OF WRIST STRAP PARAMETERS
                                                                                             [218-224]
\underline{AUTHOR(S)} : SOHL, J.E.
COMPANY
         : HONEYWELL
INDEX TERM
                                           CATEGORIES
DESIGN FOR TESTABILITY
                                           DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
GROUNDING STRAPS
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
WRIST STRAP
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
TEST EQUIPMENT
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
17516-31 STATIC CONTROL SYSTEMS
                                                                                             [213-217]
AUTHOR(S) : BOLASNY, R.E.
         : SCIENTIFIC ENTERPRISES, INC.
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
EMI - ELECTROMAGNETIC INTERFACE
                                           [ ESD, EOS/ESD PHYSICS ]
STATIC CONTROL
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
TEST EQUIPMENT
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
17516-30 BASIC CONSIDERATIONS IN ELECTRO-THERMAL OVERSTRESS IN ELECTRONIC COMPONENTS
                                                                                             [206-212]
AUTHOR(S) : DOMINGOS, H.
COMPANY : CLARKSON COLLEGE
INDEX TERM
                                           CATEGORIES
                                           [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
MATERIALS
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
TRANSIENT SUPPRESSORS
                                           [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
THERMAL
                                           [ TEST STRESS ]
17516-29 FACILITY EVALUATION: ISOLATING ENVIRONMENTAL ESD PROBLEMS
                                                                                             [192-205]
AUTHOR(S) : HALPERIN, S.A.
         : ANALYTICAL CHEMICAL LABORATORY
COMPANY
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
DECAY TIME
                                            ESD, MATERIALS AND EQUIPMENT, TESTING ]
GROUNDING STRAPS
                                            ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD PROTECTIVE MATERIAL
                                           [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
EMI - ELECTROMAGNETIC INTERFACE
                                           [ ESD, EOS/ESD PHYSICS ]
ESD CONTROL PROGRAM
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
STATIC CONTROL
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
TOPICAL ANTISTATS
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
RELIABILITY
                                           [ SYSTEMS ]
```

OCUMENT-SEQUENCE NO. TITLE PAGES 7516-28 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM [189-191] UTHOR(S) : MCATEER, O.J. : WESTINGHOUSE YMA9MO: CATEGORIES INDEX TERM [SEMICONDUCTOR TECH.] IOS/ESD ESD PROTECTIVE MATERIAL [ESD, MATERIALS AND EQUIPMENT, TESTING] ESD CONTROL PROGRAM [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES] STATIC CONTROL [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES] REFERENCE DOCUMENT 17516-27 MICROCIRCUIT ELECRICAL OVERSTRESS TOLERANCE TESTING AND QUALIFICATION [184-188] AUTHOR(S) : ANTINONE, R.J. COMPANY : BDM CORPORATION INDEX TERM CATEGORIES ELECTRICAL [TEST STRESS] EOS/ESD [SEMICONDUCTOR TECH.] **ELECTROSTATIC SIMULATOR** [ESD, DEVICE, TESTING METHODS] EMP - ELECTROMAGNETIC PULSE EOS - ELECTRICAL OVERSTRESS [ESD, EOS/ESD PHYSICS] [ESD, EOS/ESD PHYSICS] [ESD, DEVICE, TESTING METHODS] ESD SUSCEPTIBILITY TESTING MICROCIRCUIT [SEMICONDUCTOR DEVICE] CHARACTERIZATION [TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH.] [176-183] 17516-26 SURGE TESTS ON PLUG-IN TRANSFORMERS AUTHOR(S) : KRESSLER, D.R. : BELL LABORATORIES COMPANY INDEX TERM CATEGORIES [SEMICONDUCTOR TECH.] EOS/ESD INPUT PROTECTION [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION] TRANSIENT SUPPRESSORS [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION] TEST TECHNIQUES FOR REL. ASSESSMENT [SEMICONDUCTOR TECH.] 17516-25 LIGHTNING PROTECTION DESIGN FOR A PHOTOVOLTAIC CONCENTRATOR [167-175] AUTHOR(S) : CROUCH, K.E. COMPANY : LIGHTNING TECHNOLOGIES INDEX TERM CATEGORIES DESIGN CONSIDERATIONS SEMICONDUCTOR TECH.] [SEMICONDUCTOR TECH.] EOS/ESD GROUNDING METHODS [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES] TRANSIENT SUPPRESSORS [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION] 17516-24 TEST WAVEFORMS AND TECHNIQUES TO ASSESS THE THREAT TO ELECTRONIC DEVICES OF [161-166] LIGHTNING-INDUCED TRANSIENTS AUTHOR(S) : HESS, R.F.COMPANY : SPERRY CORPORATION INDEX TERM CATEGORIES EOS/ESD [SEMICONDUCTOR TECH.] [ESD, MATERIALS AND EQUIPMENT, TESTING] DECAY TIME TRANSIENT SUPPRESSORS [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION] TESTING TOOLS & TECHNIQUES [SEMICONDUCTOR TECH.]

```
OCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                                PAGES
7516-23 AN OVERVIEW OF THE SOURCES AND EFFECTS OF ELECTRICAL OVERSTRESS
                                                                                              [154-160]
UTHOR(S) : DURGIN, D.L.
        : BOOZ, ALLEN & HAMILTON
OMPANY
NDEX TERM
                                           CATEGORIES
OS/ESD
                                           [ SEMICONDUCTOR TECH. ]
:MC - ELECTROMAGNETIC COMPATIBILITY
                                           [ ESD, EOS/ESD PHYSICS ]
MI - ELECTROMAGNETIC INTERFACE
                                           [ ESD, EOS/ESD PHYSICS ]
MP - ELECTROMAGNETIC PULSE
                                           [ ESD, EOS/ESD PHYSICS ]
OS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
SD STD AND HANDBOOK
                                           [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
SD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
ELIABILITY
                                           [ SYSTEMS ]
EMICONDUCTOR DEVICE
                                           [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
HARACTERIZATION
.7516-22 SOLAR CELL ELECTRICAL OVERSTRESS ANALYSIS
                                                                                              [149-153]
UTHOR(S) : SMYTH, J.B.
                                    VAN LINT, V.A.J.
OMPANY
         : MISSION RESEARCH CORPORATION
NDEX TERM
                                           CATEGORIES
ELECTRICAL FAILURE PHENOMENA
                                           SEMICONDUCTOR TECH. ]
                                           [ SEMICONDUCTOR TECH. ]
COS/ESD
METALLIZATION MELT
                                           [ ESD, DEVICE, FAILURE MODES ]
EOS - ELECTRICAL OVERSTRESS
                                           [ ESD, EOS/ESD PHYSICS ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
THERMAL SECONDARY BREAKDOWN
                                          [ ESD, DEVICE, FAILURE MODES ]
                                           [ ESD, DEVICE, TESTING METHODS ]
[ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
VUNSCH BELL MODEL
FAILURE ANALYSIS RESULTS
17516-21 ASSESSING ELECTRICAL OVERSTRESS EFFECTS ON ELECTRONIC SYSTEMS
                                                                                              [140-148]
<u>AUTHOR(S)</u>: HORGAN, E.L.
COMPANY
         : TRW
INDEX TERM
                                           CATEGORIES
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
ASSEMBLY & EQUIPMENT ESD CLASSIFICATION
                                           [ ESD, DEVICE, TESTING METHODS ]
EMP - ELECTROMAGNETIC PULSE
                                           [ ESD, EOS/ESD PHYSICS ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
RELIABILITY
                                           [ SYSTEMS ]
                                           [ LEVEL OF ASSEMBLY ]
SYSTEM
17516-20 OSCILLATING VOLTAGE PULSES AND SECOND BREAKDOWN
                                                                                              [130-139]
MUTHOR(S) : WARD,A.L.
COMPANY
         : HARRY DIAMOND LAB (HDL)
                                           CATEGORIES
INDEX TERM
ELECTRICAL FAILURE PHENOMENA
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
SECONDARY BREAKDOWN
COS/ESD
                                           [ SEMICONDUCTOR TECH. ]
ECAY TIME
                                           [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
LLECTRO-THERMOMIGRATION
                                           [ ESD, DEVICE, FAILURE MODES ]
ISD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
)IODE
                                           [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
```

SECTION VI, PAGE 33

وزرا

```
UMENT-SEQUENCE NO.
                               TITLE
                                                                                              PAGES
16-19 EFFECT OF JUNCTION SPIKES AND DOPING LEVEL ON THE SECOND BREAKDOWN
                                                                                            [122-129]
        SUSCEPTIBILITY OF SILICON-ON-SAPPHIRE DIODES
HOR(S) : KNIGHT, E.R.
                                  BUDENSTEIN, P.P.
       : AUBURN UNIVERSITY
PANY
EX TERM
                                         CATEGORIES
ONDARY BREAKDOWN
                                         [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
/ESD
                                         [ SEMICONDUCTOR TECH. ]
                                         [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, FAILURE MODES ]
SUSCEPTIBILITY TESTING
RMAL SECONDARY BREAKDOWN
DE
                                         [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
116-18 SOME DESIGN CRITERIA FOR AVOIDING SECOND BREAKDOWN IN BIPOLAR DEVICES
                                                                                            [117-121]
'HOR(S) : MATHEWS, D.
       : U.S. ARMY
IPANY
EX TERM
                                         CATEGORIES
OLAR & FET, (BIFET, BIMOS, ETC)
                                         [ COMPONENT TYPE ]
'GLAR
                                           COMPONENT TYPE }
3/ESD
                                           SEMICONDUCTOR TECH. ]
) SUSCEPTIBILITY TESTING
                                         [ ESD, DEVICE, TESTING METHODS ]
ERMAL SECONDARY BREAKDOWN
                                         [ ESD, DEVICE, FAILURE MODES ]
ISCH BELL MODEL
                                         [ ESD, DEVICE, TESTING METHODS ]
516-17 HIGH-FIELD PHENOMENA AND FAILURE MECHANISMS IN BIPOLAR TRANSISTORS
                                                                                            [112-116]
[HOR(S) : HOWER, P.L.
MPANY
       : WESTINGHOUSE
DEX_TERM
                                         CATEGORIES
POLAR
                                          COMPONENT TYPE ]
CONDARY BREAKDOWN
                                           ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                          SEMICONDUCTOR TECH. }
S/ESD
D SUSCEPTIBILITY TESTING
                                         [ ESD, DEVICE, TESTING METHODS ]
ILURE CHARACTERIZATION
                                           SEMICONDUCTOR TECH. ]
ANSISTOR
                                         [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
516-16 SUPRISING PATTERNS OF CMOS SUSCEPTIBILITY TO ESD AND IMPLICATIONS ON LONG-TERM
                                                                                            [104-111]
        RELIABILITY
THOR(S): SCHWANK, J.R.
                                   BAKER, R.P.
                                                           ARMENDARIZ, M.G.
       : SANDIA LABORATORIES
MPANY
                                         CATEGORIES
DEX TERM
IDATION
                                         [ CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                           SEMICONDUCTOR TECH. ]
S/ESD
D SUSCEPTIBILITY TESTING
                                          ESD, DEVICE, TESTING METHODS ]
                                         [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
CROCIRCUIT
                                          SEMICONDUCTOR DEVICE ]
ST TECHNIQUES FOR REL. ASSESSMENT
                                         [ SEMICONDUCTOR TECH. ]
516-15 ELECTROSTATIC SENSITIVITY OF VARIOUS INPUT PROTECTION NETWORKS
                                                                                            [95-103]
THOR(S) : TURNER, T.E.
                                  MORRIS,S.
MPANY
      : MOSTEK
DEX TERM
                                         CATEGORIES
RCUIT PROTECTION DEVICES
                                           NON-ELECTRONICS ]
IDATION
                                          CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
DMETRIES/LAYOUT
                                         [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                         [ SEMICONDUCTOR TECH. ]
S/ESD
PUT PROTECTION
                                         [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
                                         [ ESD. DEVICE, TESTING METHODS ]
D SUSCEPTIBILITY TESTING
```

```
UMENT-SEQUENCE NO.
                               TITLE
                                                                                               PAGES
16-14 LSI DESIGN CONSIDERATIONS FOR ESD PROTECTION STRUCTURES RELATED TO PROCESS AND
       LAYOUT VARIATIONS
                                  TENG,T.
HOR(S) : HART, A.R.
PANY
       : HEWLETT PACKARD
EX TERM
                                         CATEGORIES
DATION
                                         [ CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
IGN CONSIDERATIONS
                                          SEMICONDUCTOR TECH. ]
                                           SEMICONDUCTOR TECH. ]
/ESD
 SUSCEPTIBILITY TESTING
                                         [ ESD, DEVICE, TESTING METHODS ]
ITAL LSI
                                         [ MICROCIRCUIT, SEMICONDUCTOR DEVICE ]
16-13 SOS PROTECTION: THE DESIGN PROBLEM
                                                                                             [81-86
\underline{HOR(S)}: LUISI, J.A.
PANY
       : ROCKWELL
EX TERM
                                         CATEGORIES
CUIT PROTECTION DEVICES
                                         [ NON-ELECTRONICS ]
IGN CONSIDERATIONS
                                         [ SEMICONDUCTOR TECH. ]
/ESD
                                           SEMICONDUCTOR TECH. ]
'UT PROTECTION
                                         [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
FET
                                         [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
16-12 PROTECTION OF MOS INTEGRATED CIRCUITS FROM DESTRUCTION BY ELECTROSTATIC
                                                                                             [73-80
       DISCHARGE
'HOR(S) : KELLER, J.K.
IPANY
      : BELL LABORATORIES
EX TERM
                                         CATEGORIES
CUIT PROTECTION DEVICES
                                         NON-ELECTRONICS ]
:DATION
                                         [ CHEMICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
:/ESD
                                         [ SEMICONDUCTOR TECH. ]
                                         [ ESD, DEVICE, TESTING METHODS ] [ ESD, DEVICE, TESTING METHODS ]
IAN BODY ESD MODEL
) SUSCEPTIBILITY TESTING
ROCIRCUIT
                                         [ SEMICONDUCTOR DEVICE ]
116-11 ANALYSIS OF ESD DAMAGE IN JFET PREAMPLIFIERS
                                                                                             [67-72
                                                                                                       ]
CHOR(S) : CASTLE,G.S.P.
                                  HIBBERT, D.R.
      : NORTHERN TELECOM
IPANY
EX TERM
                                         CATEGORIES
                                         [ SEMICONDUCTOR TECH. ]
7ESD
'ALLIZATION MELT
                                         [ ESD, DEVICE, FAILURE MODES ]
                                          ESD, DEVICE, TESTING METHODS ]
) SUSCEPTIBILITY TESTING
LURE ANALYSIS RESULTS
                                         [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
                                         [ FIELD EFFECT, (FET), SEMICONDUCTOR TECH. ]
116-10 FAILURE THRESHOLD DISTRIBUTIONS IN BIPOLAR TRANSISTORS
                                                                                             [59-66
'HOR(S) : ENLOW, E.W.
                                  KARASKIEWICZ,R.J.
PANY
       : SANDIA LABORATORIES
EX TERM
                                         CATEGORIES
                                          COMPONENT TYPE ]
OLAR
                                           SEMICONDUCTOR TECH. J
CTRICAL FAILURE PHENOMENA
                                           SEMICONDUCTOR TECH. ]
) SUSCEPTIBILITY TESTING
                                         [ ESD, DEVICE, TESTING METHODS ]
                                         [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
INSISTOR
IT TECHNIQUES FOR REL. ASSESSMENT
                                         [ SEMICONDUCTOR TECH. ]
```

SECTION VI, PAGE 35

131

DOCUMENT-SEQUENCE NO.	TITLE	PAGES	
17516- 9 STUDY OF EFFECTS OF ELI AUTHOR(S): ZAJAC, H. COMPANY: TEKTRONIX	ECTRO-STATIC DISCHARGE ON SOLID-STATE DEVICES	[58	1
INDEX TERM TTL EOS/ESD INPUT PROTECTION METALLIZATION MELT ESD SUSCEPTIBILITY TESTING TRANSISTOR	CATEGORIES [BIPOLAR, COMPONENT TYPE] [SEMICONDUCTOR TECH.] [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI [ESD, DEVICE, FAILURE MODES] [ESD, DEVICE, TESTING METHODS] [DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE]	ON]	
17516- 8 IDENTIFICATION OF LATER AUTHOR(S): WALKER,R.C. COMPANY: IIT RESEARCH INSTITUTE		[54-57]
INDEX TERM EOS/ESD LATENT ESD FAILURE FAILURE MODES TESTING TOOLS & TECHNIQUES	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, FAILURE MODES] [FAILURE ANALYSIS, SEMICONDUCTOR TECH.] [SEMICONDUCTOR TECH.]		
17516- 7 GAS TUBE SURGE ARRESTER AUTHOR(S): BAZARIAN,A. COMPANY: GENERAL INSTRUMENT	RS FOR CONTROL OF TRANSIENT VOLTAGES	{44-53	}
INDEX TERM CIRCUIT PROTECTION DEVICES EOS/ESD INPUT PROTECTION STATIC CONTROL TRANSIENT SUPPRESSORS	CATEGORIES [NON-ELECTRONICS] [SEMICONDUCTOR TECH.] [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHN [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI	IQUES]	
17516- 6 PROTECTION LEVEL COMPARAUTHOR(S): HOPKINS, D.C. COMPANY: GENERAL ELECTRIC	RISONS FOR VOLTAGE TRANSIENT SUPPRESSORS (120 V, AC TYPE)	[35-43	1
INDEX TERM EOS/ESD INPUT PROTECTION EMI - ELECTROMAGNETIC INTERFACE TRANSIENT SUPPRESSORS DISCRETE SEMICONDUCTOR TEST TECHNIQUES FOR REL. ASSESSME	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI [ESD, EOS/ESD PHYSICS] [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI [SEMICONDUCTOR DEVICE] [SEMICONDUCTOR TECH.]	_	
17516- 5 TRANSIENT PROTECTION WI AUTHOR(S): PHILIPP, H.R. COMPANY: GENERAL ELECTRIC	TH ZNO VARISTORS: TECHNICAL CONSIDERATIONS LEVINSON, L.M.	[26-34	1
INDEX TERM EOS/ESD INPUT PROTECTION STATIC CONTROL TRANSIENT SUPPRESSORS DISCRETE SEMICONDUCTOR	CATEGORIES [SEMICONDUCTOR TECH.] [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI [ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHN [ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI [SEMICONDUCTOR DEVICE]	IQUES]	

```
DOCUMENT-SEQUENCE NO.
                                    TITLE
                                                                                                       PAGES
17516- 4 ELECTROSTATIC DISCHARGE (ESD) MONITOR DESIGN
                                                                                                     [23-25
\underline{AUTHOR(S)}: WU,C.
                                       PARADISE, E.D.
          : IBM CORPORATION
INDEX TERM
                                              CATEGORIES
                                              [ SEMICONDUCTOR TECH. ]
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ELECTROSTATIC CHARGE DETECTOR
ESD CONTROL PROGRAM
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
TESTING TOOLS & TECHNIQUES
                                              [ SEMICONDUCTOR TECH. ]
17516- 3 ESD DAMAGE FROM TRIBOELECTRICALLY CHARGED IC PINS
                                                                                                     [17-22
AUTHOR(S) : BOSSARD, P.R.
                                                                 UNGER, B.A.
                                       CHEMELLI.R.G.
COMPANY
          : BELL LABORATORIES
INDEX TERM
                                              CATEGORIES
                                              [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                              [ ESD, DEVICE, TESTING METHODS ]
CHARGE DEVICE MODEL
DIP TUBE
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                              [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
                                              [ ESD, EOS/ESD PHYSICS ]
TRIOBOELECTRIC CHARGING
WUNSCH BELL MODEL
                                              [ ESD, DEVICE, TESTING METHODS ]
FAILURE MODES
                                              [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
PKG LID OR COVER
                                              [ PACKAGE, SEMICONDUCTOR TECH. ]
TESTING TOOLS & TECHNIQUES
                                              [ SEMICONDUCTOR TECH. ]
17516- 2 THE EFFECTS OF HIGH HUMIDITY ENVIRONMENTS ON ELECTROSTATIC GENERATION AND
                                                                                                     [12-16
           DISCHARGE
AUTHOR(S) : CAIDERBANK, J.M.
                                       OVERBAY, D.E.
                                                                  SNYOER, H.Z.
          : E-SYSTEMS, INC.
INDEX TERM
                                              CATEGORIES
EOS/ESD
                                              [ SEMICONDUCTOR TECH. ]
                                              [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
DECAY TIME
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
[ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD CONTROL PROGRAM
RELATIVE HUMIDITY
FLOOR SURFACE
MOISTURE
                                              [ TEST STRESS ]
                                                TEST TECHNIQUES FOR REL. ASSESSMENT. SEMICONDUCTOR TECH. ]
ENVIRONMENTAL
TESTING TOOLS & TECHNIQUES
                                              [ SEMICONDUCTOR TECH. ]
17516- 1 PASSIVE STATIC PROTECTION: THEORY AND PRACTICE
                                                                                                     [1-11
                                                                                                                1
AUTHOR(S): BERBECO,G.R.
          : CHARLESWATERS PRODUCT, INC.
INDEX TERM
                                              CATEGORIES
EOS/ESD
                                              [ SEMICONDUCTOR TECH. ]
                                                ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
CONDUCTIVE FOAM
                                                ESD, MATERIALS AND EQUIPMENT, PROTECTIVE |
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
CONDUCTIVE ESD PROTECTIVE MATERIAL
GROUNDING METHODS
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ] [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTED ESD AREA
PROTECTIVE BAGS
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTIVE WORK BENCH SURFACE
                                              [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
STATIC CONTROL
ESD STD AND HANDBOOK
                                              [ ESD, STANDARDS, HANDBOOKS, MANUALS ]
SURFACE RESISTIVITY
                                                ESD, MATERIALS AND EQUIPMENT, TESTING ]
THEORY OF OPERATION
                                              [ SEMICONDUCTOR TECH. ]
```

GIN.	ONDEOCRAD SIDE OF THE BRO 1777		
DOCUMENT-SEQUENCE NO. TITLE		PAGES	
17515-30 THE ANALYSIS AND ELIMINATION	OF EOS INDUCED SECONDARY FAILURE MECHANISMS	[205-209	1
AUTHOR(S) : MADISON, J.A.		•	•
COMPANY : WESTINGHOUSE			
INDEX TERM	CATEGORIES		
BOARD	[LEVEL OF ASSEMBLY]		
DEVELOPMENT PROGRAM	[SEMICONDUCTOR TECH.]		
SECONDARY BREAKDOWN	[ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TE	CH.]	
EOS/ESD	[SEMICONDUCTOR TECH.]		
EOS - ELECTRICAL OVERSTRESS	[ESD, EOS/ESD PHYSICS]		
ESD SUSCEPTIBILITY TESTING	[ESD, DEVICE, TESTING METHODS]	_	
OVERSTRESS	[FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR	TECH. J	
FAILURE ANALYSIS RESULTS	[FAILURE ANALYSIS, SEMICONDUCTOR TECH.]		
GUIDE/PROCEDURE	[REFERENCE DOCUMENT]		
			,
	OF MILITARY SYSTEMS FOR HIGH-ALTITUDE EMP	[198-204	j
	ADRICK, F.J. MARTIN, L.C.		
COMPANY : LAWRENCE LIVERMORE NATIONA	L LABORATURY		
INDEX TERM	CATEGORIES		
APPLICATION FACTORS	DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH.]		
EOS/ESD	[SEMICONDUCTOR TECH.]		
EMP - ELECTROMAGNETIC PULSE	[ESD, EOS/ESD PHYSICS]		
ESD SUSCEPTIBILITY TESTING	[ESD, DEVICE, TESTING METHODS]		
FAILURE CAUSE	[FAILURE ANALYSIS, SEMICONDUCTOR TECH.]		
FAILURE ANALYSIS RESULTS	[FAILURE ANALYSIS, SEMICONDUCTOR TECH.]		
17515-28 ELECTROSTATIC DISCHARGE PROT	ECTION USING SILICON TRANSIENT SUPPRESSORS	[193-197	1
AUTHOR(S) : CLARK, O.M.			
COMPANY : GENERAL SEMICONDUCTOR INDU	STRIES		
INDEX TERM	CATEGORIES		
CIRCUIT PROTECTION DEVICES	[NON-ELECTRONICS]		
PROCESS DESIGN	[DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH.]		
EOS/ESD	[SEMICONDUCTOR TECH.]		
TRANSIENT SUPPRESSORS	[ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTI	ON]	
FUTURE TRENDS	[SEMICONDUCTOR TECH.]		
REFERENCE DOCUMENT			
	ESISTANT BIPOLAR TRANSISTOR DESIGN AND ITS	[188-192)
APPLICATIONS TO LINEAR INTEG			
AUTHOR(S): MINEAR,R.L. DO COMPANY: BELL LABORATORIES	DSON,G.A.		
CONFANT : BELL EMBORATORIES			
INDEX TERM	CATEGORIES		
GEOMETRIES/LAYOUT	[DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH.]		
EOS/ESD	[SEMICONDUCTOR TECH.]		
ESD SUSCEPTIBILITY TESTING	[ESD, DEVICE, TESTING METHODS]		
OVERSTRESS	[FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR	TECH.]	
REFERENCE DOCUMENT	DICORPOR CONTROVED CONTROVED DOUGHOUS DOUGHO	i	
TRANSISTOR MICROCIRCUIT	[DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE] [SEMICONDUCTOR DEVICE]		
TESTING TOOLS & TECHNIQUES	SEMICONDUCTOR TECH.]		
	/ Amingamadian yanni 1		

```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                               PAGES
17515-26 ELECTRICAL OVERSTRESS VERSUS DEVICE GEOMETRY
                                                                                             [183-187]
AUTHOR(S) : PETRIZIO, C.J.
COMPANY
         : RCA
INDEX TERM
                                           CATEGORIES
CIRCUIT PROTECTION DEVICES
                                           [ NON-ELECTRONICS ]
GEOMETRIES/LAYOUT
                                           [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                            SEMICONDUCTOR TECH. ]
EOS/ESD
INPUT PROTECTION
                                           [ ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
FABRICATION PROCESSES & TECHNIQUES
                                           [ SEMICONDUCTOR TECH. ]
GUIDE/PROCEDURE
                                           [ REFERENCE DOCUMENT ]
TESTING TOOLS & TECHNIQUES
                                           [ SEMICONDUCTOR TECH. ]
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST SPECIFICATION
17515-25 THE DIELECTRIC STRENGTH OF SIO2 IN A CMOS TRANSISTOR STRUCTURE
                                                                                             [176-182]
AUTHOR(S) : SODEN, J.M.
COMPANY
         : SANDIA LABORATORIES
                                          CATEGORIES
INDEX TERM
                                            SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ ESD, DEVICE, FAILURE MODES ]
DIELECTRIC BREAKDOWN
                                           [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
FAILURE MODES
                                            FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FABRICATION PROCESSES & TECHNIQUES
                                           [ SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
                                          [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
TRANSISTOR
17515-24 SUSCEPTIBILITY OF LSI NOS TO ELECTROSTATIC DISCHARGE AT ELEVATED TEMPERATURE
                                                                                             [168-175]
\underline{\text{AUTHOR}(S)}: TENG,T.
                                    HART, A.R.
                                                            MCKENNA,A.
COMPANY
        : HEWLETT PACKARD
INDEX TERM
                                          CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
METALLIZATION MELT
                                           [ ESD, DEVICE, FAILURE MODES ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE ANALYSIS RESULTS
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
MATHEMATICAL ANALYSIS
GUIDE/PROCEDURE
                                           [ REFERENCE DOCUMENT ]
DIGITAL LSI
                                           [ MICROCIRCUIT, SEMICONDUCTOR DEVICE ]
STEP STRESS
                                           [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17515-23 DAMAGE RESPONSE OF SELECTED INTERFACE INTEGRATED CIRCUITS TO A SIMULATED EMP
                                                                                             [158-167]
AUTHOR(S) : FORMANEK, V.C.
COMPANY
         : IIT RESEARCH INSTITUTE
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, EOS/ESD PHYSICS ]
EMP - ELECTROMAGNETIC PULSE
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
FAILURE ANALYSIS RESULTS
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REPERENCE DOCUMENT
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                          [ SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                 PAGES
17515-22 MICROWAVE NANOSECOND PULSE BURNOUT PROPERTIES OF ONE MICRON MESFETS
                                                                                               [147-157]
AUTHOR(S): WHALEN, J. J.
COMPANY: SUNY AT BUFFALO
                                     THORN, M.L.
                                                             RASTEFANO, E.
                                           CATEGORIES
INDEX TERM
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, DEVICE, FAILURE MODES ]
[ ESD, DEVICE, TESTING METHODS ]
METALLIZATION MELT
ESD SUSCEPTIBILITY TESTING
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                           [ FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
FAILURE MODES
FIELD EFFECT, (FET)
                                           [ SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
TESTING TOOLS & TECHNIQUES
                                          [ SEMICONDUCTOR TECH. ]
17515-21 SQUARE PULSE AND RF PULSE OVERSTRESSING OF UHF TRANSISTORS
                                                                                               [140-146]
AUTHOR(S): WHALEN, J. J.
                                     DOMINGOS, H.
         : SUNY AT BUFFALO
COMPANY
INDEX TERM
                                           CATEGORIES
                                           [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                           [ ESD, EOS/ESD PHYSICS ]
EMP - ELECTROMAGNETIC PULSE
                                           [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
GUIDE/PROCEDURE
                                           [ REFERENCE DOCUMENT ]
                                           [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
TRANSISTOR
                                           [ SEMICONDUCTOR TECH. ]
TESTING TOOLS & TECHNIQUES
17515-20 MODELING OF ELECTRICAL OVERSTRESS IN SILICON DEVICES
                                                                                               [133-139]
AUTHOR(S) : KUSENEZOV, N.
                                     SMITH,J.S.
COMPANY
         : LOCKHEED
                                           CATEGORIES
INDEX TERM
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
DIELECTRIC BREAKDOWN
                                           [ ESD, DEVICE, FAILURE MODES ]
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                           [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
COMPUTERIZED TECH
MODELS/THEORY/EQUATIONS
                                           [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
SEMICONDUCTOR DEVICE
17515-19 AN ELECTROTHERMAL MODEL FOR CURRENT FILAMENTATION IN SECOND BREAKDOWN OF
                                                                                               [126-132]
          SILICON-ON-SAPPHIRE DIODES
AUTHOR(S) : BARUAH,A.
                                     BUDENSTEIN, P.P.
COMPANY
         : AUBURN UNIVERSITY
COMPUTERIZED ANALYSIS
                                            DESIGN TOOLS & TECHNIQUES, SEMICONDUCTOR TECH.
SECONDARY BREAKDOWN
                                           [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                             SEMICONDUCTOR TECH. ]
EOS/ESD
DECAY TIME
                                            [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
MATHEMATICAL ANALYSIS
GUIDE/PROCEDURE
                                           [ REFERENCE DOCUMENT ]
COMPUTERIZED TECH
                                           [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
                                           [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
DIODE
```

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                   PAGES
17515-18 HUMAN FACTORS IN ELECTROSTATIC DISCHARGE PROTECTION
                                                                                                 [122-125]
AUTHOR(S) : SCHNETKER, T.R.
COMPANY
         : GOULD
INDEX TERM
                                            CATEGORIES
APPLICATION FACTORS
                                            DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                            [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
CONDUCTIVE ESD PROTECTIVE MATERIAL
INPUT PROTECTION
                                              ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
STATIC CONTROL
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
                                              APPLICATION ENVIRONMENT ]
HELICOPTOR
                                              REFERENCE DOCUMENT ]
GUIDE/PROCEDURE
                                            [ USER OF REL. PREDICTION MODELS ]
PROCUREMENT CONTROLS
                                            [ SEMICONDUCTOR TECH. ]
TEST TECHNIQUES FOR REL. ASSESSMENT
17515-17 REVERSE-BIAS SECOND BREAKDOWN IN POWER TRANSISTORS
                                                                                                 [116-121 ]
AUTHOR(S) : BLACKBURN, D.L.
                                      BERNING, D.W.
          : NATIONAL BUREAU OF STANDARDS (NBS)
                                            CATEGORIES
INDEX TERM
SECONDARY BREAKDOWN
                                            [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                              SEMICONDUCTOR TECH. ]
EOS/ESD
                                              ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
THERMAL SECONDARY BREAKDOWN
                                              ESD, DEVICE, FAILURE MODES ]
                                              DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
TRANSISTOR
TEST TECHNIQUES FOR REL. ASSESSMENT
                                            [ SEMICONDUCTOR TECH. ]
17515-16 DOPING PROFILES AND SECOND. BREAKDOWN
                                                                                                 [109-115 ]
AUTHOR(S) : WARD, A.L.
COMPANY
         : HARRY DIAMOND LAB (HDL)
INDEX TERM
                                            CATEGORIES
SECONDARY BREAKDOWN
                                             [ ELECTRICAL FAILURE PHENOMENA, SEMICONDUCTOR TECH. ]
                                              SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ ESD, DEVICE, TESTING METHODS ]
[ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
ESD SUSCEPTIBILITY TESTING
COMPUTERIZED TECH
GRAPHICAL TECHNIQUES
                                            [ REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
DIODE
                                              DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
EVALUATION TEST
                                             [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17515-15 ESD SUSCEPTIBILITIES OF HIGH PERFORMANCE ANALOG INTEGRATED CIRCUITS
                                                                                                 [104-108]
AUTHOR(S) : MOON, M.G.
COMPANY
          : HARRIS
                                            CATEGORIES
INDEX TERM
DESIGN FOR TESTABILITY
                                            [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                             [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                            [ ESD, DEVICE, FAILURE MODES ]
[ ESD, DEVICE, TESTING METHODS ]
[ ESD, DEVICE, TESTING METHODS ]
DIELECTRIC BREAKDOWN
HUMAN BODY ESD MODEL
ESD SUSCEPTIBILITY TESTING
                                             [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
MICROCIRCUIT
                                            [ SEMICONDUCTOR DEVICE ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                            [ SEMICONDUCTOR TECH. ]
```

```
DOCUMENT-SEQUENCE NO.
                                  TITLE
                                                                                                  PAGES
17515-14 ELECTROSTATIC FAILURE OF X-BAND SILICON SCHOTTKY BARRIER DIODES
                                                                                                [97-103]
\underline{AUTHOR(S)}: ANAND,Y.
COMPANY
         : MICROWAVE ASSOCIATES, INC.
                                            CATEGORIES.
EOS/ESD
                                            SEMICONDUCTOR TECH.
                                            [ ESD, DEVICE, FAILURE MODES ]
[ ESD, DEVICE, TESTING METHODS ]
METALLIZATION MELT
ESD SUSCEPTIBILITY TESTING
OVERSTRESS
                                            [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
DIODE
                                            [ DISCRETE SEMICONDUCTOR, SEMICONDUCTOR DEVICE ]
CHARACTERIZATION
                                            [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17515-13 FAILURE ANALYSIS OF MICROCIRCUITS SUBJECTED TO ELECTRICAL OVERSTRESS
                                                                                                [88-96
                                                                                                          1
AUTHOR(S) : UETSUKI,T.
                                     MITANI,S.
COMPANY
         : HITACHI
INDEX TERM
DESIGN FOR TESTABILITY
                                            [ DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
                                              SEMICONDUCTOR TECH. ]
EOS/ESD
INPUT PROTECTION
                                              ESD, DEVICE, PROTECTIVE DEVICES/INPUT PROTECTION ]
EOS - ELECTRICAL OVERSTRESS
                                              ESD, EOS/ESD PHYSICS ]
WUNSCH BELL MODEL
                                              ESD, DEVICE, TESTING METHODS ]
OVERSTRESS
                                              FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
CHART/DIAGRAM
                                              REFERENCE DOCUMENT ]
FMEA/FMECA, (FAILURE MODE EFFECTS)
                                              REL. MODELING TECHNIQUES, REL. MODELS/DATA/ANALYSIS ]
                                              SEMICONDUCTOR DEVICE ]
MICROCIRCUIT
TEST TECHNIQUES FOR REL. ASSESSMENT
                                            [ SEMICONDUCTOR TECH. ]
17515-12 DYNAMIC WAVEFORM CHARACTERISTICS OF PERSONNEL ELECTROSTATIC DISCHARGE
                                                                                                [78-87
\underline{AUTHOR(S)}: KING, M.W.
COMPANY
          : CONSULTANT
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                             SEMICONDUCTOR TECH. ]
EMP - ELECTROMAGNETIC PULSE
                                              ESD, EOS/ESD PHYSICS ]
                                             ESD, DEVICE, TESTING METHODS ]
FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
ESD SUSCEPTIBILITY TESTING
OVERSTRESS
                                              SEMICONDUCTOR TECH. ]
FABRICATION PROCESSES & TECHNIQUES
NOTICE/BULLETIN
                                              REFERENCE DOCUMENT ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                            [ SEMICONDUCTOR TECH. ]
17515-11 EFFECTS OF ELECTRICAL OVERSTRESS ON DIGITAL BIPOLAR MICROCIRCUITS AND ANALYSIS
                                                                                                164-77
          TECHNIQUES FOR FAILURE SITE LOCATION
AUTHOR(S) : RUTHERFORD, D.H.
                                     PERKINS, J.F.
COMPANY
         : RAYTHEON
INDEX TERM
                                            CATEGORIES
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
METALLIZATION MELT
                                              ESD, DEVICE, FAILURE MODES ]
                                              ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
OVERSTRESS
                                            [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
DIGITAL LSI
                                             MICROCIRCUIT, SEMICONDUCTOR DEVICE ]
                                            [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
SCREENING
```

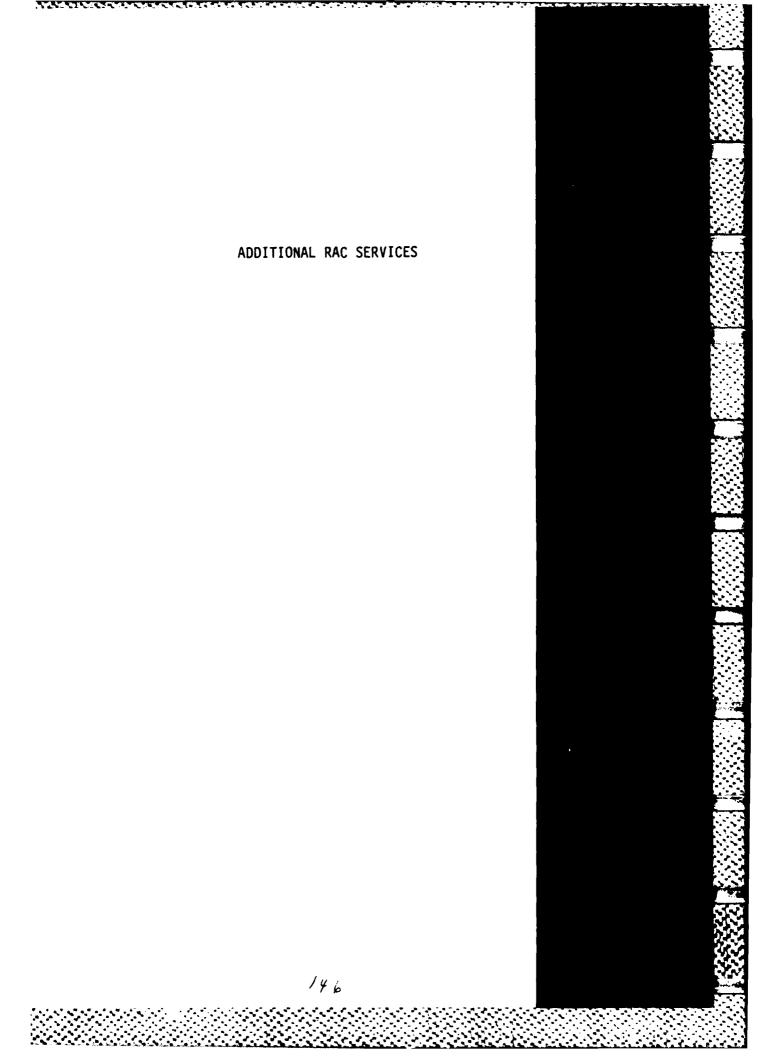
```
DOCUMENT-SEQUENCE NO.
                                 TITLE
                                                                                               PAGES
17515-10 ELECTRO-STATIC DISCHARGE AND CMOS LOGIC
                                                                                             [55-63
AUTHOR(S) : BRANBERG,G.
         : HEWLETT PACKARD
COMPANY
INDEX TERM
                                          CATEGORIES
                                          I SEMICONDUCTOR TECH. )
EOS/ESD
LATENT ESD FAILURE
                                           [ ESD, DEVICE, FAILURE MODES ]
                                           [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
OVERSTRESS
                                           [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
MICROCIRCUIT
                                           [ SEMICONDUCTOR DEVICE ]
                                            STATISTICAL ANALYSIS ]
WEIBULL
TEST TECHNIQUES FOR REL. ASSESSMENT
                                           [ SEMICONDUCTOR TECH. ]
17515- 9 THE DEFICIENCIES IN MILITARY SPECIFICATION MIL-B-81705: CONSIDERATIONS AND A
                                                                                             145-54
          SIMPLE MODEL FOR STATIC PROTECTION
AUTHOR(S) : YENNI, D.M.
                                    HUNTSMAN, J.R.
COMPANY
          : 3M
                                          CATEGORIES
INDEX TERM
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
                                           [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
BULK CONDUCTIVE PLASTIC
CONDUCTIVE ESD PROTECTIVE MATERIAL
                                            ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ELECTROSTATIC SHIELD
                                           [ ESD, EOS/ESD PHYSICS ]
                                           [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD PROTECTIVE MATERIAL
                                            ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTIVE BAGS
ESD STD AND HANDBOOK
                                            ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
                                           [ ESD, EOS/ESD PHYSICS ]
TRIOBOELECTRIC CHARGING
PROCESS CONTROL/SPECIFICATION
                                           [ FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECH. ]
SPECIFICATION/STANDARD
                                           [ REFERENCE DOCUMENT ]
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
TEST SPECIFICATION
17515- 8 RELIABILITY OF EOS SCREENED GOLD DOPED 4002 CMOS DEVICES
                                                                                              [41-44
                                                                                                       1
AUTHOR(S) : MC CULLOUGH, D.T.
                                    LANE, C.H.
                                                             BLORE, R.A.
COMPANY
         : ROME AIR DEVELOPMENT CENTER (RADC)
INDEX TERM
                                           CATEGORIES
EOS/ESD
                                           [ SEMICONDUCTOR TECH. ]
ESD STD AND HANDBOOK
                                            ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD SUSCEPTIBILITY TESTING
                                           [ ESD, DEVICE, TESTING METHODS ]
OVERSTRESS
                                            FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
                                            USER OF REL. PREDICTION MODELS ]
PROCUREMENT CONTROLS
DIGITAL LSI
                                            MICROCIRCUIT. SEMICONDUCTOR DEVICE 1
SCREENING
                                           [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17515- 7 MODULE ELECTROSTATIC DISCHARGE SIMULATOR
                                                                                              136-40
                                                                                                        1
AUTHOR(S) : MADZY, T.M.
                                    PRICE, L.A.
         : IBM CORPORATION
COMPANY
INDEX TERM
                                           CATEGORIES
                                           [ COMPONENT TYPE ]
BIPOLAR
EOS/ESD
                                            SEMICONDUCTOR TECH. ]
ELECTROSTATIC SIMULATOR
                                            ESD, DEVICE, TESTING METHODS ]
HUMAN BODY ESD MODEL
                                            ESD, DEVICE, TESTING METHODS ]
                                            FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
OVERSTRESS
                                            FABRICATION PROCESSES & TECHNIQES, SEMICONDUCTOR TECH. ]
PABRICATION EQUIPMENT
FIELD EFFECT, (FET)
                                            SEMICONDUCTOR TECH. ]
                                            SEMICONDUCTOR TECH. ]
FUTURE TRENDS
TEST PROGRAM DEVELOPMENT
                                           [ TESTING TOOLS & TECHNIQUES, SEMICONDUCTOR TECH. ]
```

SECTION VI, PAGE 43

143

```
DOCUMENT-SEQUENCE NO.
                                   TITLE
                                                                                                   PAGES
17515- 6 PROPOSED MIL-STD AND MIL-HDBK FOR AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM -
                                                                                                 [27-35
          BACKGROUND AND STATUS
AUTHOR(S) : MC MAHON, E.J.
                                      BHAR, T.N.
                                                               OISHI,T.
COMPANY
         : RELIABILITY SCIENCES, INC.
INDEX TERM
DESIGN CONSIDERATIONS
                                            CATEGORIES
                                             [ SEMICONDUCTOR TECH. ]
EOS/ESD
                                             [ SEMICONDUCTOR TECH. ]
ESD PROTECTIVE MATERIAL
                                             [ ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD CONTROL PROGRAM
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ] ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
PROTECTED ESD AREA
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
STATIC CONTROL
                                              ESD, STANDARDS, HANDBOOKS, MANUALS ]
ESD STD AND HANDBOOK
ESD SUSCEPTIBILITY TESTING
                                              ESD, DEVICE, TESTING METHODS ]
OVERSTRESS
                                             [ FAILURE CAUSE, FAILURE ANALYSIS, SEMICONDUCTOR TECH. ]
PROCESS CONTROL/SPECIFICATION
                                             [ FABRICATION PROCESSES & TECHNIQUES, SEMICONDUCTOR TECH. ]
SPECIFICATION/STANDARD
                                             [ REFERENCE DOCUMENT ]
REL. STANDARDS
                                             [ USER OF REL. PREDICTION MODELS ]
SEMICONDUCTOR DEVICE
17515- 5 THE GENERATION OF ELECTROSTATIC CHARGES IN SILICONE ENCAPSULANTS DURING CYCLIC
                                                                                                 [22-26
          GASEOUS PRESSURE TESTS
AUTHOR(S) : DERMARDEROSIAN,A.
                                      RIDEOUT, L.
COMPANY
          : RAYTHEON
INDEX TERM
                                             CATEGORIES
TRADE-OFFS
                                             DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                              SEMICONDUCTOR TECH. ]
ELECTROSTATIC SIMULATOR
                                             [ ESD, DEVICE, TESTING METHODS ]
ESD SUSCEPTIBILITY TESTING
                                             [ ESD, DEVICE, TESTING METHODS ]
TRIOBOELECTRIC CHARGING
                                             [ ESD, EOS/ESD PHYSICS ]
PKG ENCAPSULANT
                                             [ PACKAGE, SEMICONDUCTOR TECH. ]
REFERENCE DOCUMENT
ENVIRONMENTAL
                                             [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
17515- 4 STATIC CONTROL USING TOPICAL ANTISTATS
                                                                                                  [13-21
                                                                                                            1
AUTHOR(S) : HALPERIN,S.A.
         : ANALYTICAL CHEMICAL LABORATORY
INDEX TERM
                                             CATEGORIES
APPLICATION FACTORS
                                             DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
EOS/ESD
                                              SEMICONDUCTOR TECH. ]
                                              ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
DECAY TIME
RELATIVE HUMIDITY
                                              ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
TOPICAL ANTISTATS
                                              ESD, EOS/ESD PHYSICS ]
TRIOBOELECTRIC CHARGING
GUIDE/PROCEDURE
                                              REFERENCE DOCUMENT ]
TEST TECHNIQUES FOR REL. ASSESSMENT
                                              SEMICONDUCTOR TECH. ]
                                             [ TEST TECHNIQUES FOR REL. ASSESSMENT, SEMICONDUCTOR TECH. ]
EVALUATION TEST
```

```
DOCUMENT-SEQUENCE NO.
                                     TITLE
                                                                                                         PAGES
17515- 3 ELECTROSTATIC CONDUCTIVITY CHARACTERISTICS OF WORKBENCH-TOP SURFACE MATERIALS
                                                                                                       [7-12
AUTHOR(S) : BRIGGS,C.
          : CHARLES STARK DRAPER LABORATORIES
COMPANY
INDEX TERM
                                               CATEGORIES
                                               DESIGN CONSIDERATIONS, SEMICONDUCTOR TECH. ]
MATERIALS
EOS/ESD
                                                 SEMICONDUCTOR TECH. ]
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
CONDUCTIVE ESD PROTECTIVE MATERIAL
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
GROUNDING METHODS
                                                 ESD, MATERIALS AND EQUIPMENT, TESTING ]
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD PROTECTIVE MATERIAL
PROTECTED ESD AREA
PROTECTIVE WORK BENCH SURFACE
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ] ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
RELATIVE HUMIDITY
TOPICAL ANTISTATS
FABRICATION PROCESSES & TECHNIQUES
                                                 SEMICONDUCTOR TECH. ]
GUIDE/PROCEDURE
                                               [ REFERENCE DOCUMENT ]
17515- 2 CONTROLLING ELECTROSTATIC PROBLEMS IN THE FABRICATION AND HANDLING OF SPACECRAFT [4-6
           HARDWARE
AUTHOR(S) : STORM,D.C.
          : AEROSPACE CORPORATION
COMPANY
INDEX TERM
                                               CATEGORIES
DESIGN CONSIDERATIONS
                                                 SEMICONDUCTOR TECH. ]
EOS/ESD
                                               [ SEMICONDUCTOR TECH. ]
AIR IONIZER
                                                [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ] ESD, MATERIALS AND EQUIPMENT, TESTING ]
GROUNDING STRAPS
ESD PROTECTIVE MATERIAL
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
ESD CONTROL PROGRAM
PROTECTED ESD AREA
SENSITIVE ELECTRONIC DEVICE SYMBOLS
WRIST STRAP
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE ]
FUTURE TRENDS
                                                 SEMICONDUCTOR TECH. ]
                                                 REFERENCE DOCUMENT ]
GUIDE/PROCEDURE
SPACE
                                               [ APPLICATION ENVIRONMENT ]
17515- 1 AN EFFECTIVE ESD AWARENESS TRAINING PROGRAM
                                                                                                       [1-3
                                                                                                                  1
AUTHOR(S) : MCATEER,O.J.
COMPANY
          : WESTINGHOUSE
INDEX TERM
                                               CATEGORIES
DEVELOPMENT PROGRAM
                                               SEMICONDUCTOR TECH. ]
                                                 SEMICONDUCTOR TECH. ]
EOS/ESD
                                                 ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
ESD CONTROL PROGRAM
STATIC CONTROL
                                               [ ESD, MATERIALS AND EQUIPMENT, PROTECTIVE TECHNIQUES ]
GUIDE/PROCEDURE
                                                 REFERENCE DOCUMENT ]
                                                 USER OF REL. PREDICTION MODELS }
RELIABILITY MANAGEMENT TECH
TEST TECHNIQUES FOR REL. ASSESSMENT
                                               [ SEMICONDUCTOR TECH. ]
```



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