Acronyms

AC	Autoclave	COB	Chip on Board
ACA	Aniosotropic Conductive Adhesive	COF	Chip on Flex
ACES	Applied Computational	COGS	Cost of Goods Sold
ACLS	Electromagnetics Society	COTS	Commercial Off The Shelf
AEM	Aircraft Equipment Monitor	Cpk	Process Capability Index
AF	Acceleration Factor	CPLD	Complex Programmable Logic Device
AIAA	American Institute of Aeronautics and	CR	Contact Resistance
AIAA	Astronautics	CRT	Cathode Ray Tube
ALT	Accelerated Life Test	CSAM	C-mode Scanning Acoustic Microscopy
AMLCD	Active Matrix Liquid Crystal Display	CSAWI	Chip Scale Package
ANSI	American National Standards Institute	CTE	Coefficient of Thermal Expansion
AOQ	Average Outgoing Quality	DBC	Direct Bond Copper
AOQL		DBGA	Dimple Ball Grid Array
APQ	Actual Outgoing Quality Level Accelerated Product Qualification	DBGA	Direct Broadcast Satellite
ARAC		DB3 DBTF	Design-Build-Test-Fix
AKAC	Aviation Rulemaking Advisory Committee	DB1F DFR™	
ARP			Design for Reliability
	Agricultural Specific Literatural Circuit	DIP	Dual In-line Package
ASIC	Application Specific Integrated Circuit	DL	Design Life
ASSC	Application Specific Standard Component	DMSMS	Diminishing Manufacturing Sources and Material Shortages
ASSP	Application Specific Standard Product	DOE	Design of Experiment
AST	Accelerated Stress Test	DOF	Degrees of Freedom
ATC	Accelerated Thermal Cycling	DRAM	Dynamic Random Access Memory
AWG	IECQ Avionics Working Group	DSCC	Defense Supply Center Columbus
a-Si	Amorphous Silicon	DUT	Device Under Test
BEM	Boundary Element Method	DWV	Dielectric Withstanding Voltage
BGA	Ball Grid Array	ECL	Emitter-Coupled Logic
BME	Base Metal Electrode	ECM	Electrochemical Migration
BT	Bismaleimide Triazine	ECMP	Electronic Component Management
BV	Breakdown Voltage		Plan
CA	Contract Assembly or Contract	EDA	Electronic Design Automation
	Assembler	EDRAM	Embedded Dynamic Random Access
CAGR	Compound Annual Growth Rate		Memory
CALCE®	Center for Advanced Life Cycle	EDS	Electron Disruptive Spectroscopy
	Engineering	EEPLD	Electrically Erasable Programmable
CB	Citizens Band		Logic Device
CBGA	Ceramic Ball Grid Array	EFIS	Electronic Flight Instrumentation
CCA	Circuit Card Assembly		System
CCD	Charge Coupled Device	EIA	Electronic Industry Association
CCGA	Ceramic Column Grid Array	ELD	Electroluminiscent Displays
CDM	Charged Device Model	EMC	Electromagnetic Compatibility
CECC	Cenelec Electronic Components	EMC	Encapsulated Molding Compound
	Committee	EMCS	Electromagnetic Compatibility Society
CFEM	Conventional Finite Element Method	EMI	Electromagnetic Interference
CFF	Conductive Filament Formation	EMS	Electronic Manufacturing Services
CL	Confidence Level	EN	Euro Norms (European Standards)
CLPT	Classical Laminated Plate Theory	EOL	End of Life
CM	Contract Manufacturing or Contract	EP	Energy Partitioning
	Manufacturer	EPLD	Erasable Programmable Logic Device
CMM	Component Maintenance Manual	EPSC	Electronics Products and Systems
CMOS	Complementary Metal Oxide		Center/Consortium
	Semiconductor	ESD	Electrostatic Discharge
			\mathcal{E}

ECEM	For incommental Committee Florida	IEC	Leterational Floring deal
ESEM	Environmental Scanning Electron	IEC	International Electrotechnical
EGD	Microscope	TEGO	Commission
ESR	Equivalent Series Resistance	IECQ	International Electrotechnical
ESS	Environmental Stress Screening		Commission Quality Assessment
EU	European Union		System for Electronic Components
FAA	Federal Aviation Agency	IEEE	Institute of Electrical and Electronic
FADEC	Full Authority Digital Engine Control		Engineers
FAR	Federal Aviation Regulations	IFE	In-Flight Entertainment
FBGA	Fine pitch ball grid array	IGBT	Integrated Gate Bipolar Transistor
FCC	Federal Communications Commission	IMA	Integrated Modular Avionics
FCOB	Flip Chip On Board	IP	Intellectual Property
FCOC	Flip Chip On Ceramic	IPC	Institute for Interconnecting and
FCOF	Flip Chip on Flex		Packaging Electronic Circuit
FDTD	Finite Difference Time Domain	IPD	Integrated Passive Devices
FEA	Finite Element Analysis	IR	Infra Red/Insulation Resistance
FED	Field Emission Displays	IRC	International Resistive Company
FEM	Finite Element Method	Isat	Saturation Current
FET	Field Effect Transistor	ITO	Indium tin oxide
FFF	Form Fit and Function	JAN	Joint Army Navy
FFOP	Failure-Free Operating Period	JAR	Joint Aviation Regulation
FMEA	Failure Mode and Effect Analysis	JEDEC	Joint Electron Device Engineering
FMECA	Failure Mode Effect and Criticality	VEDEC	Council
TWILCH	Analysis	LCA	Logic Cell Array
FPGA	Field Programmable Gate Array	LCCC	Leadless Ceramic Chip Carrier
FRACAS	Failure Reporting, Analysis and	LC	Liquid Crystal
TRACAS	Corrective Action System	LCD	Liquid Crystal Liquid Crystal Display
FSDT	First-order Shear Deformable Theory	LCM	Life Consumption Monitoring
FTA	Fault Tree Analysis	LGA	Land Grid Array
GA	Gate Array	LIF	Low Insertion Force
GAL	Generic Array Logic/Lattice	LIGA	Acronym from German words for
GEM	Generalized Emulation of Microcircuits	7.7.6	lithography, electroplating, and molding
GIDEP	Government Industry Data Exchange	LM	Life Margin
	Program	LOT	Life of Type
GPC	Government Procurement Committee	LPCC	Leadless Plastic Chip Carrier
GPWS	Ground Proximity Warning System	LRM	Line Replaceable Module
HALT	Highly Accelerated Life Test	LRU	Line Replaceable Unit
HASS	Highly Accelerated Stress Screening	LSI	Large Scale Integration
HAST	Highly Accelerated Stress Test	LTB	Last Time Buy
HBM	Human Body Model	LTOL	Low Temperature Operating Life
HDL	Hardware Description Language	LVCES	Low Volume Complex Electronic
HDTV	High Definition Television		System
HM	Health Monitoring	LVT	Low Voltage (BiCMOS) Technology
HSDT	Higher-order Shear Deformable Theory	LWDT	Layer-Wise Deformable Theory
HSOP	Small Outline Package with a Heat Sink	MAX	Multiple Array Matrix
HTCC	High Temperature Cofired Ceramic	MBGA	Metal Ball Grid Array
HTOL	High Temperature Operation Life	MCM	Multi-Chip Module
HTRB	High Temperature Reverse Bias	MDRR	Multi-Domain Rayleigh Ritz
HTS	High Temperature Storage	MDSDT	Material Dependent Shear Deformable
HTTP	Hyper - Text Transfer Protocol		Theory
I/O	Input/Output	MEMS	MicroElectroMechanical Systems
IC IC	Integrated Circuit	MFG	Mixed Flowing Gases
IDDQ	Quiescent Current	MFOP	Maintenance Free Operating Period
IDSA	Incremental Damage Superposition	MLCC	Multilayer Ceramic Capacitor
IDSA	Approach	MLD	Minimum Life Desired
IDT		MM	Machine Model
ועו	Integrated Device Technology		
		MMC	Metal Matrix Composite

Mn	Metal level number n	PWA	Printed Wiring Assembly
MOCA	Mitigation of Obsolescence Cost	PWB	Printed Wiring Board
	Analysis	PZT	Lead Zirconate Titanate
MoL	Method of Lines	QFP	Quad Flat Pack
MoM	Method of Moments	QML	Qualified Manufacturer List
MOS	Metal Oxide Semiconductor	QPL	Qualified Part List
MOSFET	Metal Oxide Semiconductor Field Effect	QRD	Quality Reliability Durability
	Transistor	RDF	Range Distribution Function
MRP	Maintenance Recovery Period	RDSON	Drain to Source On Resistance
MSL	Moisture Sensitivity Level	RET	Reliability Enhancement Test
MTBF	Mean Time Between Failures	RF	Radio Frequency
MTBUR	Mean Time Between Unscheduled	RFI	Radio Frequency Interference
	Removals	RH	Relative Humidity
MTTF	Mean Time to Failure	RMS	Root mean square
NCMS	National Center for Manufacturing	ROI	Return On Investment
	Sciences	RT	Room Temperature
NEC	Numerical Electromagnetic Code	S&A	Safety and Arming
NEMI	National Electronics Manufacturing	SAC	Tin Silver Copper (SnAgCu)
	Initiative Inc.	SAE	Society of Automotive Engineers
NEMP	Nuclear Electromagnetic Pulse	SAM	Scanning Acoustic Microscope
NFEM	Nested Finite Element Method	$SARA^{\otimes}$	Simulation Assisted Reliability
NFF	No Fault Found		Assessment
NIF	Normal Insertion Force	SBGA	Super Ball Grid Array
NRE	Non-Recurring Engineering	SC	Standard Cell
NSWC	Naval Surface Warfare Center	SCMOS:	Scalable Complementary Metal Oxide
OEM	Original Equipment Manufacturer		Semiconductor
OLED	Organic Light Emitting Diodes	SDA	Spectral Domain Approach
OOR	Ordered Overall Range	SDDV	Stress-Driven Diffusive Voiding
PAL	Programmable Array Logic	SDU	Shop Discardable Unit
PASIC	Programmable Application Specific	SE	Shielding Effectiveness
	Integrated Circuit	SEM	Scanning Electron Microscope
PBGA	Plastic Ball Grid Array	SI	Signal Integrity
PBT	Parasitic Bipolar Transistor	SIA	Semiconductor Industry Association
PC	Pre-Conditioning	SILC:	Stress Induced Leakage Current
PC FAB	Printed Circuit Fabrication	SM	Surface Mount
PCB	Printed Circuit Board	SMD	Standard Microcircuit Drawing
PCM	Phase Change Material	SMT	Surface Mount Technology
PCN	Product Change Notice	SOC	System-On-Chip
PDI	Precision Devices Incorporated	SOIC	Small Outline Integrated Circuit
PDN	Product Discontinuance Notice	SOP	System-On-Package / Small Outline
PDP	Plasma Displays Panel		Package
PEEC	Partial Element Equivalent Circuit	SOWIC	Small Outline Wide Integrated Circuit
PFC	Primary Flight Control	SPC	Statistical Process Control
PGA	Pin Grid Array	SPICE	Simulation Program with Integrated
PHM	Prognostic Health Monitoring		Circuit Emphasis
PLA	Programmable Logic Array	SPLD	Simple Programmable Logic Device
PLCC	Plastic Leaded Chip Carrier	SRAM	Static Random Access Memory
PoF	Physics of Failure	SRU	Shop Replaceable Unit
PoP	Package on Package	SUBM	Submicron
POS	Proof of Screen	TAB	Tape Automated Bonding
PPM	Parts Per Million	TBGA	Tape Ball Grid Array
PQFP	Plastic Quad Flat Pack	TC	Temperature Cycle
PSD	Power Spectral Density	TCAS	Traffic-alert Collision Avoidance
PT	Punch Through		System
PTH	Plated-Through Hole	TCTF	Time-, Cycles- to Failure
PTV	Plated-Through Via	TDDB	Time-Dependent Dielectric Breakdown
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TEM Transverse Electromagnetic

TFT Thin film transistor

Tg Glass Transition Temperature

TH Through Hole

THB Temperature, Humidity and Bias

TI Transfer Impedance
TLM Transmission Line Matrix

TMM Thermo-Mechanical Microstructural

TS Thermal Shock

TSMC: Taiwan Semiconductor Manufacturing

Corporation

TTF Time to Failure

TTL Transistor-Transistor Logic UBGA Micro Ball Grid Array

UV Ultraviolet

VCO Voltage Controlled Oscillator

VDCEP Volume Driven Commercial Electronic

Product

VHDL VHSIC Hardware Description Language

VHSIC Very High-Speed IC

VLSI Very Large Scale Integration

VQ Virtual Qualification Vt Threshold Voltage

WEEE Waste from Electrical and Electronic

Equipment

WLP Wafer Level Package xPyM x Polysilicon and y Metal ZIF Zero Insertion Force