

JEDEC STANDARD

Requirements for Handling Electrostatic-Discharge-Sensitive (ESDS) Devices

JESD625B

(Revision of JESD625A, December 1999)

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JEDEC SOLID STATE TECHNOLOGY ASSOCIATION



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REQUIREMENTS FOR HANDLING ELECTROSTATIC-DISCHARGE-SENSITIVE (ESDS) DEVICES

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Foreword

This standard was prepared to standardize the requirements for a comprehensive Electrostatic Discharge (ESD) control program for handling ESD-Sensitive (ESDS) devices. The requirements within this standard were derived from existing industry standards, specifications, test methods, and input from various industry reviews.

The intent of this document is for users to incorporate these minimal requirements into their ESD control program to provide a consistent ESD protection level for their products.

This standard replaces JESD625-A and JEDEC Standard No. 42 (formerly JEDEC Publication 108-B, Distributor Requirements for Handling Electrostatic-Discharge Sensitive (ESDS) Devices).

REQUIREMENTS FOR HANDLING ELECTROSTATIC-DISCHARGE-SENSITIVE (ESDS) DEVICES

(From JEDEC Board ballot JCB-11-66, formulated under the cognizance of JEDEC JC-14.1 Committee on Reliability Test Methods for Packaged Devices and JEDEC JC-13.)

1 Scope

This standard establishes the minimum requirements for Electrostatic Discharge (ESD) control methods and materials used to protect electronic devices that are susceptible to damage or degradation from electrostatic discharge (ESD). The passage of a static charge through an electrostatic-discharge-sensitive (ESDS) device can result in catastrophic failure or performance degradation of the part. Device sensitivity to ESD is determined by test methods for Human-Body Model (ANSI/ESDA-JEDEC JS-001) and Charged-Device Model (JESD22-C101). ESDS devices with HBM or CDM sensitivities of less than ± 200 volts may need additional protective measures beyond those specified in this standard.

1.1 Applicable users

- a) Semiconductor Manufacturers - from wafer electrical probe through shipment of finished devices.

NOTE The requirements of this standard are not imposed prior to probe. Prior to probe, the manufacturer should take appropriate ESD precautions to minimize damage to devices.

- b) Semiconductor Processing/Testing Facilities - from receipt through shipment of finished devices

NOTE 1 ESDS Device Distributors and Users may use this standard or ANSI/ESD S20.20

NOTE 2 All ESDS devices shall be handled in accordance with this document until they are considered scrap.

1.2 Applicable device types

The device types for which these requirements are applicable include, but are not limited to, ESD-sensitive discrete and integrated circuit semiconductors, multi-chip modules, optoelectronic devices, and thin film passive devices.

1.3 Personnel safety

The procedures and equipment described in this document may expose personnel to hazardous electrical conditions. Users of this document are responsible for selecting equipment that complies with applicable laws, regulatory codes and both external and internal policy. Users are cautioned that this document cannot replace or supersede any requirements for personnel safety. Ground fault circuit interrupters (GFCI) and other safety protection should be considered wherever personnel might come into contact with electrical sources. Electrical hazard reduction practices should be exercised and proper grounding instructions for equipment shall be followed.

2 Technical References

Unless otherwise specified, the following documents of the latest issue, revision or amendment, form a part of this standard to the extent specified herein.

EIA-471	Symbol and Label for Electrostatic Sensitive Devices (JEDEC, JC-10)
ANSI/ESD-S541	Packaging Materials Standards for ESD sensitive Items
ANSI/ESD-STM3.1	Standard for Protection of Electrostatic Discharge Susceptible Items - Ionization
ANSI/ESD-S4.1	Standard for Protection of Electrostatic Discharge Susceptible Items - Worksurfaces - Resistive Characterization
ANSI/ESD-S6.1	Standard for Protection of Electrostatic Discharge Susceptible Items - Grounding - Recommended Practice
ANSI/ESD-S7.1	Standard for Protection of Electrostatic Discharge Susceptible Items - Floor Materials - Resistive Characterization of Materials
ANSI/ESD-S8.1	Standard for Protection of Electrostatic Discharge Susceptible Items – Symbols – ESD Awareness
ANSI/ESDA/JEDEC JS-001	Human Body Model (HBM) Electrostatic Discharge (ESD) Sensitivity Testing Standard
JESD22-C101	Field Induced Charged Device Model Test Method for Electrostatic Discharge Withstand Threshold for Microelectronic Devices
MIL-STD-129	Marking for Shipment and Storage
ANSI/ESD S20.20	Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
IEC 61340-5-1	Specification for the Protection of Electronic Devices from Electrostatic Phenomena - Section 1: General Requirements.
ESD TR53-01-06	Compliance Verification of ESD Protective Equipment and Materials

ESD Handbooks and User Guides

ESD TR 20.20	Technical Report - Development of an Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices - Handbook
IEC 61340-5-2	Specification for the Protection of Electronic Devices from Electrostatic Phenomena - Section 2: User Guide.