

JEDEC STANDARD

General Requirements for Authorized Distributors of Commercial and Military Semiconductor Devices

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GENERAL REQUIREMENTS FOR AUTHORIZED DISTRIBUTORS OF COMMERCIAL AND MILITARY SEMICONDUCTOR DEVICES

(From JEDEC Board Ballot JCB-20-55, formulated under the cognizance of the JC-13 Committee on Government Liaison, and the JC-14.4 Subcommittee on Quality Processes and Methods.)

1 Scope

This standard identifies the general requirements for Authorized Distributors that supply Commercial and Military products. This standard applies to all discrete semiconductors, integrated circuits and Hybrids, whether packaged or in wafer/die form, manufactured by all Manufacturers.

The requirements defined within this document are only applicable to products for which ownership remains with the Authorized Distributor or Manufacturer.

Unique additional requirements associated with the distribution of military semiconductor devices are defined within clause 4.

Annex A provides an Audit Checklist that may be used to verify conformance to this standard.

The purpose of this standard is to establish the requirements for Distributors of Commercial and Military semiconductor devices who stock, process (value-added), kit or repackage product.

2 Related documents

The following specifications and standards of the latest issue, revision or amendment, form a part of this document to the extent specified herein.

ANSI/ESD 20.20, *Protection of Electrical and Electronic Parts, Assemblies, and Equipment (Excluding Electrically Initiated Explosive Devices)*

ANSI/NCSL Z540-1, *Calibration Laboratories and Measuring and Test Equipment - General Requirements*

JESD625, *Requirements for Handling Electrostatic-Discharge Sensitive (ESDS) Devices*

MIL-PRF-38534, *General Specification for Hybrid Microcircuits*

MIL-PRF-38535, *General Specification for Integrated Circuits Manufacturing*

MIL-PRF-19500, *General Specification for Semiconductor Devices*

MIL-STD-750, *Test Methods for Semiconductor Devices*

MIL-STD-883, *Test Method Standard Microcircuits*

ISO-9001, *Quality Management Systems – Requirements*

IPC/JEDEC J-STD-020, *Moisture/Reflow Sensitivity Classification for Nonhermetic Sold State Surface Mount Devices*

2 Related documents (cont'd)

IPC/JEDEC J-STD-033, *Handling, Packing, Shipping and Use of Moisture Sensitive Surface Mount Devices*

AS5553, *Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts; Avoidance, Detection, Mitigation, and Disposition*

AS6496, *Fraudulent/Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition – Authorized/Franchised Distribution*

AS9100, *Quality Management systems –Requirements for Aviation, Space and Defense Organizations*

AS9120, *Quality Management systems –Requirements for Aviation, Space and Defense Distributors*

3 General requirements

3.1 Agreements

The formal legal agreement between the Manufacturer and the Authorized Distributor may delete, change or add to the criteria defined by this publication. However these deletions, changes or additions shall not impact the quality, reliability or pedigree of the product. **This document shall not supersede any agreement between the manufacturer and their authorized distributor**

3.2 Warranty

Product that is sold by, transferred through, screened by, or tested by an unauthorized Distributor, Test Laboratory, or Independent Broker shall not be offered to the end customer with the Manufacturer's Warranty, unless specifically approved by the Manufacturer's quality assurance organization.

3.3 Quality system

The distributor shall establish and maintain a documented quality system. This shall include:

- 1) The preparation of documented quality system procedures and instructions in accordance with the requirements of this standard.
- 2) The effective implementation of the documented quality system procedures and instructions including specific manufacturer and customer requirements.
- 3) A system to handle and repackage product in compliance with the manufacturer, customer and the applicable documents of paragraph 3.

The Distributor's quality system and procedures are subject to review, analysis and approval with appropriate notice by the manufacturers' agreed-upon representatives, customer representative and/or authorized Government representatives. This includes surveillance of products, systems, procedures, facilities and records. The attached Audit Checklist may be used as a guideline for verifying conformance to the requirements of this standard.

The responsibility for quality functions shall be clearly identified within the Distributors organization. Personnel performing quality decisions shall have sufficient authority and independence to evaluate quality problems and to initiate, recommend and provide corrective action.

3.4 Document control

The Distributor shall establish and maintain a system to control and distribute the procedures that relate to the requirements of this standard. This control shall ensure that:

- 1) A list of appropriate procedures and the current revisions of each are available at all locations where operations are performed.

NOTE Operator instruction documents include procedures and flow charts.

- 2) The issuance of all standards and instructions is controlled and dated.
- 3) Obsolete procedures are promptly removed from all points of use.
- 4) Current revisions of applicable Government documents (see paragraph 3) are available on the DLA website
- 5) When applicable customer and/or Government documents are revised, they shall be reviewed, and in-house documents shall be updated as applicable. Records of these reviews shall be maintained.
- 6) Changes to procedures are reviewed and approved by the same functions/ organizations that performed the original review and approval unless specifically designated otherwise.
- 7) A history of procedure changes, processing records, lot travelers, and forms is maintained.

3.5 Value-added process control

The Distributor shall identify the value-added processes and ensure that the operations and processes are carried out under controlled conditions. Controlled conditions shall include the following:

- 1) Documented work instructions defining the operations.
- 2) Criteria for workmanship shall be defined in written standards or by means of representative samples.
- 3) For packaged products a marking process that does not obliterate or alter the manufacturers marking.
 - a) The Distributor's marking shall include its name, trademark, or logo.
 - b) Adhesive labels may cover the manufacturer's marking providing the marking can be read after the label is removed.
- 4) For device programming and electrical test, manage and maintain documented procedures covering control units and programs. The management shall include program revisions/changes.
- 5) Devices which have had extra testing or screening performed on them in accordance with a specific customer order shall not be restocked with, or sold as, virgin product.

3.6 Supplier value-added processing

Value-added processing (e.g., environmental screening tests) performed by the Distributor's suppliers/subcontractors shall conform to the same quality system requirements contained herein.

- The use of DLA Land and Maritime approved labs is preferable for use when performing value-added processing on Military product.
- A list of approved subcontractors and the services performed shall be maintained.
- Distributor shall verify subcontractor's quality system by site audit, third party registration, or desk audit.

3.7 Records

- 1) Written Records - All handwritten entries shall be in ink. Electronic records are acceptable.
- 2) Incorrect Entry - The only acceptable error correction method for handwritten entries is to line out the incorrect entry with a single line, add the new information, the date of correction and initial the new entry.

Any obliteration of data, use of correction fluid or tape, or erasers for corrections is not permitted on any record including lot travelers, calibration records, or the Certificate of Conformance.

- 3) Record Retention and Retrievability - The Distributor shall document and maintain for at least three (3) years for Commercial and for the period specified per the applicable military specification (i.e., MIL-PRF-19500, MIL-PRF-38535, MIL-PRF-38534) for military grade devices.

The records shall be suitable in format, accuracy and detail to permit analysis by the Distributor's internal quality, Manufacturer auditor, and Government organizations.

- 4) Quality records, including copies of manufacturer certifications, and traceability records, test reports when delivered from the supplier and records of receipt and shipment shall be maintained for a period of three (3) years for commercial product or for the period stipulated in the applicable military specification (i.e., MIL-PRF-19500, MIL-PRF-38535, MIL PRF 38534) for military product.

3.8 Inventory control

The Distributor shall have a system for controlling its inventory.

- 1) The inventory management system must provide for segregation by part number and also by grade when applicable.
- 2) When several lots of the same part number and package type from the same Manufacturer exist in the Distributor's inventory, the Distributor shall deliver the parts to the end-customer based upon the first-in, first-out (FIFO) inventory method (i.e., delivery based upon the oldest date code first or receipt date).
 - a) When specifically defined by a customer order, the Distributor may ship product that does not meet the FIFO requirement.
- 3) There shall be an effective system for the control of nonconforming product. The system shall provide for the identification, segregation and disposition of these nonconforming products and preclude their shipment or commingling with conforming product.
- 4) The inventory shall be maintained in a storage area with limited access.
- 5) Die/wafers shall be stored in a dry clean inert atmosphere (e.g., nitrogen, air) or a vacuum pack.

3.9 Distributor returns to manufacturers

Distributors returning product to the Manufacturer due to a stock rotation, customer return, Manufacturer's recall or any other reason shall comply with the following requirements:

- 1) For products that require lot segregation, products shall be segregated (banded) such that only one device type, lot, and date code (when applicable) is included. A copy of the original Manufacturer's Certificate of Conformance (C of C) shall be attached (banded to the lot) when required.

NOTE Banding of multiple date codes into one lot is allowed if the product was originally shipped that way by the manufacturer (e.g., tape & reel).

- 2) ESD sensitive products shall be returned in rails, tubes, magazines, carriers, trays, or other ESD protective containers enclosed in an electrostatic field shielding (conductive) barrier (see JESD625 or ANSI/ESD 20.20), to provide protection from both mechanical and electrical (ESD) damage as applicable.

NOTE Products received from the manufacturer in a container without an electrostatic field shielding barrier shall be returned in the same kind of container as the products were originally received in.

- a) The Manufacturer reserves the right to refuse any product returned that is not properly packaged in ESD protective containers if applicable. Product packaged incorrectly may be determined to be ESD suspect, non-recoverable, and not accepted for return or credit.

3.9 Distributor returns to manufacturers (cont'd)

- 3) Products shall not be altered or mechanically damaged (e.g., leads bent or cut, added markings, or broken packages). Original Manufacturer packaging materials/containers should be used whenever possible.
 - a) Devices that have had extra tests or screens performed on them in accordance with a specific customer order cannot be returned unless previously agreed to by the Manufacturer.
- 4) Quality returns shall be clearly identified, include the reason for rejection, and must be shipped separately from other returns and stock rotations. The Customer rejection paperwork shall accompany all quality returns.
- 5) Stock rotation lot(s) shall be clearly identified.
- 6) If distributor is provided with a scrap allowance by the manufacturer, distributor must have a process in place to ensure parts are properly scrapped.

3.10 Static handling procedure

The Distributor's system for electrostatic discharge sensitive (ESDS) device protection shall be in compliance with the latest revisions of JESD625 and/or ANSI/ESD 20.20.

3.11 Calibration

The Distributor and his value-added subcontractor shall control, calibrate and maintain all inspection, measuring and test equipment that is used to demonstrate the conformance of the products to the specified requirements in accordance with ISO 9001 and ANSI/NCSS Z540-1, whether owned by the Distributor or subcontractor, leased, or provided by a Manufacturer.

3.12 Inspection and test identification

The Distributor shall provide a means to identify the inspection status of all parts throughout handling, processing, and storage. This may be accomplished through the use of stamps, tags, routing cards or other control devices that are attached to, or travel with, the product.

- 1) The method of indicating the person performing a function shall be controlled and allow for easy status determination (e.g., stamps, signatures, electronic identification).
- 2) When operators or inspectors use signature or initials in lieu of stamps on processing records the signature/initials must be legible and traceable.
- 3) A personnel list shall be kept current of all stamps or initials and the status shall be available to the auditor upon request.