JEDEC STANDARD

General Requirements for Distributors of Commercial and Military Semiconductor Devices

JESD31D

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JEDEC SOLID STATE TECHNOLOGY ASSOCIATION

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GENERAL REQUIREMENTS FOR DISTRIBUTORS OF COMMERCIAL AND MILITARY SEMICONDUCTOR DEVICES

(From JEDEC Board Ballot JCB-03-48 and JCB-10-57, formulated under the cognizance of JC-14.4 Subcommittee on Quality Processes and Methods and the JC-13 Committee on Government Liaison.)

1 Scope

This publication identifies the general requirements for 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 publication are only applicable to products for which ownership remains with the 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 publication 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/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*

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

2 Related Documents (Cont'd)

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

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

3 General requirements

3.1 Agreements

The formal legal agreement between the Manufacturer and the 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 franchised 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 specification. This control shall ensure that:

3 General requirements (cont'd)

3.4 Document control (cont'd)

1) A master procedures list and the current revisions of appropriate procedures 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 clause 3) are available on site.

5) When customer and/or government documents are revised, they shall be reviewed, and in-house documents 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 manufacturer's 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, control and documented procedures covering master units and programs. The control 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.

3 General requirements (cont'd)

3.6 Supplier value added processing (cont'd)

- The use of DSCC 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.

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.

    a) 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 andfor the period specified per the applicable military specification (i.e., MIL- PRF-19500, MIL- PRF- 38535, MIL-PRF-38534) for military grade devices.

    a) 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, 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 grade.

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.

3 General requirements (cont'd)

3.8 Inventory control (cont'd)

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) Lots shall be segregated (banded) such that only one device type, and lot, and date code (when applicable) is included. When applicable, a copy of the original Manufacturer's Certificate of Conformance (C of C) shall be attached (banded to the lot).

   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) Products shall be returned in rails, tubes, magazines, carriers or other ESD protective containers enclosed in an electrostatic field shielding (conductive) barrier (see JESD625), to provide protection from both mechanical and electrical (ESD) damage.

   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. Product packaged incorrectly may be determined to be ESD suspect, nonrecoverable and not accepted for return or credit.

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 which 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.

3.10 Static handling procedure

The Distributor's system for electrostatic discharge sensitive (ESDS) device protection shall be in compliance with the latest revision of JESD625.

3 General requirements (cont'd)

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/NCSL Z540-1, whether owned by the Distributor or subcontactor, 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.

3.13 Customer returns

Products returned to a Distributor from a customer shall be inspected for any evidence of alteration, mishandling or improper packaging. Products with evidence of alteration, mishandling or improper packaging shall be dispositioned by the Distributor. Records of the dispositions shall be maintained.

Products which have been recalled by the manufacturer do not require disposition by the Distributor but shall be processed in accordance with the manufacturer's recall notice.

Customer return process must provide for verification that parts returned by the customer to the distributor were purchased directly from the distributor and not through another source. Such verification would require validation of paperwork and date code of parts returned. If traceability is applicable for the product type being returned, it shall be provided.

3.14 Receiving, storing, packing, and shipping products

The Distributor's receiving, storing, packing and shipping procedures shall prevent mechanical or electrical damage and degradation of the products when subjected to normal handling, shipping and storage.

All packing materials shall be either conductive or antistatic, including tubes, trays, reels, bags, and fillers.

3 General requirements (cont'd)

3.14 Receiving, storing, packing, and shipping products (cont'd)

Procedures for the handling, storing, rebaking, rebagging and shipping of moisture/reflow sensitive devices, which have been classified to the levels defined in J-STD-020, shall ensure that the methods being used maintain compliance with J-STD-033. These procedures shall include any additional requirements imposed by the component manufacturer.

The Distributor shall be responsible for verifying conformance to all the processing, packing, labeling, Certificate of Conformance (C of C) and ESD requirements prior to shipping from their facility. Only product purchased directly from the manufacturer shall be stored and identified as manufacturer original devices.

3.15 Training

The Distributor shall identify the training needs and provide for the training of all personnel performing activities affecting quality. Personnel must be fully trained prior to handling products.

1) Individuals shall be retested and/or retrained a minimum of once a year or when procedural changes occur or when personnel performance indicates poor proficiency.

2) Records shall be maintained for at least three (3) years, detailing the nature of training, date, length of training, personnel receiving the training and the name of trainer.

3.16 Audits

The Distributor shall conduct internal and value added subcontractor quality audits to verify whether quality activities comply with the applicable requirements of this document. The actual audit frequency shall be based on results of the initial audit or reaudit, but as a minimum internal and subcontractor audit**s** shall be conducted every (3) years.

1) The results of the audits shall be documented and conveyed to the attention of the personnel having responsibility in the area audited and timely corrective action shall be taken.

2) Corrective actions implemented as a result of audits and customer complaints shall be documented, including actual implementation dates.

3) A formal procedure for verification of corrective action effectiveness shall be in place.

4) The audit reports, corrective actions, and verification reports shall be available for review upon request.

5) Manufacturers or their representatives may audit the Distributor's facility and OEM warehouses to verify conformance to this standard. The Distributor shall provide the necessary information, facilities and equipment to allow the required audits, tests and inspections to be performed.

Any noncompliance noted will result in corrective action by the Distributor. If a major non-conformance is found, failure to address the issue in a specified timeframe may result in loss of facility certification, preventing shipment of product either to customers or return to the manufacturer.

3 General requirements (cont'd)

3.16 Audits (cont'd)

A major nonconformance is defined as an absence or breakdown of the Quality System, any noncompliance that would result in probable shipment of nonconforming product and/or a condition that may result in the failure or materially reduce the usability of the products for their intended use.

3.17 Distributor locations

The Distributor shall identify all of its locations and value added subcontractors (e.g., test house), that stock, repackage or process and/or test products.

1) These locations shall include Distributor warehouses that are maintained at their customer's facility but whose product remains the property of the Distributor.

2) Upon request, the Manufacturers of products receiving value added processing shall be notified of the kind of processing to be done and the Distributor location or supplier performing the processing.

3.18 OEM warehouses

OEM warehouses shall be controlled by the Distributor and audited for compliance to this specification.

3.19 GIDEP participation

1) Distributor should be a direct participant in GIDEP.

3.20 Manufacturer notifications:

1) Distributor shall have a documented system in place to receive and re-distribute as necessary, notifications which come from the manufacturer that require customer notification. Such notifications can be, but not limited to, process change notifications, notices of obsolescence and problem / recall notices.

3.21 Counterfeit part risk mitigation:

1) Distributor shall have a documented process in place to limit risk associated with the receipt and passage of counterfeit parts.

4 Additional requirements for distributors of military semiconductor devices

4.1 Definition

Military product is defined as any product that is offered to customers by the manufacturer, for use in government and similar types of system applications (e.g., QPL, QML, 883, standard microcircuit drawings, specification or source control drawings, selected or altered item drawings).

Military product sold though a Distributor are to be of the same quality as product acquired from the manufacturer and shall not be degraded in any manner. Under no circumstances shall QML/QPL product be downgraded to non QML/QPL product.

4.2 Inventory control

4.2.1 Traceability

The Distributor shall design, implement and maintain an inventory control and traceability system that:

1) Documents and maintains complete traceability of the quantity of product received and distributed to customers on each received lot.

2) The traceability shall exist from the time of receipt of a lot from the Manufacturer through the delivery of the product to the customer.

3) Record of traceability shall be maintained for the required period as noted in the applicable military specification for the product delivered.

4.3 Certificate of Conformance (C of C)

The Manufacturer and the Distributor of its products shall complete a Certificate of Conformance (C of C) and Acquisition Traceability for all military products.

1) On packaged devices when a C of C is supplied by the Manufacturer it shall be copied and passed through to the end customer. The Distributor's certificate shall also accompany each shipment of product to the end customer. In no case shall the manufacturer’s certificate be altered or show signs of alteration.

2) The Distributor shall maintain copies of certificates with the lot records until the lot is completely shipped.

3) The Distributor shall maintain the product and shipment traceability for a period consistent with the applicable military specification for that product.

4 Additional requirements for distributors of military semiconductor devices (cont'd)

4.2 Inventory control (cont'd)

4.2.1 Traceability (cont'd)

4) Each Distributor's Certificate of Conformance shall state that the products have been handled in accordance with the requirements of this document and JESD625, and as a minimum, include:

   a) Manufacturer's name.

   b) Part number and product assurance level.

   c) Distributor's name and address.

   d) Name and address of the customer.

   e) Quantity of the parts in the shipment.

   f) Lot date code.

   g) Latest reinspection date, if applicable.

   h) Certification that the shipment is part of the shipment covered by the Manufacturer's documentation.

   i) Signature and date of transaction. An authorized signatory is a corporate officer with management responsibility for the product quality and reliability or their documented designee. Use of electronic signatures is permissible. An electronic signature shall be defined as the digital reproduction of the actual signature of the corporate officer with management responsibility.

4.4 Packing procedure

1) The Distributor's packing procedure shall be capable of resealing and reshipping the part container after opening and removal of product. The Distributor's packing procedures shall be sufficient to prevent damage or ESD degradation to the content when subjected to the normal handling, shipping or storage and it shall conform to the requirements of MIL-PRF-38535, MIL-PRF-38534 and MIL-PRF-19500, as applicable.

2) Labels generated by the Distributor shall include the information defined by MIL-PRF-38535, MIL-PRF-38534 and MIL-PRF-19500 as applicable.

3) Wafer/Die shall be packaged and containers marked, in compliance with the packaging requirements of MIL-PRF-19500 and MIL-PRF-38535.

4.5 Verification of current listing

Upon receipt of product, Distributors may verify the current listing of Military product on the applicable Qualified Products List (QPL) or Qualified Manufacturer list (QML).

For product not currently listed, the Distributor may inquire directly with the military Program Administration Office of the applicable Manufacturer, or DSCC-VA.

4 Additional requirements for distributors of military semiconductor devices (cont'd)

4.6 Inventory of discontinued part numbers

1) Distributors holding military inventory of a discontinued part number may continue to deliver that inventory after its removal from the QPL or QML.

2) The Manufacturers shall notify the Distributor if the QPL or QML removal is for a quality or a reliability issue, in which case the Manufacturer shall recall all affected product.

4.7 Specific product requirements

4.7.1 Solderability

All packaged product shall be capable of passing the solderability test in accordance with MIL-STD-750 Test Method 2026 or MIL-STD-883 Test Method 2003, as applicable, upon delivery to the customer.

4.8 Value added process control

4.8.1 Resistance to solvents testing

When the value added process involves additional part marking the operation shall also require Resistance to solvents testing per Method 2015 of MIL-STD-883 performed once per week for each type package and surface ink.

CAUTION Federal, State and Local chemical safety requirements shall be met.\

Annex A

AUDIT CHECK LIST

Date: _____

Auditor: _____

Area: _____

Audited: _____

Answer Yes/No

QUALITY SYSTEM

1. _____ Is the quality system documented? (3.3)

2. _____ Do documented procedures describe the activities which are being performed to implement the requirements of this standard? (3.3-1)

3. _____ Is the quality effectively implementing the document quality system procedures and requirements including the applicable manufacturer and customer requirements? (3.3-2)

4. _____ Has the Distributor established and maintained a system to handle and repackage product in compliance with the manufacturer, customer and the applicable documents of paragraph 3? (3.3-3)

DOCUMENT CONTROL

5. _____ Has the Distributor established and maintained a system to control and distribute the procedures that relate to the requirements of this standard? (3.4)

6. _____ Is a master procedure list being maintained and are the current revisions of the appropriate procedures available at all locations where operations are being performed? (3.4-1)

7. _____ Are only controlled and dated documents used in the operations? (3.4-2)

8. _____ Are the controlled documents accessible to operators at all times? (3.4-2)

9. _____ Are expired revisions of documents removed from the document stations? (3.4-3)

10. _____ Are current revisions of the applicable government documents available on site? (3.4-4)

11. _____ When customer and/or government documents are revised, are they reviewed and in-house documents updated as applicable? (3.4-5)

12. _____ Are records of the customer and government document reviews available? (3.4-5)

13. _____ Are all changes to the controlled documents formally approved prior to their being distributed for use? (3.4-6)

14. _____ Are the documents free of handwritten changes? (3.4-6)

15. _____ Is a history of all changes to the controlled documents being maintained? (3.4-7)

VALUE ADDED PROCESS CONTROL

16. _____ Are the value-added processes identified and carried out under controlled conditions? (3.5)

17. _____ Are the value-added processing work instructions documented? (3.5-1)

18. _____ Are the workmanship criteria for value added processes defined in controlled documents or representative samples? (3.5-2)

19. _____ Do the marking procedures ensure that the manufacturer's marking is not obliterated or altered? (3.5-3)

20. _____ Does the Distributor's marking include their name, trademark or logo? (3.5-3)

21. _____ When adhesive labels are used, can the manufacturer's marking be read when the labels are removed? (3.5-3)

22. _____ Are device programming and electrical test master units and programs controlled? (3.5-4)

23. _____ Does the master unit and program control system include controlling program revisions and changes? (3.5-4)

24. _____ Are the devices that have had extra testing or screening kept separate from and not sold as virgin product? (3.5-5)

SUPPLIER VALUE ADDED PROCESSING

25. _____ Are the suppliers performing value added processing required to have a documented quality system? (3.6)

26. _____ Are the value added suppliers required to have a document control system? (3.6)

27. _____ Are the value added suppliers required to control the value added processes? (3.6)

28. _____ Are the value added suppliers required to maintain written records that are retrievable for at least three (3) years for commercial products and five (5) years for military products? (3.6)

29. _____ Are the value added suppliers required to handle the semiconductors, hybrids and integrated circuits in accordance with JESD625? (3.6)

30. _____ Are the value added suppliers required to maintain a calibration system in conformance with ANSI/NCSL Z540-1? (3.6)

31. _____ Are the value added suppliers required to maintain system to identify the persons performing value added processing operations? (3.6)

32. _____ Are the value added suppliers required to use handling and packing procedures that prevent mechanical and electrical damage to the products? (3.6)

33. _____ Are the value added suppliers required to train the people performing activities affecting product quality? (3.6)

34. _____ Are the value added vendors required to maintain records of the training activities? (3.6)

34A. Is a list of approved suppliers maintained (3.6)

RECORDS AND RECORD RETENTION

35. _____ Are the records written in ink? (3.7-1)

36. _____ Are the required error correction procedures being followed? (3.7-2)

37. _____ Are the commercial records retained for three (3) years? (3.7-3)

38. _____ Are the military records retained for five (5) years? (3.7-3)

39. _____ Are the personnel training records retained for a minimum of three (3) years? (3.15-2)

INVENTORY CONTROL

40. _____ Does the management system provide for segregation by part number and grade? (3.8-1)

41. _____ Does the Distributor deliver parts to the customer based on first-in, first-out (FIFO) unless specifically defined within a customer order? (3.8-2)

42. _____ Does the inventory system identify, segregate and allow for the disposition of nonconforming products? (3.8-3)

43. _____ Does the inventory system preclude the commingling or shipment of nonconforming parts? (3.8-3)

44. _____ Is the inventory maintained in a storage area with limited access? (3.8-4)

45. _____ Are Die/wafers stored in a dry clean inert atmosphere or in a vacuum pack? (3.8-5)

DISTRIBUTOR RETURNS TO MANUFACTURERS

46. _____ Are the product types segregated? (3.8-1)

47. _____ Is a copy of the original manufacturer's C of C attached to each lot? (3.8-1)

48. _____ Are the products packaged to prevent mechanical and electrical damage? (3.8-2)

49. _____ Are the products unaltered and free of mechanical damage? (3.8-3)

50. _____ Are the quality returns clearly identified and shipped separately from the other kinds of returns? (3.8-4)

51. _____ Are the stock rotation material clearly identified? (3.8-5)

STATIC HANDLING PROCEDURE

52. _____ Are the distributor's ESD handling procedures compliant to JESD625? (3.10)

53. _____ Are the ESD handling compliance audits performed per JESD625? (3.10)

CALIBRATION

54. _____ Is the Distributor's calibration system compliant with the requirements of ISO 9001 and ANSI/NCSL Z540-1? (3.11)

55. _____ Is all measuring and test equipment requiring calibration on a calibration recall system? (3.11)

56. _____ Is all calibrated measuring and test equipment within the calibration due date? (3.11)

57. _____ Is the calibration interval defined for all test and measuring equipment? (3.11)

58. _____ Are the calibration procedures documented for all measuring and test equipment requiring calibration? (3.11)

59. _____ Do the procedures for calibration under controlled environmental (e.g., temperature, humidity) conditions, if required? (3.11)

60. _____ Are all calibrations performed by comparison to standards with a higher level of accuracy than the equipment being calibrated? (3.11)

61. _____ Are the standards calibrated? (3.11)

62. _____ Are calibration labels in place on all measuring and test equipment that requires calibration? (3.11)

63. _____ Does the information provided by the calibration labels agree with the information in the calibration system? (3.11)

64. Do the calibration labels include:

64a. _____ Date of the last calibration? (3.11)

64b. _____ Due date for next calibration? (3.11)

64c. _____ Who performed the calibration? (3.11)

65. For all measuring and test equipment requiring calibration, does the calibration history record include:

65a. _____ Identification of the equipment? (3.11)

65b. _____ Calibration interval? (3.11)

65c. _____ Environmental conditions during calibration? (3.11)

65d. _____ Identification of the standards used? (3.11)

65e. _____ If it is in or out of tolerance? (3.11)

65f. _____ Out of tolerance data? (3.11)

66. _____ Is there evidence that personnel performing calibration activities have been adequately trained? (3.11)

67. _____ Have any tamperproof labels applied to measuring and test equipment been disturbed?

INSPECTION AND TEST IDENTIFICATION

68. _____ Has the Distributor provided a means to identify the inspection status of all products throughout the handling, processing and storage operations? (3.12)

69. _____ Is the identity of persons performing functions recorded? (3.12-1)

70. _____ Are the stamps, signatures or initials legible? (3.12-2)

71. _____ Is a current list of the stamp assignments or initials and names available? (3.12-3)

CUSTOMER RETURNS

72. _____ Are all returns from customers inspected for evidence of mishandling and improper packaging? (3.13)

73. _____ Are mishandled/improperly packaged customer returns dispositioned per the Distributor's documented procedures? (3.13)

74. _____ Does the distributor maintain a documented system to assure parts returned to the distributor were purchased directly from the distributor and not through another source?

RECEIVING, STORING, PACKING AND SHIPPING PRODUCTS

75. Are there controls in place to prevent mechanical or electrical damage to the products:

75a. _____ During receiving operations? (3.14)

75b. _____ During storage? (3.14)

75c. _____ During packing operation? (3.14)

75d. _____ During shipping operations? (3.14)

75e. _____ During any value added operation? (3.14)

75f. _____ Only product purchased directly from the manufacturer shall be stored and identified as manufacturer original devices.

TRAINING

76 _____ Does the facility have a documented training procedure? (3.15)

77. Does the training procedure define the requirements for:

77a. _____ Training? (3.15)

77b. _____ Retraining? (3.15-1)

78. Do the operator training records include:

78a. _____ Name? (3.15-2)

78b. _____ Hours and dates of training? (3.15-2)

78c. _____ Trainer's name? (3.15-2)

78d. _____ Name of the operation? (3.15-2)

78e. _____ Identification of the applicable documents (including revision levels)? (3.15-2)

79. _____ Does the training procedure require retraining when significant changes are made to the procedures? (3.15-1)

80. _____ Does the training procedure require retraining when personnel proficiency or quality performance becomes substandard? (3.15-1)

81. _____ Are the training records kept for at least 3 years? (3.15-2)

AUDITS

82. _____ Is the distributor performing internal audits of its facility operations? (3.16)

83. _____ Are the internal audits performed at least once every three years? (3.16)

84. _____ Is the actual internal audit frequency based on past performance for that operation? (3.16)

85. _____ Is the distributor performing audits of its value added processing suppliers? (3.16)

86. _____ Are the value-added supplier audits performed at least once every three years? (3.16)

87. _____ Is the actual value added supplier audit frequency based on past performance? (3.16)

88. _____ Are the audit results documented and available for review? (3.16-1)

89. _____ Was timely corrective action taken on any deficiencies that were found? (3.16-2)

90. _____ Is the effectiveness of the corrective actions verified? (3.16-3)

DISTRIBUTOR LOCATIONS

91. _____ Has the Distributor identified all of its locations and value added suppliers that stock, repackage or process and/or test products? (3.17)

92. _____ Do the identified locations include warehouses at the customer facilities? (3.17-1)

OEM WAREHOUSES

93. _____ Are the OEM warehouses controlled and self audited for compliance to this standard? (3.18)

GIDEP participation

94. _____ Is the distributor direct participant in GIDEP? (3.19)

Manufacturer notifications:

95. _____ Does the Distributor have a documented system in place to receive and re-distribute as necessary, notifications which come from the manufacturer that require customer notification? Such notifications can be, but not limited to, process change notifications, notices of obsolescence and problem/recall notices. (3.20)

Counterfeit part risk mitigation:

96. _____ Does the distributor have a documented process in place to limit risk associated with the receipt and passage of counterfeit parts? (3.21)

MILITARY REQUIREMENTS

INVENTORY CONTROL- MILITARY

97. _____ Has the Distributor implemented and maintained a traceability system for military products in compliance with the requirements of this standard? (4.2.1-1)

98. _____ Does the traceability exist from the time of receipt through delivery? (4.2.1-2)

CERTIFICATE OF CONFORMANCE- MILITARY

99. _____ Does the Distributor complete a Certification of Conformance in compliance with the requirements of this standard? (4.3)

100. _____ Do copies of the manufacturer's and Distributor's certificate accompany each shipment (4.3-1)?

101. _____ Are copies of the certificates maintained with the lot records until the last shipment is made from the lot? (4.3-2)

102. _____ Are the product and shipment traceability records retained for a minimum of five (5) years after the date of the last shipment from each lot? (4.3-3)

103 _____ Do the certificates contain the minimum required information? (4.3-4)

PACKING PROCEDURE- MILITARY

104. _____ Are the Distributor's packaging containers capable of being resealed and reshipped? (4.4-1)

105. _____ Do the Distributor's packing methods conform to the applicable specifications? (4.4-1)

106. _____ Do the labels generated by the Distributors conform to the applicable specifications? (4.4-2)

107. _____ Do the wafers/die packaging and the marking of the containers conform to the applicable specifications? (4.4-3)

SPECIFIC PRODUCT REQUIRMENTS - MILITARY

SOLDERABILITY

108. _____ Does the handling and stocking procedures used by the Distributor and any value added subcontractor prevent degradation of the product's lead finish? (4.7-1)

VALUE-ADDED PROCESS CONTROL - MILITARY

109. _____ Is resistance to solvents testing being performed in compliance with the requirement of this standard? (4.8-1)

Annex B (informative) Differences between JESD31D and JESD31C

The following list briefly describes most of the changes made to entries that appear in this standard, JESD31D, compared to its predecessor, JESD31C (September 2003).

Clause	Description of Change
2	Add references: AS9100 and AS9120.
3.1	Added: This document shall not supersede any agreement between the manufacturer and their franchised distributor
3.6	Added two bulleted items after paragraph.
3.7	Item 1 - Added 2nd sentence "Electronic records are acceptable."
3.7	Item 3 - Added "for the period specified per the applicable military specification (i.e., MIL- PRF-19500, MIL- PRF- 38535, MIL-PRF-38534) for military grade devices." Removed "five (5) years for Military…"
3.7	Added item 4.
3.13	Added 3rd paragraph.
3.14	Last paragraph, added last sentence.
3.16	First paragraph, replaced "supplier" with "subcontractor"
3.16	First paragraph, replaced "an" with "internal and subcontractor".
3.16	Addition to 2nd paragraph: Any noncompliance noted will result in corrective action by the Distributor**.** ***If a major non-conformance is found, failure to address the issue in a specified timeframe*** may result in loss of facility certification, preventing shipment of product either to customers or return to the manufacturer.
3.16	Added 3rd paragraph, "A major nonconformance is defined…"
3	Added 3.19, 3.20, and 3.21.
4.2.1	Added item 3.
4.3	Item 3 – removed "minimum of (5) years after the date of the last shipment from each lot" replaced with "period consistent with the applicable military specification for that product".
4.3	(i), added 3rd and 4th sentences "Use of electronic signatures is permissible. An electronic signature shall be defined as the digital reproduction of the actual signature of the corporate officer with management responsibility.".
Annex A	Added: 34a, 74, 75f, 94, 95, and 96.

B.1 Differences between JESD31C and JESD31B

The following list briefly describes most of the changes made to entries that appear in this standard, JESD31C, compared to its predecessor, JESD31B (October 2002).

Page	Description of change
1	Per JM7, JEDEC Style Manual, documents do not contain a clause labels 'Purpose', the purpose became part of the Scope and the 'Scope' was changed to clause 1.
ALL	Based on above, all clauses were renumbered and references to such clauses were changed as required.
1	Under clause 2 'Related documents' (old clause 3), two reference documents were added, J-STD-020 and J-STD-033. These are to bring distribution requirements more in line with the component manufacturers.
6	Under 3.14, 3rd paragraph (old clause 4.14), replaced with new paragraph starting with 'Procedures for the handling, storing, …'
6	Under 3.14, last paragraph (old clause 4.14), deleted ['s quality department]
8	Under 3.18 (old clause 4.18), deleted [by the Distributor's Quality Organization]

Standard Improvement Form JEDEC JESD31D

The purpose of this form is to provide the Technical Committees of JEDEC with input from the industry regarding usage of the subject standard. Individuals or companies are invited to submit comments to JEDEC. All comments will be collected and dispersed to the appropriate committee(s).

If you can provide input, please complete this form and return to:

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1. I recommend changes to the following:

☐ Requirement, clause number _____

☐ Test method number _____ Clause number _____

The referenced clause number has proven to be:

☐ Unclear ☐ Too Rigid ☐ In Error

☐ Other _____

2. Recommendations for correction:

_____

_____

_____

_____

3. Other suggestions for document improvement:

_____

_____

_____

_____

Submitted by

Name: _____ Phone: _____

Company: _____ E-mail: _____

Address: _____

City/State/Zip: _____ Date: _____


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