

JEDEC STANDARD

Counterfeit Electronic Parts: Non-Proliferation for Manufacturers

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JEDEC SOLID STATE TECHNOLOGY ASSOCIATION



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COUNTERFEIT ELECTRONIC PARTS: NON PROLIFORATION FOR MANUFACTURERS

(From JEDEC Board Ballot JCB-15-56, formulated under the cognizance of the JC-13 Committee, Government Liaison.)

1 Scope

This standard identifies the best commercial practices for mitigating and/or avoiding counterfeit products by all manufacturers of electronic parts including, but not limited to *original component manufacturers* (OCMs), *authorized aftermarket manufacturers*, and other companies that manufacture electronic parts under their own logo, name, or trademark. The types of product this standard applies to is limited to monolithic microcircuits, hybrid microcircuits and discrete semiconductor products.

The purpose of this document is intended to supplement the requirements of a comprehensive quality management system. This document is not meant to supersede, or cancel requirements found in other quality standards, requirements imposed by contracting authorities, or applicable laws and regulations unless an authorized exemption/variance has been obtained.

2 Reference documents

The applicable issue of other publications shall be the issue in effect on the date of the purchase. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence.

2.1 JEDEC documents

JESD31, *General Requirements for Distributors of Commercial and Military Semiconductor Devices*.

2.2 ISO publication

ISO 9001, Quality Management Systems – Requirements

This document is available from **ISO Central Secretariat**, 1, ch. de la Voie-Creuse, CP 56 CH-1211, Geneva 20, Switzerland, www.iso.org or from ISO members.

2.3 Military specifications

Defense Federal Acquisition Regulations.(DFAR) 252.246 Contractor counterfeit part detection and avoidance system.

3 Terms and definitions

For the purposes of this document, the terms and definitions listed in ISO 9001 and the following apply. Throughout this document, terms defined in this clause are shown in italics.

authorized aftermarket manufacturer: A manufacturer that meets one or more of the following criteria:

- a) The aftermarket manufacturer is authorized by the *original component manufacturer* or intellectual property (IP) holder to produce and sell parts, usually due to an *original component manufacturer* or IP holder's decision to discontinue production of a part. Parts supplied are produced from material that has been:
 - 1) transferred from the *original component manufacturer* or IP holder to the aftermarket manufacturer [usually in the form of die/wafer and test program(s)], or
 - 2) produced by the aftermarket manufacturer using *original component manufacturer* or IP holder tooling and/or intellectual property (IP).
- b) The aftermarket manufacturer produces parts using semiconductor dice or wafers, manufactured by and traceable to an *original component manufacturer* or IP holder, that have been properly stored until use and are subsequently assembled, tested, and qualified using processes that meet the *original component manufacturer* or IP holder's technical specifications without violating the *original component manufacturer* or IP holder's intellectual property rights (IPR) and are authorized by the *original component manufacturer* or IP holder.
- c) The aftermarket manufacturer, using reverse engineering, produces parts that match all of the *original component manufacturer* or IP holder's specifications and satisfy customer needs without violating the *original component manufacturer* or IP holder's intellectual property rights and with the *original component manufacturer's* or IP holder's authorization.

authorized chain of custody: Sales conducted by the *original component manufacturer*, the *authorized aftermarket manufacturer*, the *authorized distributor*, or *authorized reseller* that carries the *manufacturing organization's* rights of warranty with the product.

authorized distribution: Transactions conducted by an *authorized distributor* selling product according to the terms of a *distribution agreement*.

authorized distributor: A distributor authorized by a *manufacturing organization* to distribute parts according to the terms of a *distribution agreement* and JESD31.

authorized reseller: A company that has written authorization signed by a duly authorized representative of the *manufacturing organization* to sell the *manufacturing organization's parts*.

NOTE 1 Some *authorized resellers* purchase directly from the *manufacturing organization* while others obtain *parts* directly from an entity authorized by the *manufacturing organization*.

NOTE 2 The *authorized reseller* is not an *authorized distributor*, does not stock parts, and may possibly not offer a full manufacturer's warranty.

3 Terms and definitions (cont'd)

broker (in the independent distribution market): Synonym for “*independent distributor*”.

Certificate of Compliance: A document certified by competent authority that the supplied goods or service meets the required specifications. Also called a certificate of conformance or certificate of conformity.

commercial and industrial parts: *Parts* produced for a commercial and/or industrial use and normally manufactured to conform to a *manufacturing organization’s* specification or data sheet.

counterfeit part: An unlawful or unauthorized reproduction, substitution, or alteration that has been knowingly mismarked, misidentified, or otherwise misrepresented to be an authentic, unmodified electronic part from the original manufacturer or a source with the express written authority of the original manufacturer or current design activity, including an *authorized aftermarket manufacturer*.

NOTE 1 Unlawful or unauthorized substitution includes used electronic parts represented as new or the false identification of grade, serial number, lot number, date code, or performance characteristics.

NOTE 2 Included within this definition is a *part* bearing the *manufacturing organization’s* trademark that the *manufacturing organization* did not put on the market for sale or use.

customer (within the context of this document): An entity to who obtains *parts* thru the *authorized chain of custody*.

distribution agreement: A specific, written contract between the *manufacturing organization* and the *authorized distributor* that authorizes the distributor to resell the *manufacturing organizations parts*.

NOTE 1 Contractual terms include, but are not limited to, distribution region, distribution products or lines, and warranty flow down from the manufacturer.

NOTE 2 These agreements often include failure analysis support, return privileges, and product change notifications as well.

GIDEP: Initialization for the Government Industry Data Exchange Program

independent distribution: Transactions conducted outside the context of the *authorized distribution channel* or the *authorized chain of custody*.

NOTE 1 There is no manufacturer’s warranty extended to product procured through independent distribution.

independent distributor: A distributor doing independent (unauthorized) open market distribution outside of the *authorized chain of custody* where the distributor does not have the authority or permission to use the registered trademark of any *manufacturing organization* or is represented as an *authorized reseller of parts*.

NOTE Products sold by *independent distributors* do not carry the *original component manufacturer’s* warranty.

manufacturing organization (within the context of this document): The manufacturer of the parts i.e., *original component manufacturer, authorized aftermarket manufacturer, or any other company that manufactures products under their own logo, name, or trademark.*

3 Terms and definitions (cont'd)

military parts: Any product that is offered to customers by the manufacturer for use in US military and similar types of systems applications (e.g., QPL, QML, MIL-STD-883, standard microcircuit drawings, specification or source control drawings, selected or altered item drawings).

original component manufacturer (OCM): A company that designs and/or engineers a *part* and owns the intellectual property rights to that *part*.

NOTE 1 The *part* and/or its packaging are typically identified with the OCM's trademark and/or logo.

NOTE 2 OCMs generally manufacture the *part*, but they may subcontract the manufacturing of the *part*.

original equipment manufacturer (OEM): A company that manufactures or contracts to manufacture products that it has designed or contracted to design from *parts* and sells those products under the company's brand name.

part (within the context of this document): An electronic component produced by a *manufacturing organization*, i.e., integrated circuit, hybrid microcircuit, or discrete semiconductor.

supplier (within the context of this document): A manufacturer or supplier of raw materials used in the production of a *part*.

supply chain traceability: Documented evidence of a *part's* supply chain history.

NOTE 1 This refers to documentation of all supply chain intermediaries and significant handling transactions, such as from *manufacturing organization* to *authorized distributor*, or from excess OEM inventory to *broker*.

NOTE 2 Traceability also includes documentation concerning compliance with manufacturers requirements and instructions on transport, storage and handling (e.g., ESD protection, temperature, and humidity).

NOTE 3 Traceability does not imply *authorized distribution* nor a manufacturer's warranty.

suspect counterfeit part: An electronic part for which credible evidence (including, but not limited to, visual inspection, lack of traceability or test results) promotes reasonable belief that the *part* may be counterfeit.

4 Requirements

4.1 Counterfeit mitigation policy

The *manufacturing organization's* management shall define and document its policy intended to prevent *counterfeit electronic parts* from entering the supply chain. The policy shall also state the *manufacturing organization's* policy regarding the disposition and reporting of *parts* determined to be a *suspect counterfeit part*, and/or confirmed to be *counterfeit part* as well as promote the procurement of *parts* by *customers* thru the *authorized chain of custody*. The *manufacturing organization's* management shall ensure that the policy is communicated, understood, implemented, and maintained at all levels of the *manufacturing organization*.

4 Requirements (cont'd)

4.2 Counterfeit electronic parts control plan

The *manufacturing organization* shall develop and implement a *counterfeit parts* control plan that documents its processes used for risk mitigation, disposition, and reporting of *suspect counterfeit parts* and confirmed *counterfeit parts*. The control plan shall include the minimum processes described in 4.2.1 through 4.2.9.

4.2.1 Authorized distributors list

The *manufacturing organization* shall maintain a list of its *authorized distributors* available for *customers*. The list may be posted on the *organization's* web site or be provided to *customers* when requested. The *manufacturing organization* shall also maintain documentation detailing the scope of a distributor's authorization and any limitations to that authorization.

4.2.2 Distribution agreement

The *manufacturing organization* shall have a documented and approved *distribution agreement* with the *authorized distributors*. *Distribution agreements* are considered proprietary documents and not subject to third party review without the consent of both the *manufacturing organization* and the *authorized distributor*.

4.2.3 Approved suppliers listing

The *manufacturing organization* shall maintain an approved *supplier* listing that includes approval status and the scope of the approval for all material suppliers when the material is a major constituent piece of the finished *part*. The listing shall also include all subcontractors that assemble, test, or modify the parts for the *manufacturing organization*. The approved suppliers listing may be considered to be confidential by the *manufacturing organization*.

4.2.4 Purchase restriction

The *manufacturing organization* shall purchase parts and raw materials used to produce *parts* directly from the materials manufacturer or the materials manufacturer's authorized distributor or an approved *supplier* listed on the approved *suppliers* listing.

4.2.5 Commercial, industrial and automotive parts

Commercial and, industrial and automotive parts delivered by the *manufacturing organization* should be accompanied by a *manufacturing organization's* certification or *manufacturing organization's* certificate of conformance, normally on the *manufacturing organization's* pack list, but may be supplied in other forms.

4.2.6 Military parts

Military parts shall have a certificate of conformance per the applicable military specification, and/or purchasing requirements

4 Requirements (cont'd)

4.2.7 The organization's certificate of conformance

The *manufacturing organization's* certificate of conformance should be provided with each order in accordance with the *manufacturing organization's* internal procedures. The certification should be legible and clearly indicate the *manufacturing organization's* name and/or logo.

A *manufacturing organization's* certificate of conformance statements should be printed on packing slips or provided as a supplementary document. Certificate of conformance data content may include:

- a) *manufacturing organization's* name;
- b) *manufacturing organization's* part number;
- c) quantity shipped;
- d) date code and or lot code;
- e) *customer* PO number;
- f) ship date to customer;
- g) *manufacturing organization's* statement of conformance;
- h) signature of responsible party (electronic signature is acceptable);
- i) country of origin;
- j) *customer* part number (if applicable);
- k) *customer* name and location.

4.2.8 Retention of records

The *manufacturing organization* shall document and maintain records in accordance with their internal quality system standards. The records shall be suitable in format, accuracy, and detail to permit analysis by the *organizations* internal quality personnel and government agencies.

4.2.9 Control of nonconforming product and excess materials

The *manufacturing organization* shall have a policy in place and a methodology to control nonconforming products scrap materials, and the disposition of excess materials and products to keep these materials and products from re-entering the supply chain through unauthorized sources

4.3 Customer returns

4.3.1 Return policy

The *manufacturing organization* shall maintain a return policy.

4 Requirements (cont'd)

4.3.2 Return Verification

The *manufacturing organization* shall perform return verification on all *parts* it intends to restock into inventory or resell to a *customer*.

- a) The *customer* return process shall provide for verification that parts returned by the *customer* to the *manufacturing organization* were purchased directly from the *authorized chain of custody* and not through another source.
- b) Verification shall require validation of the returned *parts* to the *manufacturing organization's* traceability records, including the date/lot code of *parts* returned when available. If the date/lot codes are not a match the shipped product, the *manufacturing organization* shall disposition the *parts* as *suspect*, and the *parts* shall not be restocked.
- c) *Parts* returned to the *manufacturing organization* from a *customer* shall be inspected for any evidence of alteration, mishandling, improper packaging, or repackaging. If the *manufacturing organization* notes any of these conditions, it shall disposition the parts as *suspect*, and the product shall not be restocked unless it passes the criteria of 4.3.3 b.
- d) Product resold from returns shall carry the full manufacturer's warranty.
- e) If the *manufacturing organization* chooses not to verify a returned *part*, the returned *part* shall not be restocked or returned to the supply chain, and the part shall be scrapped.

4.3.3 Disposition of returns deemed suspect or counterfeit

- a) Returned *suspect parts* shall be quarantined pending disposition by the *manufacturing organization* in accordance with the *manufacturing organization's* documented policies and procedures.
- b) *Suspect counterfeit parts* shall be tested (if intended to be restocked or resold) and inspected to validate the electrical and visual /mechanical attributes and determine that the quality, reliability, and authenticity of the *parts* have not been altered due to reprogramming, mishandling, or improper packaging or repackaging by the customer. All of the previously *suspect counterfeit parts* which pass this screening shall be eligible for restocking and resale.
- c) Records of the dispositions shall be maintained.
- d) Confirmed *counterfeit parts* shall not be returned to the *customer* and may be retained for investigative or training purposes or be turned over to law enforcement for criminal investigation and notification of GIDEP when appropriate.

4.3.4 Restocking prohibition

- a) Confirmed *counterfeit parts* shall not be reintroduced into the supply chain
- b) Suspect counterfeit parts shall not be reintroduced into the supply chain unless they have been tested and inspected and passed the requirements of 4.3.3 b.

4 Requirements (cont'd)

4.4 Training

The *manufacturing organization* shall train employees on counterfeit detection and mitigation as appropriate.

4.5 Scrap records

The *manufacturing organization* shall maintain records of scrap *parts* and materials.



Standard Improvement Form

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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).

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