



GENERAL MICRO SYSTEMS, INC.
TRUSTED AND DEPLOYED SINCE 1979

Q-11 ELECTRONIC PART COUNTERFEIT RISK MITIGATION

The word "shall" invokes a binding requirement for the supplier to meet.

General Requirements

The supplier shall ensure the material supplied on this order is the Original Component/Equipment Manufacturer (OCM/OEM) referenced on the Purchase Order, General Micro Systems Drawing, or as indicated by the manufacturer's unique part number.

The supplier shall mark the material in accordance with the applicable procurement document, whether it is a Military Specification Standard Microcircuit Drawing (SMD), General Micro Systems control drawing or Manufacturer's Data Sheet.

Any unauthorized marking or remarking of components is prohibited.

The Seller shall use the inspections and tests contained in Table 1 to verify that the material conforms to this Quality Note, unless otherwise specified in this purchase order.

The Seller shall utilize a test and inspection laboratory capable of performing the required inspections and tests and have General Micro System's concurrence in writing.

The Seller shall contact the General Micro Systems Procurement Agent to confirm the General Micro Systems preferred method of laboratory testing (Internal or External).

The Seller shall ensure that the inspections and tests meet the requirements listed in this document.

The Seller shall provide separate inspection data reports for each component date code / lot code.

The Seller's inspection data reports shall include:

- Original manufacturer's name
- General Micro Systems purchase order number
- General Micro Systems part number as specified on the purchase order
- If no General Micro Systems part number is specified on the purchase order, the Seller's part number shall be used.
- If no Seller's part number is specified on the purchase order, the material descriptor shall be used.
- General Micro Systems drawing revision (including change notices, if not part of revision level) when specified on the purchase order
- If no General Micro Systems drawing revision is specified on the purchase order, then no drawing revision is required.
- Note: "Rev -" is a General Micro Systems convention to denote first release. If "Rev -" is used by General Micro Systems, the Seller shall record the revision as "Rev -" and not as "N/A" or leave the revision blank.

- Component date code & lot code
- Test/Inspection results, conditions, and parameters
- Quantity of parts tested
- Serial numbers (where applicable)
- Date of test/inspection
- Inspector identification

Seller's authorized agent's name, position, and date. Note: Electronic signature is acceptable.

The Seller shall report any evidence of counterfeit parts encountered during Inspection or Test to General Micro Systems, ERAI, and the Government Industry Data Exchange Program (GIDEP).

If multiple date codes / lot codes are shipped in the same container, the Seller shall place each date code / lot code in separate packages marked with the date code / lot code.

The Seller shall retain test samples as part of the quality record associated with this purchase order.

The Seller shall have destruct test samples made available to the General Micro Systems Procurement Agent upon request.

The Seller shall provide the name and location of the 1st tier supplier providing the material to the Seller.

The Seller shall address all correspondence to the General Micro Systems Procurement Agent.

The Seller shall retain the test data for a minimum of 5 years from the completion of this Purchase Order unless otherwise specified.

Table 1

Inspection/Test	Requirement	Sample Size
Packaging Inspection and OEM/OCM history investigation	Verification that package marking is consistent with the OEM marking and that the date / lot code is not later than the last production date. For Qualified Parts List (QPL) parts, verify that the manufacturer identified on the package was a QPL source for the time period represented by the part date / lot code.	3 parts from each date code 1/
External Visual Inspection (N/A for bare die)	IDEA-STD-1010, 20 X magnification minimum, 50 X or greater may be used to detect counterfeiting	100% up to 122 pieces and minimum 122 piece sample for lots greater than 122 pieces
Mechanical Inspection (N/A for bare die)	IDEA-STD-1010 paragraph 10.3.3	20 parts from each date code
Marking Permanency (N/A for bare die) 2/	Using the following in the order specified: 1) 3 parts Mineral Spirits, 1 part Isopropyl Alcohol mixture, 2) Acetone	3 parts from each date code 1/
Blacktop Testing (N/A for bare die) 2/	1) 1-Methyl 2- Pyrrolidone (AS6081), 2) Dynasolve 750 solution (AS6081), 3) Scrape Test (IDEA 1010.3.2.3)	3 parts from each date code 1/
Delid/Decapsulation (for bare die see 3/)	Component Decap (cavity devices only) and die photograph to compare die marking to external part marking, OEM/OCM die maps or datasheet or known good die, if available	3 parts from each date code 1/
Lead Cross-Section	For metal can, through hole packages such as TO-99, TO-100, TO-8, etc. All device leads must be cross-sectioned in order to determine if leads have been extended by welding	3 parts from each date code, all leads(may be performed on the Delid/Decapsulation sample) 1/
Solderability (N/A for bare die)	per IPC/EIA-J-STD-002	3 parts from each date code 1/
X-Ray Fluorescence (N/A for bare die)	Termination finish composition	3 parts from each date code 1/
Electrical (for bare die see 4/)	Test in accordance with commodity matrix in Appendix A herein	100%
Radiographic Inspection (N/A for bare die)	Radiographic Inspection of the die and internal construction of the product	100%

Inspection/Test	Requirement
Test Inspection Data	The Seller shall submit a test and inspection data report to General Micro Systems for review, approval and disposition prior to shipping the part. The electrical test data requirements are contained in the checklist attached to this Quality Note. The Seller or the Seller's test laboratory shall complete the checklist attached to this Quality Note which will serve as a summary cover sheet that is supported by all additional detailed test data, results, images, and photographs. No shipments of material can be made without report review and written confirmation of approval by General Micro System's buyer via a COTC
Certificate of Test completion (COTC)	The Seller shall submit an approved COTC with each shipment of material to General Micro Systems

1. Performance of multiple tests on the same samples is allowed to maximize yield
2. As applicable for device package materials and marking
3. For bare die, perform die inspection to compare die marking to OEM/OCM die maps, datasheet, or known good die, if available. After the die inspections have been completed, select three samples and perform cross section analysis. Compare the various die layer characteristics against the known die information (i.e. die thickness, backside plating layer material and thickness, passivation characteristics and material type, number of metal layers, etc.), and verify uniformity between the samples (and compare to cross sections of known good die if available).
4. For bare die a 10 piece sample shall be assembled for electrical testing and tested to the corresponding commodity type per Appendix A. 100% electrical probe testing may be performed in lieu of assembly

