

Microsemi Analog Mixed Signal

PURCHASE ORDER QUALITY REQUIREMENTS

The following Quality Requirements apply in entirety when stated by their specific code on Microsemi Analog Mixed Signal (MSC-AMS) Purchase Orders. These requirements are in addition to any others set forth in the purchase order or material specification, and form an integral part of this order. If a supplier needs further information/clarification on any of these clauses, they are required to contact MSC-AMS.

[Note: Microsemi Analog Mixed Signal/MSC-AMS is also known as SG Products & Sensors.](#)

Q1 COUNTERFEIT PARTS PREVENTION

Suppliers/Subcontractors shall have a counterfeit prevention/detection program listed below,

- Parts obsolescence monitoring program, training of awareness and prevention.
- Controls for procuring product from original authorized Manufacturers/Distributors or other sources.
- Traceability, verification or testing methodologies to detect counterfeit parts (as applicable).
- Control/Quarantine of suspect/detected material and notification to Microsemi.

Q2 CONTRACT REQUIREMENTS

The product or service is supplied in accordance with the terms of an approved contract/Purchase order. Quality Clauses are contained within. [Required to use any specific sub suppliers as requested by Microsemi](#)

Q3 CALIBRATION SYSTEM REQUIREMENTS

The supplier shall maintain a certified equipment calibration system consistent with the Quality System in place or to ANSI/NCSSL-Z540/[ISO17025](#) or equivalent.

Q4 CHANGE CONTROL

a. CHANGE CONTROL / MRB (Material Review Board)

The supplier shall notify MSC-AMS of any changes occurring in the design or processing of procured materials or services or a change in the location of the manufacturing facility. Approval for these changes and any Material Review Board (Supplier is to notify MSC-AMS of any non-conforming product and obtain MSC-AMS disposition before handling the non-conforming product) activity are under MSC-AMS authority and are not delegated to the supplier. (Refer to Form 9914)

b. CHANGE CONTROL / SUB-CONTRACTORS

Wafer, Assembly, and Test subcontractors shall notify MSC-AMS of any major changes used in the fabrication of wafers and devices. A major change is defined by Form9914 and is part of these Quality Requirements. Flow down of these requirements to all levels of subcontractor/supplier supply chain as applicable is the responsibility of the subcontractor/supplier.

Q5 ACCESS RIGHTS

MSC-AMS reserves the right to request the supplier to allow and arrange for a facilities survey by MSC-AMS and/or representatives of a MSC-AMS customer/government, including regulatory authorities.

Q6 GOVERNMENT INSPECTION

The Government reserves the right to inspect any and all of the materials included in this order at the supplier's plant. Government inspection and release of shipment is not required unless otherwise notified.

Q7 CUSTOMER SOURCE INSPECTION

MSC-AMS and its [customers](#) reserves the right to inspect any and all of the materials included in this order at the supplier's plant. MSC-AMS inspection and release of shipment is not required unless otherwise notified.

Q8 WORKMANSHIP/COMPETENCE

All materials supplied under this purchase order must be fabricated and finished to the highest quality practical and in a workmanship like manner by trained and/or qualified personnel.

[Product/Service provided by trained and competent personnel as seem fit by the supplier. Personnel shall be made aware of the following:](#)

- [1\) Their contribution to product/service conformity.](#)
- [2\) Their contribution to product safety](#)
- [3\) The importance of ethical behavior.](#)

Should the supplier have any questions on the product/service to be provided, the supplier shall contact Microsemi (Ex: Buyer and/or personnel from functional organizations that are working with the suppliers)

Q9 PACKAGING

The supplier shall ensure that preservation and packaging afford adequate protection against corrosion, deterioration and physical damage during shipping, handling and intermediate storage.

Q10 STATIC SENSITIVE MATERIALS

Electrostatic Sensitive Devices (ESD) shall be handled, packed and marked per the requirements of MIL-STD-1686 AND JESD22-A114 as applicable or to MSC-AMS specification SGM5809.

Q11 CERTIFICATE OF CONFORMANCE

The supplier shall submit with each shipment a Certificate of Conformance that certifies the materials furnished have been manufactured in accordance with the requirements referenced or specified on the purchase order. At a minimum the certificate must contain: MSC-AMS specification number and revision, MSC-AMS Purchase Order number, quantity, lot or batch number, signature of a responsible supplier representative and also must state that objective evidence substantiating certification is on file and available for review.

Q12 AGE DATED MATERIALS

The supplier shall identify all materials which degrade with age or environment. This information shall be affixed directly on the material container, and as a minimum must indicate the date useful life will be expended and any storage conditions (i.e. temperature, humidity, etc.) required achieving the stated life. Upon receipt, a minimum of 50% of the shelf life must remain in effect or the material is subject to rejection and return to the supplier.

Q13 RAW MATERIAL ANALYSIS

Materials supplied against this purchase order may be subjected to laboratory analysis for material composition and/or purity. Analysis results non-compliant with specification requirements will be cause for rejection and return of materials to supplier.

Q14 FUNCTIONAL INSPECTION

Each shipment of materials supplied against this purchase order may be subjected to MSC-AMS inspection. This inspection will include an evaluation of materials by a pre-production sample being built and performing functional testing. Non-conformance to specification requirements will be cause for rejection and return of materials to supplier.

Q15 TEST DATA

The supplier must include actual test data as required by the purchase order and specification with each shipment of materials. This data must identify the inspection performed and quantity accepted/rejected or actual reading when required. This shall serve as approval of product, procedures and relevant processes.

As requested in documents provided to the supplier, the supplier shall provide design, test, inspection, verification, process information (Ex: SPC data, logs, etc), to provide conformance to requirements.

Q16 QUALITY SYSTEM REQUIREMENTS

[All Tier 1 or Tier 2 Supplier's/Subcontractors](#) shall have a Quality management system that monitors all aspects of the applicable processes. Acceptable Quality Systems include ISO9001 (level commensurate with product or service rendered), TS16949, AS9100, MIL-PRF-38535, MIL-PRF-38534, etc. or [Microsemi's supplier quality team would review the existing the quality management system using various applicable methods \(Ex: onsite audits or checklists, etc. per internal procedures\).](#)

Q17 CERTIFICATE OF FLAMMABILITY PERFORMANCE

Materials supplied against this order shall have been subjected to Flame Class Testing and determined to be in accordance with VL-94, rating V-0. The supplier shall maintain test results on file. A certification regarding acceptability to VL-94 V-0 shall be supplied upon demand.

Q18 CERTIFICATE OF ORIGIN

The supplier shall submit with each initial shipment a Certificate of Origin on materials supplied against this purchase order. At a minimum the certificate must contain the MSC-AMS specification number and revision and the signature of a responsible supplier representative.

Q19 RECORDS RETENTION

Subcontractors of Foundry, Assembly, Environmental Processing, Electrical Test and Packaging Services shall maintain processing and quality records to provide conformance to Microsemi's requirements. Such records are required by the subcontractors to be maintained for a minimum of 7 years. Additional information can be obtained by requesting Microsemi's internal procedure SGQ1306. If a customer of Microsemi requires extended storage time, Quality organization notifies and works with relevant suppliers. [All requests, for destruction of records, must have written approval by MSC AMS Quality.](#)

Q20 BANNED AND RESTRICTED SUBSTANCES

Suppliers shall provide Materials and Services in accordance with Microsemi Analog Mixed Signal (MSC-AMS) document, Supplier Requirements, Banned and Restricted Substances, SGQ1327. If non-compliance exists, MSC-AMS shall be notified by contacting the MSC-AMS Purchase Agent or [Quality](#).

Q21 REVISION CONTROL

Manufacturing shall comply with the latest released file a revision as approved by MSC-AMS on the day manufacturing begins.

Q22 TRADE COMPLIANCE CONTROLS (ITAR)

All purchase orders issued with Subcontractors using DSP/TAA Licenses must reflect this code. Approved Licenses for MSC and subcontractor must be stated on the Purchase Order. Additional requirements can be added using a specific Statement of work which will clearly outline all requirements that the subcontractor must meet

Q23 Control and monitoring of supplier performance (applicable to only Tier 1 and Tier 2 suppliers, Assembly, Test, Processing/Screening/QCI/Qualifications etc.)

All suppliers are monitored for quality issues (Number of CARs issued)

All Tier 1 suppliers are monitored for quality (# of CARs), on time delivery and other aspects.

Should you have any questions, please contact Microsemi (Buyer and/or Supplier quality personnel)