SIGENICS
Your idea, our expertise, your silicon

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Supplier Product Assurance Provisions for ICs in Die Form

This document establishes the general requirements for the procurement of Monolithic Integrated Circuits in die form having one or more fabrication process steps designed to meet the requirements of a Sigenics detailed device specification. These provisions supplement the terms and conditions found in the purchase order, as well as those that are specified in the applicable drawings and specifications provided to the supplier.

The following documents form a part of this document to the extent specified herein. The issue in effect at the time of procurement shall be used.

- DOD-STD-1686 Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment
- ISO Standand 14644-1, Cleanrooms and associated controlled environments.

The Purchase Order shall explicitly list the sections of this document that will apply to the order. Any exceptions to the provisions called out in the Purchase Order require a written waiver.

1) INSPECTION AND STORAGE ENVIRONMENT

All die/wafers shall be inspected and stored in an ISO Standard 14644-1, Class 8 environment (FED-STD-209 Class 100,000 environment). Die/wafers shall be kept in covered containers when transported from one controlled environment to another.

Any Vendor records of environmental conditions in the processing areas (such as: temperature, humidity, pressure differential, airborne particle count, or other relevant conditions) shall be made available to Sigenics's Quality Representative for review when requested.

2) ELECTROSTATIC DISCHARGE (ESD) CONTROL PROGRAM

The supplier shall maintain a documented Electrostatic Discharge (ESD) Control Program in conformance with DOD-STD-1686. Die/wafers that are susceptible to ESD shall be packaged in conductive containers and labeled with an ESD identifier.

3) NITROGEN BLOW-OFF

If nitrogen blow-off is used to clean die/wafer containers, then ionized nitrogen shall be used.

4) MERCURY EXCLUSION

To preclude mercury contamination of end-product, unencapsulated mercury thermometers may NOT be used during fabrication, processing, screening tests, assembly or any other operations.

5) AUTOMATIC TEST EQUIPMENT (ATE)

When ATE is used for acceptance of product, suitable calibration provisions shall be made available for an in-house review. A specific Calibration Procedure shall be documented and the frequency of calibration shall be defined along with accept/reject criteria and corrective action test limits.

6) DIE DELIVERY REQUIREMENTS

a) Packaging
Die must be packaged in a suitable container to isolate one die from the next and prevent damage during shipment. For die packaged in trays, die cavities shall be sized to prevent rotation of the die within the cavity (i.e., 90° rotation shall not be possible). For die packaged in adhesive carriers such as gel-pak or dicing tape, the carrier shall be covered or enclosed to prevent damage or contamination of the die surface. All die must be face-up and oriented in the same direction. Die from different wafers shall not be packaged together.
As a minimum, all internal packaging and packaging materials used for shipment shall be antistatic and shall conform to the requirements as stated in Clause 2.

b) Identification - Each separate container shall be clearly marked with the following information:
- Manufacturer's Name
- Manufacturer or Sigenics Part Number
- Quantity in Carrier
- The Sigenics Purchase Order Number
- Manufacturer's Wafer Lot Number and the wafer identification number, when necessary
- Electrostatic (ESD) Warning

Note: A separate container may be a number of individual die boats (waffle packs) clasped together as one unit. In no case may a separate container contain dice from more than one wafer.