Guidelines for the Packing and Handling of Moisture Sensitive Integrated Circuits

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Superseded by JEP 124

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NEDA Guidelines for the Packing and Handling of Moisture Sensitive Integrated Circuits

Introduction

Growing global competition for the industries which comprise the predominant users of electronic components, particularly semiconductor products, is resulting in a continuous evolution in customers' practices and their vendor performance expectations. Customer preferred vendor programs for manufacturers, and distributors are a growing trend. Stringent performance evaluations for product integrity, correctness of deliveries and related service parameters have resulted from these market driven quality initiatives and remain integral to such approved vendor programs.

Within the semiconductor customer community, the quest for improved product quality, shorter time-to market cycles and zero-defect product manufacturing is rapidly advancing. Customer demands on their vendor base (distributors and manufacturers alike) also include greater demands for ESD protection, inspection of products, and a shortening window for the range of acceptable date codes for products.

Select Plastic Surface Mount Components (PSMC's) are susceptible to package cracking as well as other moisture induced failure mechanisms when exposed to the high thermal stresses associated with surface mount processing. To ensure the package integrity of moisture sensitive PSMC's during surface mount processing, suppliers package these devices in desiccated moisture barrier bags. Appropriate handling procedures must be observed to maintain the moisture integrity of these devices prior to surface mount processing.

It is the purpose of this Guideline to establish package quantity and handling guidelines for moisture sensitive PSMC's shipped through distribution in tubes and trays to ensure that they are not subjected to excessive moisture levels.

The whole semiconductor industry must adapt its practices to meet the customers' service and quality demands to be competitive within the OEM community. Distributors believe that adherence to a service quality standard responsive to customers' demands is the approach most likely to bring market demands and industry practice back into harmony.

In order for Distributors and Manufacturers to meet the increased service and quality needs of the end user, NEDA has actively promoted the development and implementation of standardized packaging, handling, and labeling practices.

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1. INTRODUCTION.

Select Plastic Surface Mount Components (PSMC's) are susceptible to package cracking as well as other moisture induced failure mechanisms when exposed to the high thermal stresses associated with surface mount processing. To ensure the package integrity of moisture sensitive PSMC's during surface mount processing, suppliers package these devices in desiccated moisture barrier bags. Appropriate handling procedures must be observed to maintain the moisture integrity of these devices prior to surface mount processing.

2. PURPOSE.

It is the purpose of this Guideline to establish package quantity and handling guidelines for moisture sensitive PSMC's shipped through distribution in tubes and trays to ensure that they are not subjected to excessive moisture levels.

3. APPLICABLE REFERENCE DOCUMENTS.

ETA-583 "Packaging Material Standards for Moisture Sensitive Items"

NEDA Publication NIGP 103.00 "Guidelines for the Identification and Labeling of Moisture Sensitive Integrated Circuits"

4. REQUIREMENTS.

4.1 STANDARD PACKAGE QUANTITIES FOR MOISTURE SENSITIVE PSMC'S: To minimize the handling of moisture sensitive PSMC's shipped in tubes, standard package quantities must not exceed five (5) tubes per bag. The standard package quantity for products shipped in trays is one (1) tray per bag.

4.2 REBAGGING OF MOISTURE SENSITIVE PSMC'S: If standard pack quantities are broken to fulfill end customer orders, distributors will rebag the product for shipment to the end customer in keeping with manufacturer guidelines for the packing and handling of moisture sensitive devices.

The result of these ongoing efforts will allow the Distribution community to better serve their broad customer base with increased gains in efficiency and productivity. The overriding goal of Distributors throughout this process remains the timely delivery of product to the customer

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while minimizing the invasion of the Manufacturer's various levels of packaging thereby maintaining the "factory sealed quality" of the product.

A NEDA Task Force comprised of distributors and their suppliers was formed to develop standards and recommendations responsive to these needs. During 1992, a subcommittee of the NEDA Semiconductor Packing and Handling Task Force examining the identification, labeling, packing and handling of moisture sensitive integrated circuits, developed this Guideline.

NEDA Distributors and the Task Force would like to emphasize the following:

1. When these efforts began, the industry had nothing addressing these issues.

2. While they may not represent ultimate or ideal long term solutions for either the manufacturers or the distributors, this Guideline represents an important <u>starting point</u> from which to build.

3. Compliance will not happen overnight. All parties can use these items as goals to work towards over a reasonable length of time. Compliance will be monitored with the continuously revised publication of the accompanying Implementation Matrix.

4. While this Guideline may not share unanimous agreement**,** a <u>majority</u> consensus <u>generally endorses</u> it.

5. Compliance by manufacturers and distributors with these Guidelines is strictly voluntary.

6. In some instances, a middle ground may exist. Over time, this group may wish to reconvene in some manner to discuss the addition of other items and possible implementation of some of the comments that have been raised. Over time, it would seem reasonable to expect all parties to move towards a common ground as manufacturer and distributor capabilities mutually evolve in an attempt to better serve customer needs.

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The following distributors and manufacturers participated in the Task Force which developed these Guidelines:

Anthem Electronics
Arrow Electronics
Bell Industries
Hall-Mark Electronics
Avnet Electronics
Marshall Industries
Pioneer-Standard Electronics
Wyle Laboratories/EMG

Advanced Micro Devices
Analog Devices
Chips and Technologies
Cypress Semiconductor
Harris Semiconductor
Intel
Lattice Semiconductor
Linear Technology
Motorola
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Signetics
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