



PRINCETON TECHNOLOGY

QUALITY MANAGEMENT SYSTEM DOCUMENT

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APPROVALS

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QMS-002 Static Sensitive Packaging Requirements

1 PURPOSE:

To protect static sensitive parts from physical and environmental damage.

2 SCOPE:

This process shall apply to any Princeton Technology Supplier that deals with the transport of static sensitive devices. When preservation, packaging, or marking requirements are detailed on parts drawings or procurement specification, they shall take precedence over the requirements of this attachment.

3 RESPONSIBILITIES:

Quality Assurance – To maintain and update procedure as needed to be compliant with regulatory and customer requirements and to ensure suppliers are following Princeton Technology Corp. (PTC) requirements.

Purchasing – PTC purchasing agents will be responsible to ensure the flow down to any supplier of the quality requirement. Purchase orders or request for quotes shall make reference to the quality requirement.

Receiving/Shipping – Receiving shall notify the quality department of any static sensitive material that has been supplied incorrectly. PTC non-conforming material process (ADM006) shall be followed if any static generating material does not comply with the quality requirement. Shipping shall follow the quality requirements when shipping any static sensitive product to PTC suppliers or customers.

Manufacturing – Material that has been released for production or raw goods that are returned to storage shall conform to the static sensitive requirements listed below.

4 PROCEDURE:

Standard Packaging Requirements

1. THE PRESERVATION, PACKAGING AND PACKING OF SUPPLIES AND EQUIPMENT FOR SHIPMENT SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS FOR COMMERCIAL PACKAGING DESCRIBED BELOW. SHIPMENTS SHALL BE DELIVERED TO THEIR DESTINATION WITH MINIMAL DAMAGE TO THE PACKAGE AND NO DAMAGE TO THE CONTENTS.

1.1 ITEMS SHALL BE FREE OF DIRT AND OTHER CONTAMINANTS WHICH WOULD REQUIRE CLEANING BY THE VENDOR PRIOR TO USE. COATINGS AND PRESERVATIVES APPLIED TO THE ITEM FOR PROTECTION ARE NOT CONSIDERED CONTAMINANTS.

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- 1.2 ITEMS SUSCEPTIBLE TO CORROSION OR DETERIORATION SHALL BE PROTECTED USING COATINGS, PRESERVATIVES, DESICCATED UNIT PACKS, OR NITROGEN STORAGE UNITS. THE USE OF MOISTURE INDICATOR CARDS SHALL APPLY FOR ANY DEVICES SUSCEPTIBLE TO MOISTURE SENSITIVITY.
- 1.3 ITEMS REQUIRING PROTECTION FROM PHYSICAL AND MECHANICAL DAMAGE OR WHICH ARE FRAGILE SHALL BE PROTECTED BY WRAPPING, CUSHIONING, PACK COMPARTMENTALIZATION, CARTONIZING, OR OTHER MEANS TO MITIGATE SHOCK AND VIBRATION DURING SHIPMENT AND HANDLING.
 - 1.3.1 WRAPPED AND BAGGED ITEMS SHALL BE PLACED INSIDE CONTAINERS OF APPROPRIATE SIZE. BULK PACKAGING IS EXCLUDED UNLESS SPECIFIED BY THE PURCHASING AUTHORITY.
2. UNIT PACKAGE: A UNIT PACKAGE SHALL BE SO DESIGNED AND CONSTRUCTED THAT IT WILL CONTAIN THE CONTENTS WITH NO DAMAGE TO THEM, AND WITH MINIMAL DAMAGE TO THE UNIT PACK DURING SHIPMENT AND STORAGE IN THE SHIPPING CONTAINER AND WILL ALLOW SUBSEQUENT HANDLING.
 - 2.1 UNIT PACKAGE QUANTITY: UNLESS OTHERWISE SPECIFIED, THE UNIT PACKAGE QUANTITY SHALL BE ONE EACH PART, SET, OR ASSEMBLY. SMALL LIGHTWEIGHT ITEMS ARE EXCEPTED, SUCH AS HARDWARE, SMALL DURABLE MECHANICAL PARTS. BULK PACKAGING IS EXCLUDED UNLESS SPECIFIED IN THE DESCRIPTION OR BY THE PURCHASING AUTHORITY.
3. THE USE OF INTERMEDIATE PACKAGING IS ENCOURAGED PARTICULARLY WHEN USE ENHANCES HANDLING AND INVENTORYING. UNLESS OTHERWISE SPECIFIED, INTERMEDIATE PACKAGING IS REQUIRED TO FACILITATE HANDLING AND INVENTORY.
4. UNIT PACKAGES AND INTERMEDIATE PACKAGES NOT MEETING THE REQUIREMENTS FOR A SHIPPING CONTAINER SHALL BE TREATED AS A UNIT PACKAGE AND PACKED IN SHIPPING CONTAINERS.
 - 4.1 SHIPPING CONTAINERS, INCLUDING ANY BLOCKING, BRACING, CUSHIONING, OR WATERPROOFING, SHALL COMPLY WITH THE REGULATIONS OF THE CARRIER USED AND/OR CUSTOMER REQUIREMENTS SHALL PROVIDE SAFE DELIVERY TO THE DESTINATION AT THE LOWEST COST. SHIPPING CONTAINERS WILL BE CAPABLE OF MULTIPLE HANDLING AND STORAGE UNDER FAVORABLE CONDITIONS FOR A MINIMUM OF ONE YEAR.

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- 4.2 THESE REQUIREMENTS CAN BE USED FOR EXPORT SHIPMENTS WHEN FAVORABLE CONDITIONS ARE PROVIDED, SUCH AS CONTAINERIZATION MEDIA AND ENCLOSED AREA RECEIVING.
5. SHIPMENTS SHOULD BE CONSIDERED FOR UNITIZATION WHERE APPROPRIATE. UNITIZATION INCLUDES, BUT IS NOT LIMITED TO, BUNDLING, CONSOLIDATION IN A CONTAINER OR PLACEMENT ON A PALLET. UNLESS OTHERWISE SPECIFIED SHIPMENT TO THE DEPARTMENT OF DEFENSE SHALL BE UNITIZED INTO A SINGLE LOAD IN SUCH A MANNER THAT THE LOAD CAN BE HANDLED AS A UNIT THROUGHOUT THE DISTRIBUTION SYSTEM.

Electrical Component Packaging

(Use one of the following or a combination of the following methods)

The supplier is required to have an electrostatic Discharge (esd) control program plan if esd sensitive items are removed from or processed outside of specified Esd protective packaging.

1. IF NOT HARMFUL TO LEADS, INSERT PART, OR PARTS INTO UNIT BAG, BOX, TUBE, OR VIAL. IF NECESSARY, PROTECT ALL CRITICAL PORTIONS OF THE PART, SUCH AS LEADS, TERMINALS, SHAFTS, ETC., FROM ANY LOAD WITH SUITABLE INSERTS, COLLARS, SLEEVES, COVERS OR CAPS MADE FROM NON-STATIC GENERATING MATERIAL. (MATRIX TRAYS ARE RECOMMENDED FOR FINE PITCH LEAD PARTS.)
2. PLACE PART, OR PARTS INTO, AN ANTISTATIC BOX WITH CONDUCTIVE FOAM, OR A CONDUCTIVE BOX WITH ANTISTATIC FOAM, WITH LEADS INSERTED INTO THE FOAM. CLOSE THE BOX LID, BY LATCHING OR TAPING, WITH A SLIGHT COMPRESSION. LEADLESS PARTS SHALL BE PACKAGED TO RESTRICT MOVEMENT. THE PARTS SHALL NOT CONTACT EACH OTHER.
3. FILL STATIC DISSIPATIVE, CONDUCTIVE, OR STATIC SHIELDING STICK PACK TO CAPACITY WITH DUAL IN-LINE PACKAGES (DIP'S) OR OTHER COMPONENTS. THE #1 PIN OF ALL DIP'S SHALL BE ORIENTED IN THE SAME DIRECTION. ANTISTATIC OR CONDUCTIVE RESTRICTIVE DEVICES SHALL BE INSERTED IN EACH END OF THE STICK PACK. IF LESS THAN A FULL STICK PACK IS REQUIRED, A RESTRICTIVE DEVICE SHALL BE USED TO PREVENT MOVEMENT.

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4. FILL STATIC DISSIPATIVE, CONDUCTIVE, OR STATIC SHIELDING SLIDE PACK WITH PARTS TO CAPACITY. A PIN OR PLUG SHALL BE INSERTED IN EACH END OF THE SLIDE PACK. IF LESS THAN A FULL SLIDE PACK IS REQUIRED, A SUITABLE PIN, PLUG OR RESTRICTIVE DEVICE SHALL BE USED TO RESTRICT MOVEMENT OF THE PARTS.
5. PLACE PARTS IN ANTISTATIC, CONDUCTIVE, OR STATIC SHIELDING MOLDED TRAYS THAT HAVE LIDS THAT RESTRICT MOVEMENT OF THE PARTS.
6. LEADED PARTS AND CHIPS MAYBE PLACED IN TAPE AND REEL, REEL PACKS, OR WAFFLE PACKS.
7. REGARDLESS OF THE METHOD USED, THE LEADS OF ALL ELECTRONIC COMPONENTS SHALL BE MAINTAINED IN THE NATURAL STRAIGHT OR, IF REQUIRED, PREFORMED CONDITION.
8. PACKAGE AND LABEL PLASTIC ENCAPSULATED MICROCIRCUITS (PEMS)/MOISTURE SENSITIVE DEVICES (MSDS) PER J-STD-033.
9. THE USE OF FOAM PACKAGING MATERIALS WHICH UTILIZE CHLOROFLUOROCARBONS (CFCs) IS DISCOURAGED DUE TO ENVIRONMENTAL IMPACT CONCERNS.
10. PACKAGING, PACKING AND MARKING OF HAZARDOUS AND MAGNETIZED MATERIALS SHALL COMPLY WITH APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.
11. WHEN PRESERVATION, PACKAGING, OR MARKING REQUIREMENTS ARE DETAILED ON PARTS DRAWINGS OR PROCUREMENT SPECIFICATIONS, THEY SHALL TAKE PRECEDENCE OVER THE REQUIREMENTS OF THIS ATTACHMENT.
12. CUSHIONING SHALL BE OF NONSTATIC GENERATING, NONCORROSIVE AND NONSHEDDING MATERIAL. SHREDDED PAPER IS NOT ALLOWED.
13. ALL UNIT CONTAINERS SHALL BE OF NONSTATIC GENERATING, STATIC DISSIPATIVE, CONDUCTIVE, OR STATIC SHIELDING MATERIAL AND SHALL BE OF SUFFICIENT QUALITY AND STRENGTH TO INSURE SAFE ARRIVAL OF PARTS.

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14. IF THE UNIT CONTAINER IS NOT A CONDUCTIVE, OR STATIC SHIELDING BAG, OR BOX, IT MUST BE PACKED INTO A CONDUCTIVE OR STATIC SHIELDING BAG OR BOX.
15. ITEMS THAT ARE SHELF LIFE SENSITIVE SHALL SHIP WITH AT A MINIMUM OF 80% OF THE SHELF REMAINING AT TIME OF RECEIPT. ITEMS THAT REQUIRE COLD STORAGE OR SPECIAL REFRIGERATION SHALL BE INDICATED ON THE OUTSIDE OF THE PACKAGE AND BE SHIPPED IN A TIME FRAME THAT WILL NOT ALLOW THE MATERIAL TO DEGRADE.

5 REFERENCES

Document Title: Non-Conforming Material
Document Number: ADM006

Document Title: Handling, packing, shipping and use of moisture/reflow.
Document Number: J-STD-033

Revision History

Revision #	Date	ECO	Description of changes
A	3-23-09		Developed as part of AS9100 QMS program
(No change)	5-3-13	13045	No change to procedure. Just formally ECO-ing the document as it was not done at the time of first release.