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## PACKAGING OF ELECTROSTATIC DISCHARGE SENSITIVE DEVICES, PARTS AND COMPONENT ASSEMBLIES AND PROTECTION FROM FIELD FORCES

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This standard provides methods for the protection of solid state devices parts/components subject to damage from electrostatic discharge, and/or components susceptible to degradation from electromagnetic or radioactive field forces.

### IMPORTANT

SUPPLIERS ARE REQUESTED TO REVIEW THE SPECIFIC ITEMS METHOD OF PACKAGING (SEE PARAGRAPH 3.0, AS APPLICABLE), AND THE MATERIAL REQUIREMENTS SPECIFIED (SEE PARAGRAPH 5.0), AND USE THE PROPER TYPE(S) OF PACKAGES/MATERIALS, TO MEET THE REQUIREMENTS OF THIS STANDARD.

### 2.1 LMSSC DOCUMENTS

- 2.1.1 LPS 40-001, LMSSC Packaging Standard, "General Requirements Specification"
- 2.1.2 LMSSC 2.4.2-T1-SpecEng-6.1-S, "ESD Control Standard"

### 2.2 GOVERNMENT/MILITARY DOCUMENTS

- 2.2.1 MIL-STD-2073, "Standard Practice for Military Packaging"
- 2.2.2 MIL-S-19500, "Semiconductor Devices"
- 2.2.3 MIL-R-39032, "Resistors, Preparation for Delivery of"
- 2.2.4 MIL-S-19491, "Semiconductor Devices, Packaging of"
- 2.2.5 MIL-M-38510, "Microcircuits, General Specification for"
- 2.2.6 MIL-B-81705, "Barrier Materials, Flexible, Electrostatic Free, Heat Sealable"
- 2.2.7 "Code of Federal Regulations" (CFR) Title 49
- 2.2.8 MIL-STD-129, "Marking for Shipment and Storage"
- 2.2.9 DOD-STD-1686, "Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)"
- 2.2.10 DOD-HNBK-263, "Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)."

### 3.1 GENERAL

- 3.1.1 The requirements of LPS 40-001 shall be met in addition to provisions of this packaging standard.
- 3.1.2 Unless otherwise specified, the quantity per unit package shall be one (1) each.

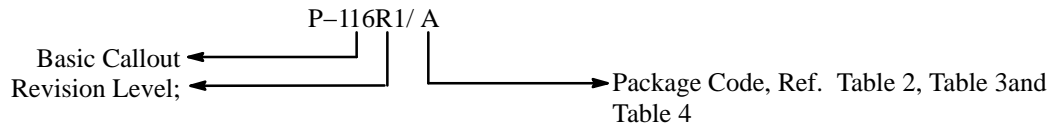
**NOTE:** Use of topically coated or carbon loaded materials are not allowed due to their contaminating qualities.

If requested by LMSSC, suppliers must produce written certification of compliance of required materials conforming to this specification.

Suppliers shall preserve and pack ESD hardware in accordance with requirements established in the Purchase Order, Statement of Work (SOW), Product Specification or Engineering Drawing. LMSSC facilities shall preserve and pack ESD hardware in accordance with 2.4.2-T1-SpecEng-6.1-S. ESD Control Standard and applicable Engineering Drawing Notes. Should there be a conflict between the requirements of this packaging standard and contractual requirements, the Contract shall take precedence.

- 3.1.3 Do not unpack and handle devices identified in the procurement document as ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESD), unless proper grounding measures are taken; e.g., grounded work station, static protective materials/packages, air ionizers, etc.
- 3.1.4 Items sensitive to ELECTROMAGNETIC/MAGNETIC field forces or RADIOACTIVE elements shall be packaged in accordance with the applicable requirements of this standard.
- 3.1.5 Containers/packages shall be of good quality consistent with acceptable commercial standards and workmanship.
- 3.1.6 When lot date code identity is specified, do not intermix items from different lots and/or lot dates within the same intermediate container/package.

**NOTE:** The basic packaging standard (P-116R1) may also identify a specific package type and size, e.g., consult Table 2, Table 3 and Table 4 for package sizes available in static protective blisters and see source chart for list of suppliers.



**CAUTION:** ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESD)/ASSEMBLIES ARE SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGE. USERS, DISTRIBUTORS/JOBBER SHOULD OBSERVE THE FOLLOWING PRECAUTIONS WHEN HANDLING THESE TYPES OF DEVICES OR ASSEMBLIES:

- DO NOT HANDLE/TRANSPORT UNLESS THE ITEMS ARE IN STATIC PROTECTIVE PACKAGES/TRAYS WITH PERSONNEL PROPERLY GROUNDED.
- DO NOT REMOVE DEVICE FROM PROTECTIVE PACKAGE EXCEPT AT A CERTIFIED GROUNDED WORK STATION.
- WORK AREAS WHICH ARE IMPOSSIBLE OR IMPRACTICAL TO GROUND, SHOULD BE KEPT FREE OF STATIC CHARGES WITH IONIZED AIR.
- WHEN DEVICE IS REMOVED FROM STATIC PROTECTIVE CONTAINER, TRAY, ETC., OPERATORS SHOULD BE PROPERLY GROUNDED E.G., STATIC PROTECTIVE WRIST STRAPS, GROUNDED STATIC PROTECTIVE WORK SURFACES, HANDLING TRAYS, ETC.
- THE REQUIREMENTS MUST BE MET IN HANDLING, PACKAGING AND SHIPPING OF THESE DEVICES/ASSEMBLIES. SUPPLIERS SHALL PRESERVE AND PACK ESD HARDWARE IN ACCORDANCE WITH REQUIREMENTS ESTABLISHED IN THE PURCHASE ORDER, STATEMENT OF WORK (SOW), PRODUCT SPECIFICATION OR ENGINEERING DRAWING. LMSSC FACILITIES SHALL PRESERVE AND PACK ESD HARDWARE IN ACCORDANCE WITH 2.4.2-T1-SPECENG-6.1-S, ESD CONTROL STANDARD AND APPLICABLE ENGINEERING DRAWING NOTES. SHOULD THERE BE A CONFLICT BETWEEN THE REQUIREMENTS OF THIS PACKAGING STANDARD AND CONTRACTUAL REQUIREMENTS, THE CONTRACT SHALL TAKE PRECEDENCE.



Insert device individually into cavity provided by Blister Package (PHE«21-1172), 10 cavities/strip, assure that device fits cavity so that the cover properly seats and securely locks both halves together. Do not fold over or bend blister strip.

<b>Package</b>	<b>Fits Axial Devices with Maximum Dimensions to:</b>	<b>LMSSC Drawing</b>
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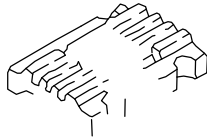
<b>Package</b>	<b>Fits DIL Device with Maximum Dimensions to:</b>	<b>LMSSC Drawing</b>
D	1.0" Long .625" Width .375" Depth	

<b>Package</b>
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**Fits "TO" Can Device  
Maximum Dimensions to:**

### 3.3.5 Flat Pack Devices

Insert device with standard lead configuration into appropriate size/type static protective carrier (see illustration).









3.8.3 Shipping container as packed shall assure protection of items and packages during ordinary handling and shipping and shall meet the minimum requirements of the common carrier for acceptance for safe transportation at the lowest rate to the point of delivery. Attach or enclose a copy of packing slip with the shipping container.

3.9 UNIT PACKAGE MARKING (Unless otherwise specified in the contract or Purchasing Document use the following criteria)

Unless otherwise specified, apply pressure-sensitive labels that permanently adhere to each blister package, individual segment, etc. Marking shall be clear and legible.

Label must show part number per contracting document, manufacturer's name (may be abbreviated but logo is not acceptable), lot date code (LDC), if applicable. Additional markings may be specified in the item detail specification, drawing or purchase order.

Apply special labels as applicable, i.e., "CAUTION SENSITIVE ELECTRONIC DEVICES," "Protected with Tarnish Inhibitor – Do Not Open Until Ready for Use or Inspection", etc.



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Packages, materials or marking which does not conform to the requirements of this standard are subject to rejection and return to supplier at his expense.

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**Commodity**