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## PACKAGING OF ELECTRONIC DEVICES AND COMPONENTS FOR AUTOMATED AND BATCH ASSEMBLY

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### **1.0 SCOPE**

This standard provides for the packaging of electronic devices and components for automated and batch assembly.

**NOTE:** This document supersedes/replaces LMSC Packaging Standards P-114 and PHE-S-8140.

**IMPORTANT:** SOME DEVICES ARE ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) AND  
CAN BE DAMAGED BY ELECTROSTATIC DISCHARGE

**1.0REFERENVICPE**





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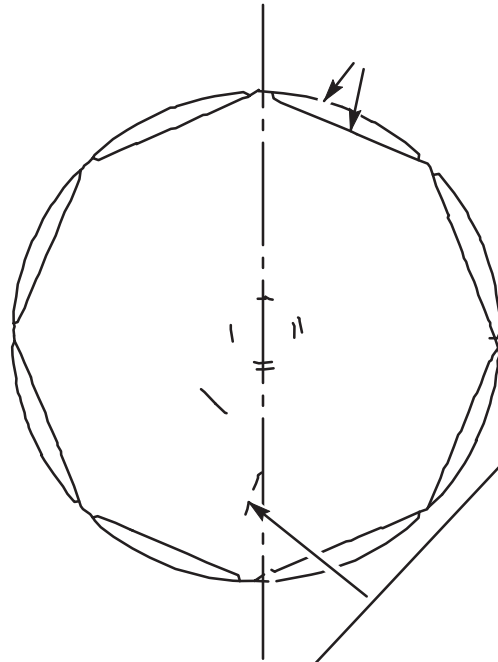
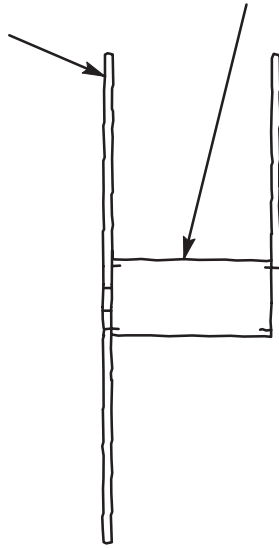
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**Table 2**

<b>Component Body Length</b>	<b>Component Body Diameter</b>	<b>Component Spacing "A" +/- 0.020"</b>
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DESIGN FLANGE MARKING (SEE  
(SEE

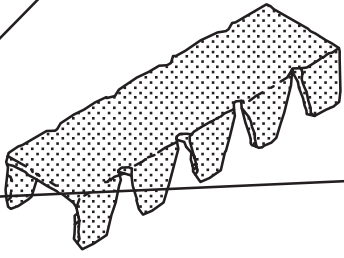


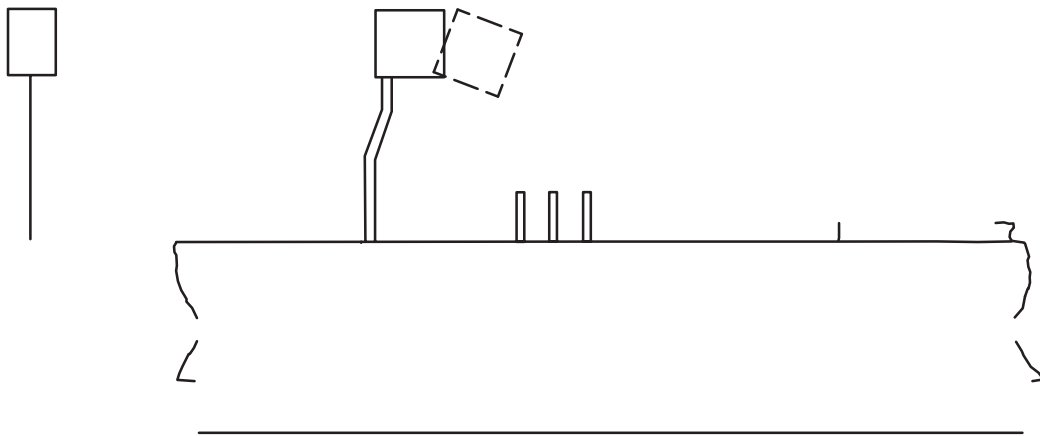
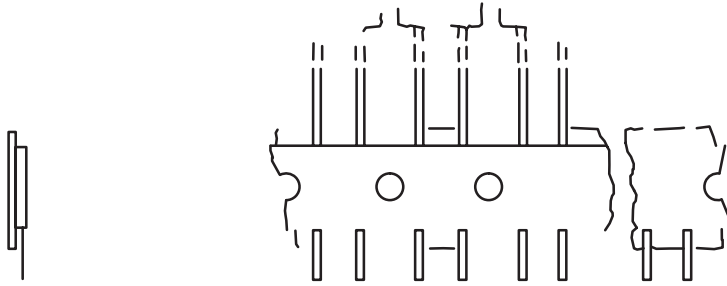
902.1.1494 Plastic pipe loads and deflections NO

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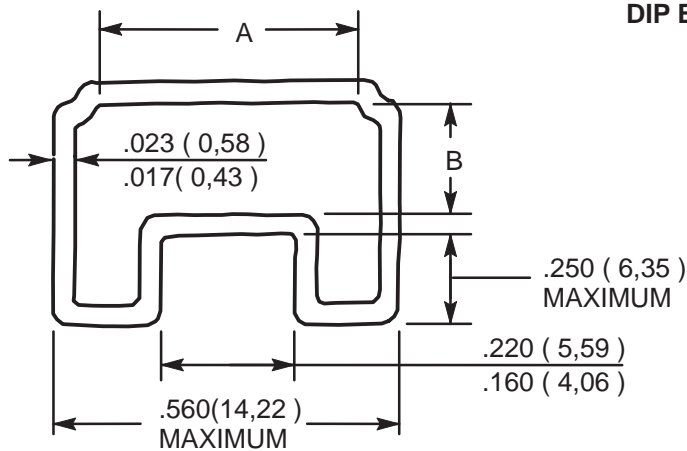
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Page 6 SECOND STRIP FIRST STRIP





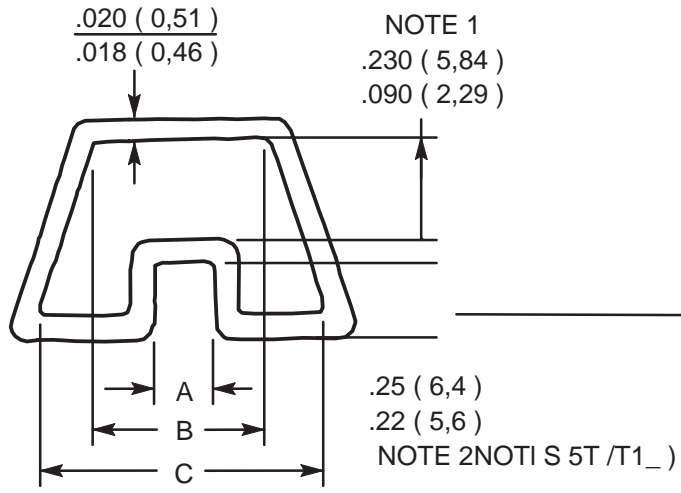
- 3.2.3.3 Tube or rail minimum height must be at least 0.020" greater than component body thickness to permit component to free fall through carrier stick.
  - 3.2.3.4 Tube or rail lead trough must be at least 0.020" greater than component lead length.
  - 3.2.3.5 The maximum space in the tube or rail for component height in Figure 6, Figure 7, and Figure 8 is:
    - For DIP bodies to 0.150", 0.200"
    - For DIP bodies from 0.150" to 0.180", 0.230"
    - For DIP bodies above 0.180", DIP height +0.050".
  - 3.2.3.6 Quantity per tube or rail shall not be forced into tube so that they buckle or overlap.
  - 3.2.3.7 The required tube or rail length is min. 19" to max 22".
  - 3.2.3.8 Material for tube or rail can be clear or opaque. Tubes or rails for ESD parts must be made of any approved static protective material and marked ESD.
  - 3.2.3.9 Do not place spacers between parts.
  - 3.2.3.10 Cut ends of tubes or rails shall be free of any deformation or burrs.
  - 3.2.3.11 Stoppers or pins shall be placed only in the ends of tubes and rails. Stoppers are the preferred method. Foam or any other stuffing material is permitted in partial tubes only. Partial tubes containing stuffing material should be labeled as such.
- 3.2.4 Special tray packaging.
- 3.2.4.1 Place individual component into part particular trays so that polarity or pin one orientation is in the same direction.



**DIP ELECTRONIC DEVICE CARRIER STICK  
FOR 2 AND 4 LEADS**

- Dip body width + .020 ( .51 ) to .060 ( 1.52 )
- Dip body height + .020 ( 0.51 )
- .200 ( 5.08 ) with dip body to .150 ( 3.18 )
- .230 ( 5.84 ) with dip body .150 ( 3.81 ) to .180 ( 4.57 )
- Dip height + .050 ( 1.27 )

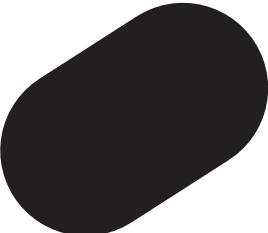
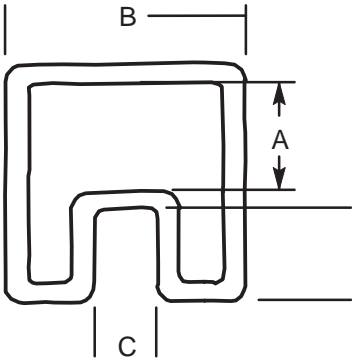




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( 5.33 )

3.4.4 Intermediate containers which meet the requirements of Paragraph 3.4.2 may be used as shipping containers.

3.4.5 Enclose or attach a copy of packing slip to the shipping container.

3.5 MARKING

3.5.1 All marking shall be legible, uniform, durable and properly placed on containers to avoid loss of identity when package is opened.

3.5.2 Labels shall not be applied within 6" of either end of the rail/tube.

3.5.3 Unit package marking shall include:

3.5.3.1 Nomenclature.

3.5.3.2 Quantity per unit package.

3.5.3.3 Supplier/Manufacturer identity (may be abbreviated but logo only is not acceptable.) If supplier is not the manufacturer, then marking shall include both supplier and manufacturer identification.

3.5.3.4 Purchase order number.

3.5.3.5 Part number per contracting document.

3.5.3.6 Special marking if specified (Serial/Lot numbers, ESD CAUTION labels, etc.)

3.5.4 Intermediate package marking.

3.5.4.1 If rail/tube consolidation bag is transparent and unit package marking is readable through the material, then the intermediate container marking requirement is unnecessary.

3.5.4.2 Label intermediate packages per 3.5.3.1 thru 3.5.3.6.

3.5.5 Shipping container marking shall include:

3.5.5.1 Part number per contracting document.

3.5.5.2 Supplier and Name.

3.5.5.3 Total number of shipping containers and destination.

3.5.5.4 Special, precautionary, and handling markings for ESD devices.

3.5.5.5 Purchase order number.

**NOTE:** Attach or enclose a copy of the packing slip in shipping container.



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