

TITLE: ELECTROSTATIC DISCHARGE (ESD) PROTECTIVE PACKAGING AND MARKING FOR ESD SENSITIVE (ESDS) ITEMS (I.E. ESDS STANDARD ELECTRONIC MODULES, PC CARDS/BOARDS, ELECTRONIC SUBASSEMBLIES AND ELECTRONIC DISCRETE PARTS) AND FOR EQUIPMENT CONTAINING ESDS ITEMS (I.E. METAL RACKS, CABINETS OR OTHER CONNECTORIZED ENCLOSURES).

A. ESDS ITEMS (ESDS STANDARD ELECTRONIC MODULES, PC CARDS/BOARDS, ELECTRONIC SUBASSEMBLIES AND ELECTRONIC DISCRETE PARTS)

1. SHALL BE INDIVIDUALLY (UNIT) PACKAGED IN A TRANSPARENT ESD PROTECTIVE BAG, TRANSPARENT ESD PROTECTIVE WRAP, OR CONDUCTIVE ESD-SAFE BOX THAT CONSISTS OF AN ANTI-STATIC INNER LAYER AND STATIC-SHIELDING OUTER LAYER.
2. SHALL HAVE AN ESD SYMBOL (EIA RS 471, MIL-STD-129P, MIL-STD-129J, OR ANSI ESD S8.1 - 2001) AND AN ESD CAUTION NOTE (SUCH AS "CAUTION, CONTAINS PARTS AND ASSEMBLIES SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC DISCHARGE" ATTACHED TO OR PRINTED ON THE OUTSIDE OF THE UNIT PACK.
3. SHALL HAVE AN ESD SYMBOL LABEL LOCATED ON THE OUTSIDE OF EACH PACKAGING LAYER
4. SHALL HAVE THE ELECTRIC BOAT PART NUMBER (EBPN) CLEARLY MARKED ON THE OUTSIDE OF THE ESD PROTECTIVE TRANSPARENT UNIT BAG, TRANSPARENT UNIT WRAP OR CONDUCTIVE ESD-SAFE BOX.
5. SHALL HAVE PROTECTIVE PACKAGING THAT IS FREE OF TEARS, SPLITS, HOLES, STAPLES OR OTHER DISCONTINUITIES.

B. EQUIPMENT CONTAINING ESDS ITEMS (METAL RACKS, CABINETS OR OTHER CONNECTORIZED ENCLOSURES)

1. SHALL HAVE AN ESD SYMBOL (EIA RS 471, MIL-STD-129P, MIL-STD-129J, OR ANSI ESD S8.1 - 2001) AND AN ESD CAUTION NOTE (SUCH AS "CAUTION, CONTAINS PARTS AND ASSEMBLIES SUSCEPTIBLE TO DAMAGE BY ELECTROSTATIC

DISCHARGE") ATTACHED TO THE UPPER LEFT OR RIGHT FRONT CORNER, UNLESS OTHERWISE SPECIFIED ON THE EQUIPMENT ASSEMBLY DRAWING.

2. SHALL HAVE CONDUCTIVE COVERS (I.E. CAP PLUGS, OR A SECTION OF ESD PROTECTIVE CONDUCTIVE OR STATIC DISSIPATIVE MATERIAL WITH THE CONDUCTIVE SURFACE ADJACENT TO CONTACT PINS) INSTALLED OVER CABLE CONNECTORS OR RECEPTACLES WHOSE PINS CONNECT TO CIRCUITS WHICH COULD BE DAMAGED BY ESD POTENTIALS. THE CONDUCTIVE COVERS MUST HAVE A CONDUCTIVE SURFACE RESISTIVITY AS DEFINED BY MIL-HDBK-263B. THE CONDUCTIVE COVER MUST BE SECURELY INSTALLED OVER THE CABLE CONNECTORS OR RECEPTACLES (E.G., USING TIE WRAPS OR ESD-SAFE TAPE).
3. SHALL HAVE AN ESD RS-471 SYMBOL PLACED ADJACENT TO EACH CABLE RECEPTACLE WHOSE PINS CONNECT TO CIRCUITS WHICH COULD BE DAMAGED BY ESD POTENTIALS AS DEFINED BY MIL-STD-1686B AND THE EQUIPMENT ASSEMBLY DRAWING.
4. SHALL HAVE ESD SYMBOL LABELS ON THE OUTSIDE OF EACH PACKAGING LAYER.
5. FOR EQUIPMENT USING TERMINAL BOARDS FOR CONNECTION TO EXTERNAL CABLING, EXPOSED TERMINAL STRIPS (WITHOUT COVERING PANELS/BOXES)CONNECTING TO INTERNAL ESDS CIRCUITS SHALL BE COVERED WITH STATIC DISSIPATIVE OR CONDUCTIVE ESD PACKAGING MATERIAL (STATIC DISSIPATIVE OR CONDUCTIVE LAYER ADJACENT TO TERMINALS) AND SECURED TO PREVENT INADVERTENT TERMINAL CONTACT BY PERSONNEL.

C. ADDITIONAL PACKAGING AND LABELING REQUIREMENTS

1. AN EIA RS-471 SYMBOL MUST BE PLACED ON ESDS ELECTRONIC MODULES, PC CARDS/BOARDS, ELECTRONIC SUBASSEMBLIES, AND LOWEST REPLACEABLE UNITS (LRU) IN AN AREA THAT IS VISIBLE TO PERSONNEL WHEN THE ELECTRONIC MODULE, PC CARD/BOARD, ELECTRONIC SUBASSEMBLY OR LRU IS ACCESSED IN ITS INSTALLED LOCATION.

2. ESDS ELECTRONIC DISCRETE PARTS (E.G. INTEGRATED CIRCUITS, TRANSISTORS) WITH THE SAME PART NUMBER MAY BE BULK PACKAGED IN LIEU OF SECTION A.1 REQUIREMENTS. THE BULK PACKAGED ESDS ELECTRONIC DISCRETE PARTS MUST HAVE THEIR LEADS INSERTED INTO NON-CORROSIVE HIGH-DENSITY CONDUCTIVE FOAM AND MUST BE PACKAGED IN A CONDUCTIVE ESD-SAFE BOX, OR ESD PROTECTIVE BAG THAT CONSIST OF ANTI-STATIC INNER LAYER AND STATIC SHIELDING OUTER LAYER. THE BULK PACKAGED ESDS ELECTRONIC DISCRETE PARTS MAY ALSO BE PACKAGED IN STATIC DISSIPATIVE TUBES VICE A CONDUCTIVE ESD-SAFE BOX OR ESD PROTECTIVE BAG. IF USING STATIC DISSIPATIVE TUBES, THE LEADS OF THE ELECTRONIC DISCRETE PARTS DO NOT REQUIRE INSERTION INTO NON-CORROSIVE HIGH-DENSITY CONDUCTIVE FOAM.

3. WHERE MORE THAN ONE ITEM IS REQUIRED FOR A PACKAGED SET, ALL ITEMS OF THE PACKAGED SET MAY BE PACKAGED TOGETHER IN LIEU OF SECTION A.1 REQUIREMENTS. THE PACKAGED SET MUST BE PACKAGED IN A TRANSPARENT ESD PROTECTIVE BAG, TRANSPARENT ESD PROTECTIVE WRAP, OR CONDUCTIVE ESD-SAFE BOX THAT CONSISTS OF AN ANTI-STATIC INNER LAYER AND STATIC SHIELDING OUTER LAYER. A "PACKAGED SET" IS DEFINED AS A COLLECTION OF MULTIPLE AND/OR DIFFERENT ITEMS ALL REFERENCED UNDER THE SAME PART NUMBER.

4. ANTI-STATIC PINK POLYESTER BAGS OR WRAP MAY BE USED AS SECONDARY WRAPPING (I.E. INTERMEDIATE PACKAGING) FOR ESDS ITEMS, OR USED TO WRAP ESDS ITEMS BEFORE THEY ARE PLACED IN ESD PROTECTIVE UNIT PACKAGING. ANTI-STATIC PINK POLYESTER BAGS OR WRAP MAY NOT BE USED AS ESD UNIT PACKAGING.

5. PAPERWORK (E.G. INVOICES, SLIPS, TAGS) SHALL NOT BE PLACED WITHIN ANY UNIT PACKAGE CONTAINING THE ESDS ITEM(S). HOWEVER, THE PAPERWORK MAY BE ATTACHED TO THE OUTSIDE OF THE UNIT PACKAGE. THE ESDS ITEM MUST BE PACKAGED IN ESD UNIT PACKAGING PRIOR TO ATTACHING THE PAPERWORK.

6. UTILIZING ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) PACKAGING FOR PARTS, ASSEMBLIES, OR

EQUIPMENT THAT ARE NOT ESDS IS STRICTLY PROHIBITED. APPLYING ESDS LABELS OR MARKINGS TO PARTS, ASSEMBLIES, OR EQUIPMENT THAT ARE NOT ESDS OR TO THE PACKAGING OF PARTS, ASSEMBLIES, OR EQUIPMENT THAT ARE NOT ESDS, IS STRICTLY PROHIBITED. INCORRECT OR IMPROPER ESDS IDENTIFICATION OF NON-ESDS ITEMS, OR THE PACKAGING OF NON-ESDS ITEMS IN ESDS PACKAGING, WILL BE CAUSE FOR REJECTION BY ELECTRIC BOAT CORPORATION.