
CHANGE HISTORY:

REV 09 ADDED A.7 concerning FOD.

01-09-06

This specification is provided to describe Raytheon Company's minimum packaging requirements. Shipments are to be delivered to their final destination with minimal damage to the package and no damage to the contents. This document is superseded by any special requirements listed on drawings or specifications. Any questions concerning packaging or materials should be directed to the buyer referenced on the Purchase Order.

A. Packaging, packing and preservation:

A.1. Packaging of items: except for ammunition, explosives, hazardous materials, tape and reel components and Plastic Encapsulated Microcircuits (PEMs), the supplier shall follow ASTM-3951 (Standard Practice for Commercial Packaging).

A.2. Packaging, handling, and marking of PEMs shall be in accordance with JOINT INDUSTRY STANDARD, IPC/JEDEC J-STD-033. All packages of PEMs shall be labeled with the appropriate moisture sensitive caution symbol and applicable moisture sensitivity level (level 1 through level 6) on unit, intermediate and shipping containers. Major categories are (but not limited to): J-bend and gull-wing leaded packages such as Plastic Leaded Chip Carriers (PLCCs), Small Outline Integrated Circuits (SOICs), Plastic Quad Flat Packs (PQFPs) and Thin Small Outline Packages (TSOPs).

A.3. Packaging of Tape and Reel Components**A.3.1. Axial Devices:**

Suppliers of axial lead configuration devices shall tape and reel components in accordance with ANSI/EIA-296. The inside tape spacing is to be 2.063 ± 0.059 inches. Lot sizes 200 or greater shall be taped and reeled. A minimum 12 inch leader is required on reeled components and only on the finished length of taped components attached to the hub of the reel. Lot sizes less than 200 shall be taped and may be ammo packed in lieu of reeling.

A.3.2. Radial Devices:

Suppliers of radial lead configuration devices shall tape and reel components in accordance with ANSI/EIA-468. However, the height to seating plane dimension shall be 0.650 inches minimum to 0.885 inches maximum. A tape trailer of at least 3 feed holes is required at the end of the tape to feed the last component into the dispensing head. Lot sizes 200 or greater shall be taped and reeled. Lot sizes less than 200 shall be taped and may be ammo packed in lieu of reeling.

A.3.3. Surface Mount Devices:

Suppliers of surface mount configuration devices shall tape and reel all components in accordance with ANSI/EIA-481. Ammo packing is not allowed. However, the tape and reeled lot is to be packaged (overpacked) for shipment in accordance with ASTM-3951.

A.4. Packaging of Non-Tape and Reel Components

The requirement for non-tape and reeling of components shall be in accordance with this document, unless noted otherwise on the Purchase Order.

A.5. Packaging of Hazardous Materials:

Packaging, packing and marking of hazardous materials shall comply with applicable regulations of the United States Department of Transportation (DOT). Import or export of hazardous (dangerous goods) and magnetized materials shall comply with the applicable regulations of the DOT, United Nations and the country of origin. Suppliers of assemblies containing explosives must supply Raytheon Packaging Engineering with a copy of the Certificate of Competent Authority (CCA), obtained through the DOT.

A.6. ESD sensitive devices shall be packaged in compliance with ASTM-D-3951 and use only packaging materials that will protect the part from electrostatic discharge damage and corrosion during long-term storage and in-plant handling.

* A.7. Packaging shall be performed in a manner that protects parts and eliminates Foreign Object Damage/Foreign Object Debris (FOD). At a minimum this means packaging shall be sequenced to facilitate cleanliness, handling, shipping, and storage. Specific methods and materials to be used or avoided may be written into the Purchase Order.

B. Shipping Containers:

Containers shall be packed to insure carrier acceptance, safe delivery and adequate storage at end location. Containers shall be in accordance with the rules and regulations of carrier applicable to the mode of transportation. Containers shall be domestic and a minimum size to provide a snug fit for the item. Unit containers shall also be constructed so as not to permit damage to the contents and to facilitate subsequent handling.

Rule 41: Raytheon insists on strict compliance with rail classification Rule 41 as minimum requirements of fiberboard containers (regarding weight and size limitations).

C. Skid Requirements:

To accommodate movement during shipment and after receipt, large, heavy or bulky boxes shall be provided with skids in good condition and of adequate construction to support the load.

D. Markings

D.1 Marking shall be in accordance with carrier rules and regulations. Hazardous materials or restrictive items must be properly marked per Department of Transportation (DOT) requirements.

D.1.1. U.N. markings for hazardous materials:

Exterior shipping containers shall be marked with U.N. certification markings (POP) indicating the level of performance achieved through testing.

D.1.2. Magnetic and electrostatic discharge sensitive items must be properly marked, labeled or stenciled with proper cautionary information.

D.2. Minimum Container Marking:

Each unit and outer container shall be marked with Raytheon part number and quantity. Unit containers are exempt from marking only if they hold one (1) part each and the Raytheon part number is visible on the part, through the container (i.e. a clear plastic box).

D.2.1. Reusable shipping container markings:

Reusable shipping containers shall have all old labels and markings, those which no longer apply, obliterated or obscured (i.e. "Empty" labels, "BOX _ of _" markings, UPS labels, etc.). The only acceptable markings will be those that are applicable to the current shipment.

* ADDITION/REVISION