DataSourceCD Q1-2003: Xilinx Packaging and Thermal Characteristics
Tape and Reel

Contents

This section contains the following information:

Introduction

Xilinx offers a tape and reel packing for PLCC, BGA, QFP, and SO packages. The packing material is made of black conductive Polystyrene and protects the packages from mechanical and electrical damage. The reel material provides a suitable medium for pick and place equipment.

The tape and reel packaging consists of a pocketed carrier tape, sealed with a protective cover. The device sits on pedestals (for PLCC, QFP packages) to protect the leads from mechanical damage. All devices loaded into the tape carriers are baked, lead scanned before the cover tape is attached and sealed to the carrier. In-line mark inspection for mark quality and package orientation is used to ensure shipping quality.

Benefits

- Increased quantity of devices per reel versus tubes improves cycle time and reduces the amount of time to index spent tubes.
- Tape and reel packaging enables automated pick and place board assembly.
- Reels are uniform in size enabling equipment flexibility.
- Transparent cover tape allows device verification and orientation.
- Anti-static reel materials provides ESD protection.
- Carrier design include a pedestal to protect package leads during shipment.
- Bar code labels on each reel facilitate automated inventory control and component traceability.
- All tape and reel shipments include desiccant pouches and humidity indicators to insure products are safe from moisture.
- Compliant to Electronic Industries Association (EIA) 481. Material and Construction Carrier Tape
- The pocketed carrier Tape is made of conductive polystyrene material, or equivalent, with a surface resistivity level of less than 106 ohms per square inch.
- Devices are loaded "live bug" or leads down, into a device pocket.
- Each carrier pocket has a hole in the center for automated sensing of whether a unit is in the pocket or not.
- Sprocket holes along the edge of the carrier tape enable direct feeding into an automated board assembly equipment.

Cover Tape

An anti-static, transparent, polyester cover tape, with heat activated adhesive coating, sealed to the carrier edges to hold the devices in the carrier pockets.

Surface resistivity on both sides is less than 1011 ohms per square inch.

Reel

The reel is made of anti-static Polystyrene material. The loaded carrier tape is wound onto this conductive plastic reel.

A protective strip made of conductive Polystyrene material is placed on the outer part of the reel to protect the devices from external pressure in shipment.

Surface resistivity is less than 1011 ohms per square inch.

Device loading orientation is in compliance with EIA Standard 481.

Bar Code Label

The bar code label on each reel provides customer identification, device part number, date code of the product and quantity in the reel.

Print quality are in accordance with ANSI X3.182-1990 Bar Code Print Quality Guidelines. Presentation of Data on labels are EIA-556-A compliant.

The label is an alphanumeric, medium density Code 39 labels.

This machine-readable label enhances inventory management and data input accuracy.

Shipping Box

The shipping container for the reels are in a 13" x 13" x 3" C-flute, corrugated, #3 white "pizza" box, rated to 200 lb. test.

Table 1: **Tape and Reel Packaging**

Package Code	Qty. per Reel	Reel Size (inches)	Carrier Width (mm)	Cover Width (mm)	Pitch (mm)
BG225(1)	500	13	44	37.5	32
BG256(1)	500	13	44	37.5	32
BG272(1)	500	13	44	37.5	32
CP56(1)	4000	13	12	9.2	8
CS48(1)	1500	13	16	13.3	12
CS144(1)	2000	13	24	21.0	16
FG256(1)	1000	13	24	21.0	20
FG456(1)	500	13	44	37.5	32
FG676(1)	500	13	44	37.5	32
PC20(1)	750	13	16	13.3	12
PC44(1)	500	12	32	25.5	14
PC68(1)	250	13	44	37.5	32
PC84(1)	250	13	44	37.5	36
PQ100	250	13	44	37.5	32
PQ160	200	13	44	37.5	40

Table 1: **Tape and Reel Packaging *(Continued)***

Package Code	Qty. per Reel	Reel Size (inches)	Carrier Width (mm)	Cover Width (mm)	Pitch (mm)
SBGA352(1)	200	13	56	49.5	40
SBGA432(1)	200	13	56	49.5	48
SBGA560(1)	200	13	56	49.5	48
SO8	750	7	12	9.2	8
SO20	1000	13	24	21.0	12
TQ100	1000	13	24	21.0	32
TQ144	750	13	44	37.5	24
VO8	750	7	12	9.2	8
VQ44	2000	13	24	21.0	16
VQ64	2000	13	24	21.0	16
VQ100	1000	13	24	21.0	32

Notes:
1. In-house capability.

Standard Bar Code Label Locations

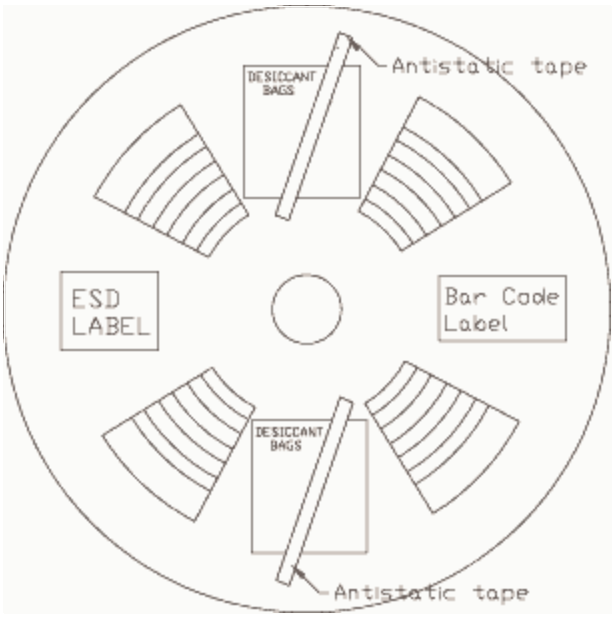

Figure 1: **Standard Bar Code Label Locations**

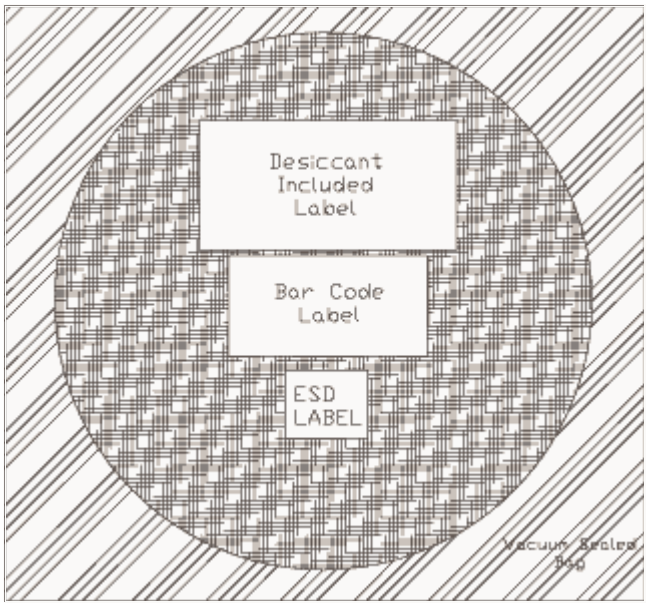

Figure 2: **Standard Bar Code Label Locations**

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