

General Description:

Half watt, General purpose, Medium Current Surface Mount Zener in the SOD-123 package. The SOD-123 package has the same footprint as the glass mini-melf (LL-34) package & provides a convenient alternative to the Leadless package.

Features:

- Compact surface mount with same footprint as mini-melf
- 500 mW rating on FR-4 or FR-5 board.
- Class 3 ESD rating (>16 kV) per Human Body Model

Ordering:

- 7 inch reel (178 mm); 8 mm Tape; 3,000 units per reel.

Absolute Maximum Ratings (note 1) TA = 25°C unless otherwise noted

| Parameter | Value | Units |
|---|-------------|-------|
| Storage Temperature | -55 to +150 | °C |
| Maximum Junction Temperature | -55 to +150 | °C |
| Total Power Dissipation at 25°C | 500 | mW |
| Derate above 25°C | 6.7 | mW/°C |
| Thermal Resistance (R _{θJA}) Junction to Ambient (note 2) | 340 | °C/W |
| Maximum Temperature Coefficient | 0.084 | %/°C |
| Nominal Zener Voltage (V _Z) at 7.4 mA | 17.0 | V |

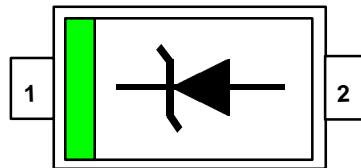
Note 1: These ratings are limiting values above which the serviceability of any semiconductor device may be impaired

Note 2: FR-4 or FR-5 = 3.5 x 1.5 inches using minimum recommended Land Pads.

Top Mark: **J2**

1: Cathode

2: Anode



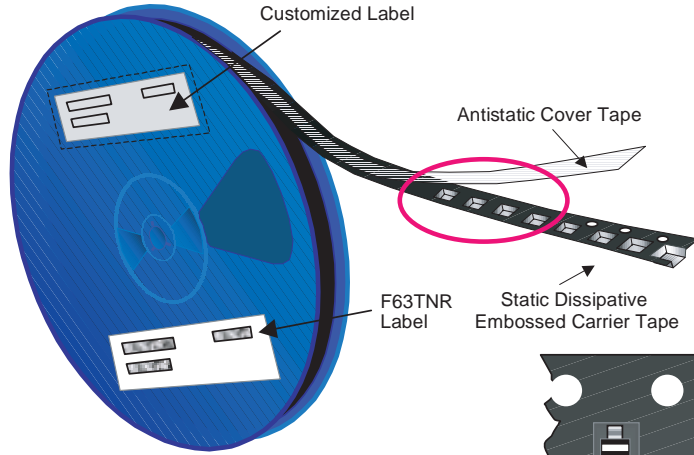
Electrical Characteristics TA = 25°C unless otherwise noted

| SYM | CHARACTERISTICS | MIN | MAX | UNITS | TEST CONDITIONS |
|-----------------|----------------------|----------------|----------------|--------|---|
| V _Z | Zener Voltage | 16.15 15.97 | 17.85 17.41 | V V | I _{ZT} = 7.4 mA D.C. I _{ZT} = 7.4 mA Pulse 26 mS |
| Z _Z | Zener Impedance | | 19.0 | Ohms | I _{ZT} = 7.4 mA |
| Z _{ZK} | Zener Knee Impedance | | 600 | Ohms | I _{ZK} = 250 uA |
| I _R | Reverse Leakage | | 100 | nA | V _R = 13.0 V |
| V _F | Forward Voltage | | 900 | mV | I _F = 10 mA |

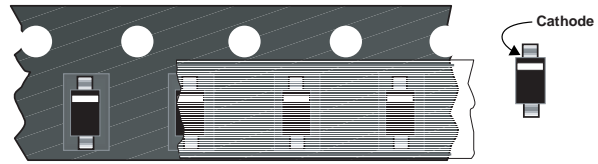
SOD-123 Tape and Reel Data and Package Dimensions



SOD123 Packaging Configuration: Figure 1.0

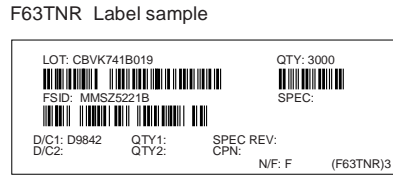
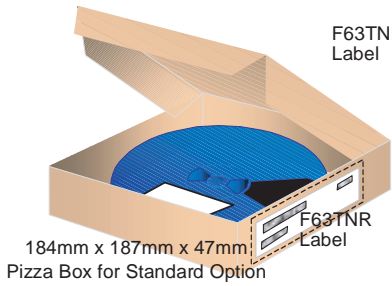
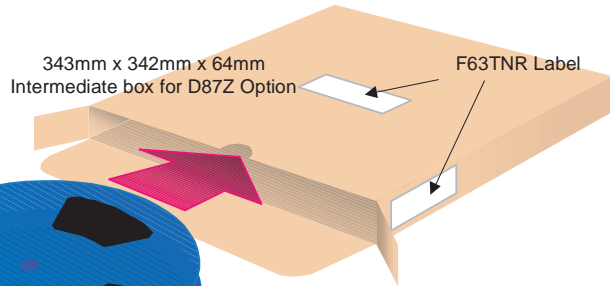


Packaging Description:
 SOD123 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 177cm diameter reel. The reels are dark blue in color and is made of polystyrene plastic (anti-static coated). Other option comes in 10,000 units per 13" or 330cm diameter reel. This and some other options are described in the Packaging Information table.
 These full reels are individually barcode labeled and placed inside a pizza box (illustrated in figure 1.0) made of recyclable corrugated brown paper with a Fairchild logo printing. One pizza box contains three reels maximum. And these pizza boxes are placed inside a barcode labeled shipping box which comes in different sizes depending on the number of parts shipped.

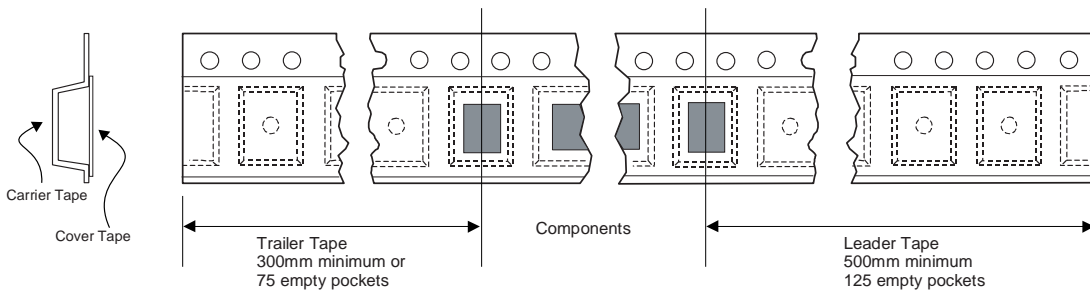


SOD123 Unit Orientation

| SOD123 Packaging Information | | | |
|------------------------------|-------------------------|---------------------|------------|
| Packaging Option | Standard (no flow code) | L99Z | D87Z |
| Packaging type | TNR | TNR | TNR |
| Qty per Reel/Tube/Bag | 3,000 | 3,000 | 10,000 |
| Reel Size | 7" Dia | 7" Dia | 13" |
| Box Dimension (mm) | 184x187x47 | 184x187x47 | 343x343x64 |
| Max qty per Box | 9,000 | 9,000 | 30,000 |
| Weight per unit (gm) | 0.01 | 0.01 | 0.01 |
| Weight per Reel (kg) | 0.123 | 0.123 | 0.420 |
| Note/Comments | | No marking required | |

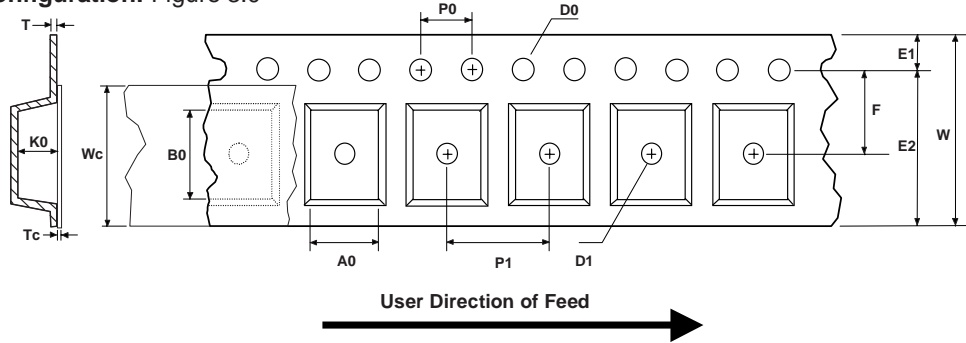


SOD123 Tape Leader and Trailer Configuration: Figure 2.0



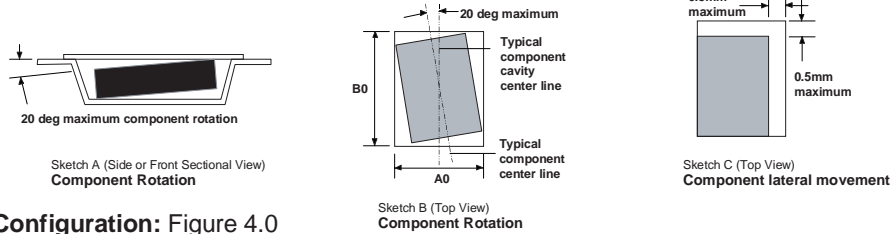
SOD-123 Tape and Reel Data and Package Dimensions, continued

SOD123 Embossed Carrier Tape Configuration: Figure 3.0

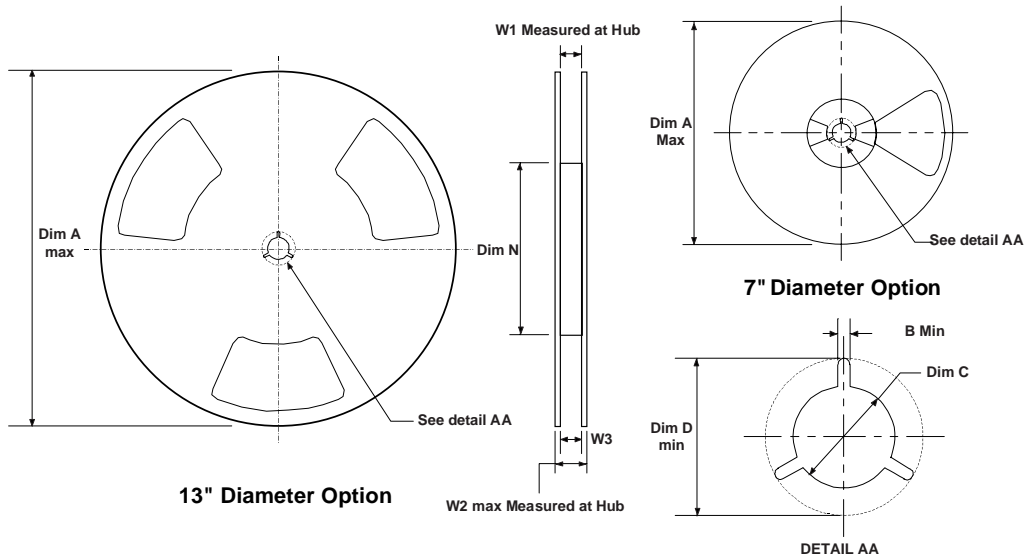


| Dimensions are in millimeter | | | | | | | | | | | | | | |
|------------------------------|-----------------|-----------------|---------------|-----------------|-------------------|-----------------|-------------|-----------------|---------------|---------------|-----------------|-------------------|---------------|-----------------|
| Pkg type | A0 | B0 | W | D0 | D1 | E1 | E2 | F | P1 | P0 | K0 | T | Wc | Tc |
| SOD123 (8mm) | 1.85 +/-0.10 | 3.94 +/-0.10 | 8.0 +/-0.3 | 1.50 +/-0.10 | 1.125 +/-0.125 | 1.75 +/-0.10 | 6.25 min | 3.50 +/-0.05 | 4.0 +/-0.1 | 4.0 +/-0.1 | 1.50 +/-0.10 | 0.200 +/-0.020 | 5.2 +/-0.2 | 0.06 +/-0.02 |

Notes: A0, B0, and K0 dimensions are determined with respect to the EIA/Jedec RS-481 rotational and lateral movement requirements (see sketches A, B, and C).



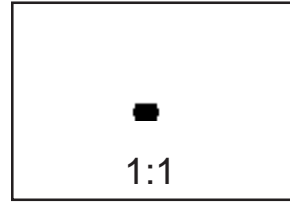
SOD123 Reel Configuration: Figure 4.0



| Dimensions are in inches and millimeters | | | | | | | | | |
|--|-------------|---------------|--------------|-----------------------------------|---------------|-------------|-----------------------------------|---------------|-----------------------------|
| Tape Size | Reel Option | Dim A | Dim B | Dim C | Dim D | Dim N | Dim W1 | Dim W2 | Dim W3 (LSL-USL) |
| 8mm | 7" Dia | 7.00 177.8 | 0.059 1.5 | 512 +0.020/-0.008 13 +0.5/-0.2 | 0.795 20.2 | 2.165 55 | 0.331 +0.059/-0.000 8.4 +1.5/0 | 0.567 14.4 | 0.311 - 0.429 7.9 - 10.9 |
| 8mm | 13" Dia | 13.00 330 | 0.059 1.5 | 512 +0.020/-0.008 13 +0.5/-0.2 | 0.795 20.2 | 4.00 100 | 0.331 +0.059/-0.000 8.4 +1.5/0 | 0.567 14.4 | 0.311 - 0.429 7.9 - 10.9 |

SOD-123 Tape and Reel Data and Package Dimensions, continued

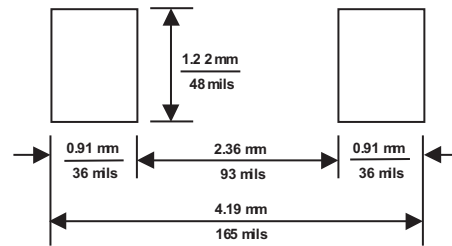
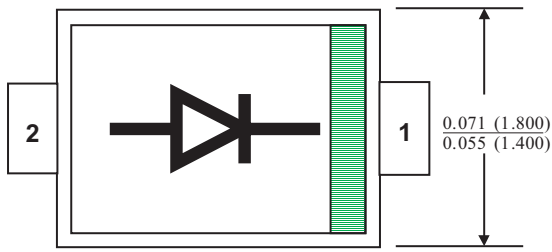
SOD-123 (FS PKG Code D6)



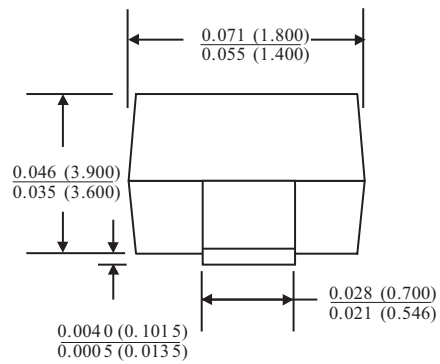
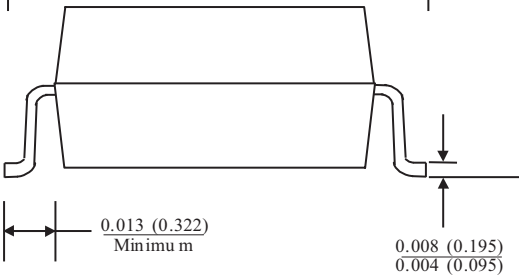
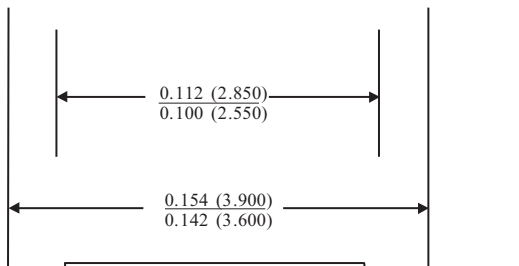
Scale 1:1 on letter size paper

Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 0.01



SOD-123 LAND PADS



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| CROSSVOLT™ | POP™ | UHC™ |
| E ² CMOS™ | PowerTrench® | VCX™ |
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