

Features

- RoHS compliant*
- Low capacitance ~ 2.5 pF
- ESD protection
- Surge protection

Applications

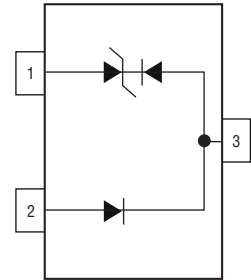
- Personal Digital Assistants (PDAs)
- Mobile phones & accessories
- Memory card protection
- SIM card port protection
- Portable electronics

CDSOT23-SLVU2.8 - Surface Mount TVS Diode

General Information

The CDSOT23-SLVU2.8 device provides ESD, EFT and Surge protection for high speed data ports meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. The Transient Voltage Suppressor Array offers a Working Peak Reverse Voltage of 2.8 V and Minimum Breakdown Voltage of 3 V.

The SOT23 packaged device will mount directly onto the industry standard SOT23 footprint. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.



Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

| Parameter | Symbol | Value | Unit |
|---|------------------|-------------|------|
| Peak Pulse Power (t _p = 8/20 μs) ¹ | P _{PK} | 600 | W |
| Peak Pulse Current (t _p = 8/20 μs) | I _{PPM} | 30 | A |
| Storage Temperature | T _{STG} | -55 to +150 | °C |
| Operating Temperature | T _{OPR} | -55 to +150 | °C |
| Minimum Breakdown Voltage @ 1 mA | V _{BR} | 3.0 | V |
| Minimum Snap Back Voltage @ 50 mA | V _{BR} | 2.8 | V |
| Maximum Working Peak Voltage | V _{WM} | 2.8 | V |
| Maximum Leakage Current @ V _{WM} (Pin 3 to Pin 1) or (Pin 2 to Pin 1) | I _D | 1.0 | μA |
| Maximum Clamping Voltage @ I _p = 2 A | V _C | 5.5 | V |
| Maximum Clamping Voltage @ I _p = 5 A (Pin 2 to Pin 1) | V _C | 7.0 8.5 | V |
| Maximum Clamping Voltage @ I _p = 30 A | V _C | 21.0 | V |
| Typical Junction Capacitance @ 0 V, 1 MHz (Pin 3 to Pin 1 & Pin 2) (Pin 2 to Pin 1 with Pin 3 NC) | C _D | 20 2.5 | pF |
| Maximum Junction Capacitance @ 0 V, 1 MHz | C _D | 3 | pF |
| Maximum Peak Reverse Voltage @ I = 10 μA | V _{RRM} | 40 | V |
| Maximum Reverse Leakage Current @ V _{WM} | I _{DR} | 0.1 | μA |
| Maximum Forward Voltage @ I _F = 1 A, 120 μS | V _F | 2 | V |

Note:

1. See Peak Pulse Power vs. Pulse Time.



WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

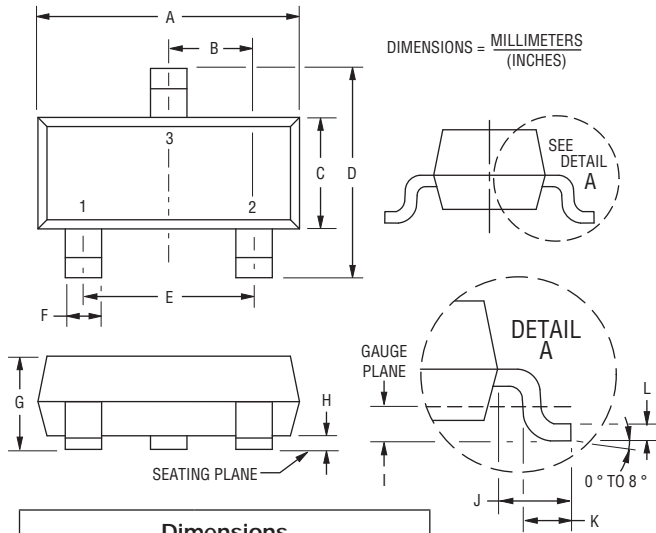
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CDSOT23-SLVU2.8 - Surface Mount TVS Diode

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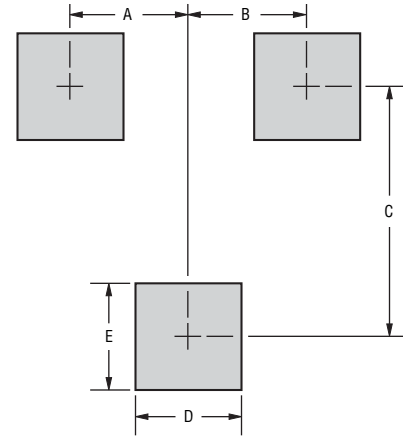
Product Dimensions

This is a molded JEDEC SOT-323 package with 100 % Matte Sn plating on the lead frame. It weighs approximately 8 mg and has a flammability rating of UL 94V-0.



| Dimensions | |
|------------|--|
| A | $\frac{2.80 - 3.00}{(0.110 - 0.118)}$ |
| B | $\frac{0.95}{(0.037)}$ BSC |
| C | $\frac{1.20 - 1.40}{(0.047 - 0.055)}$ |
| D | $\frac{2.10 - 2.49}{(0.083 - 0.098)}$ |
| E | $\frac{1.90}{(0.075)}$ BSC |
| F | $\frac{0.30 - 0.50}{(0.012 - 0.019)}$ |
| G | $\frac{0.89 - 1.17}{(0.035 - 0.046)}$ |
| H | $\frac{0.05 - 0.015}{(0.002 - 0.006)}$ |
| I | $\frac{0.25}{(0.010)}$ BSC |
| J | $\frac{0.46 - 0.64}{(0.018 - 0.025)}$ |
| K | $\frac{0.40 - 0.58}{(0.016 - 0.023)}$ |
| L | $\frac{0.08 - 0.20}{(0.003 - 0.008)}$ |

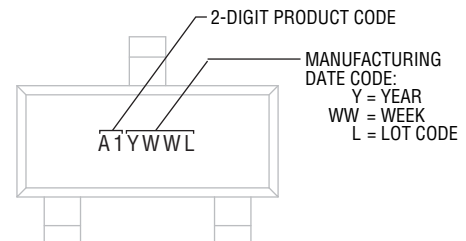
Recommended Footprint



DIMENSIONS = MILLIMETERS (INCHES)

| Dimensions | |
|------------|------------------------|
| A | $\frac{0.95}{(0.037)}$ |
| B | $\frac{0.95}{(0.037)}$ |
| C | $\frac{2.00}{(0.079)}$ |
| D | $\frac{0.85}{(0.033)}$ |
| E | $\frac{0.85}{(0.033)}$ |

Typical Part Marking



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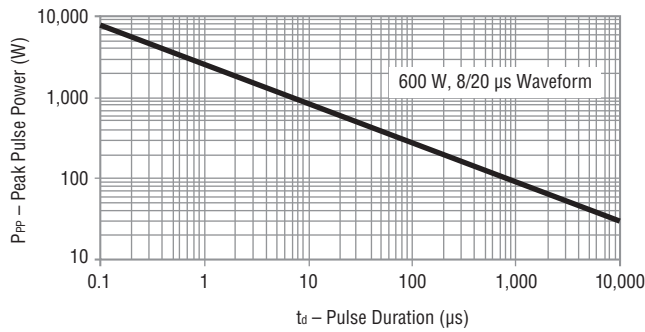
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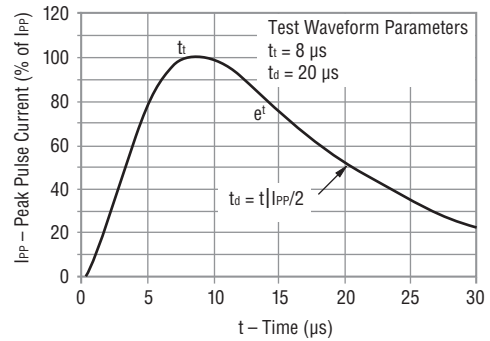
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Performance Graphs

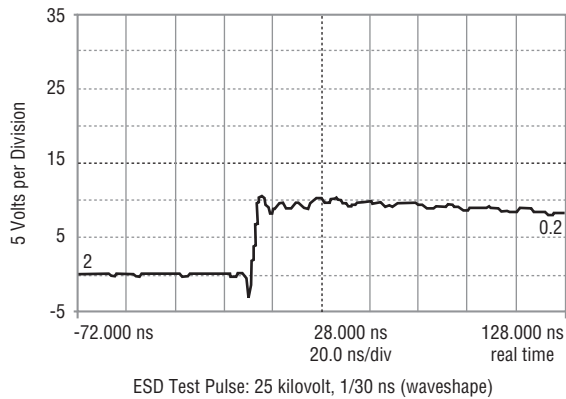
Peak Pulse Power vs. Pulse Time



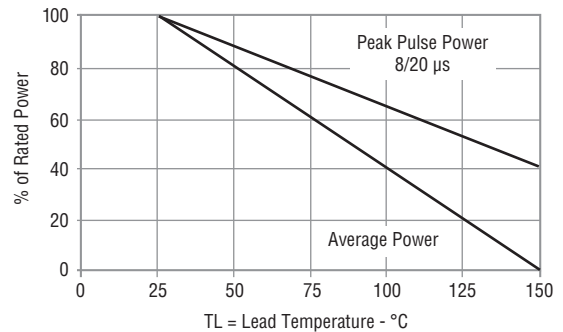
Pulse Waveform



Overshoot & Clamping Voltage



Power Derating Curve



How to Order

CD SOT23 - SLVU 2.8

Common Code _____
 Chip Diode _____
 Package _____
 • SOT23 = SOT23 Package
 Model _____
 SLVU = Special Model
 Working Peak Reverse Voltage _____
 2.8 = 2.8 V_{RWM} (Volts)

Environmental Specifications

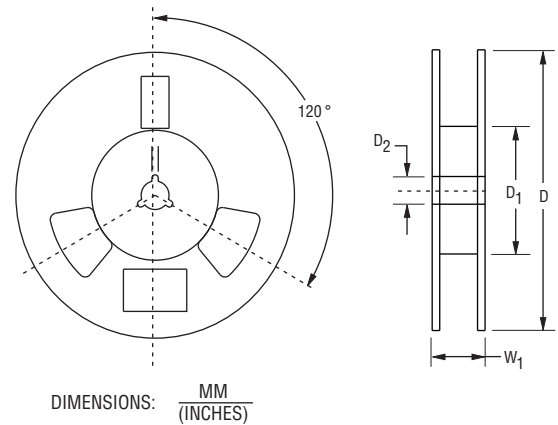
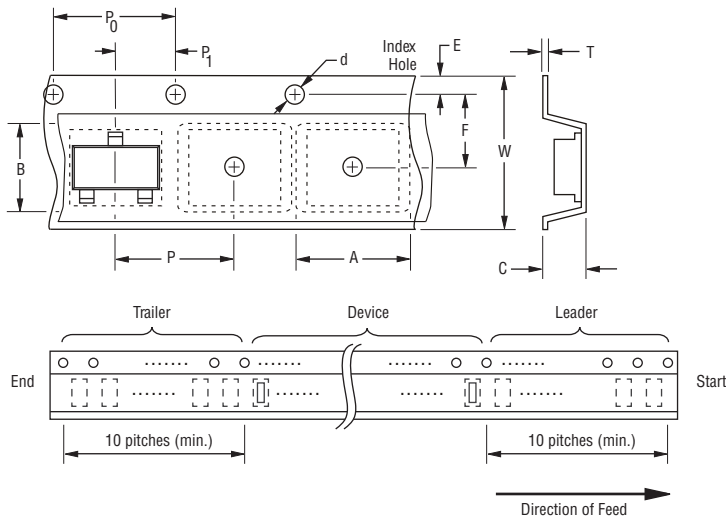
Moisture Sensitivity Level 1
 ESD Classification (HBM) 3B

CDSOT23-SLVU2.8 - Surface Mount TVS Diode

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Packaging Information

The surface mount product is packaged in an 8 mm x 4 mm tape and reel format per EIA-481 standard.



Devices are packed in accordance with EIA standard RS-481-A.

| Item | Symbol | SOT23 |
|------------------------|----------------|---|
| Carrier Width | A | $\frac{2.25 \pm 0.10}{(0.088 \pm 0.004)}$ |
| Carrier Length | B | $\frac{2.34 \pm 0.10}{(0.092 \pm 0.004)}$ |
| Carrier Depth | C | $\frac{1.22 \pm 0.10}{(0.048 \pm 0.004)}$ |
| Sprocket Hole | d | $\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$ |
| Reel Outside Diameter | D | $\frac{178}{(7.008)}$ |
| Reel Inner Diameter | D ₁ | $\frac{50.0}{(1.969)}$ MIN. |
| Feed Hole Diameter | D ₂ | $\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$ |
| Sprocket Hole Position | E | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$ |
| Punch Hole Position | F | $\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$ |
| Punch Hole Pitch | P | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| Sprocket Hole Pitch | P ₀ | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| Embossment Center | P ₁ | $\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$ |
| Overall Tape Thickness | T | $\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$ |
| Tape Width | W | $\frac{8.00 \pm 0.20}{(0.315 \pm 0.008)}$ |
| Reel Width | W ₁ | $\frac{14.4}{(0.567)}$ MAX. |
| Quantity per Reel | -- | 3,000 |

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REV. 08/19

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