

Features

- Lead free device
- RoHS compliant*
- Unidirectional and bidirectional configurations
- Protects 4 or 5 lines
- ESD, EFT and surge protection

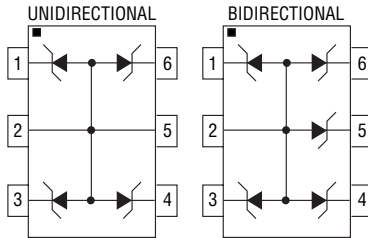
CDSOT236-T05~T12C Series - TVS Diode Arrays

General Information

Portable communications, computing and video equipment manufacturers are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Transient Voltage Suppressor Array diodes for ESD, EFT and surge protection applications, in SOT23-6 package size format. The Transient Voltage Suppressor Array series offers a choice of voltage types ranging from 5 V to 12 V in a bidirectional configuration. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

The Bourns® device will meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.



Additional Information

Click these links for more information:



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

| Parameter | Symbol | Value | Unit |
|--|------------------|-------------|------|
| Peak Pulse Power (t _p = 8/20 μs) ¹ | P _{PP} | 350 | W |
| Operating Temperature | T _J | -55 to +150 | °C |
| Storage Temperature | T _{STG} | -55 to +150 | °C |

| Parameter | Symbol | CDSOT236- | | | | Unit |
|---|-----------------|---------------|---------------|---------------|---------------|------|
| | | Uni-T05 | Bi-T05C | Uni-T12 | Bi-T12C | |
| Min. Breakdown Voltage @ 1 mA | V _{BR} | 6.0 | 6.0 | 13.3 | 13.3 | V |
| Working Peak Voltage | V _{WM} | 5.0 | 5.0 | 12.0 | 12.0 | V |
| Max. Clamping Voltage @ I _P = 1 A | V _C | 9.8 | 9.8 | 19.0 | 19.0 | V |
| Max. Clamping Voltage @ 8/20 μs @ I _{PP} | V _C | 21.0 V @ 17 A | 21.0 V @ 17 A | 29.2 V @ 12 A | 29.2 V @ 12 A | V |
| Max. Leakage Current @ V _{WM} | I _D | 20 | 20 | 1 | 1 | μA |
| Typ. Capacitance @ 0 V, 1 MHz | C _J | 150 | 150 | 80 | 80 | pF |

Notes:

1. See Peak Pulse Power vs. Pulse Time.



CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant. See 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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Applications

- Cell phones
- PDAs and notebooks
- Digital cameras
- GPS
- MP3 players

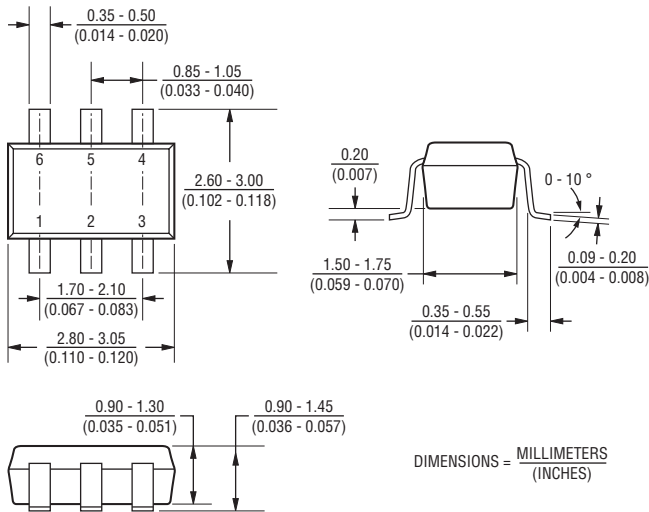
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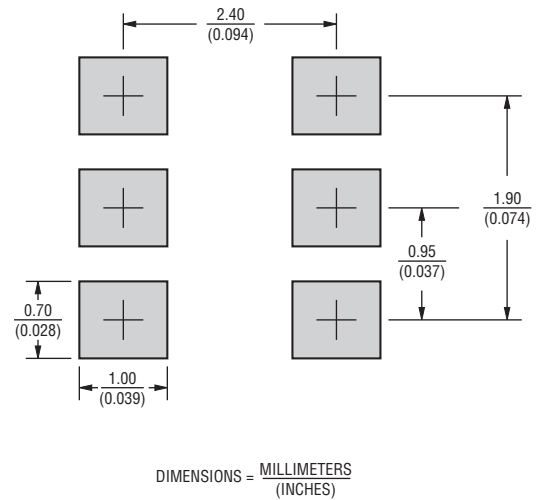
Mechanical Characteristics

This is a molded JEDEC SOT23-6 package with lead free 100 % Tin (Sn) on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.

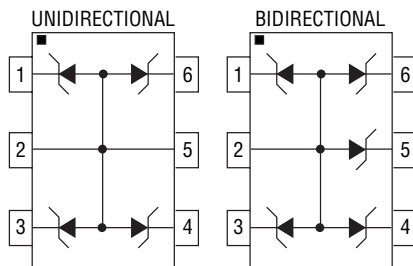
Product Dimensions



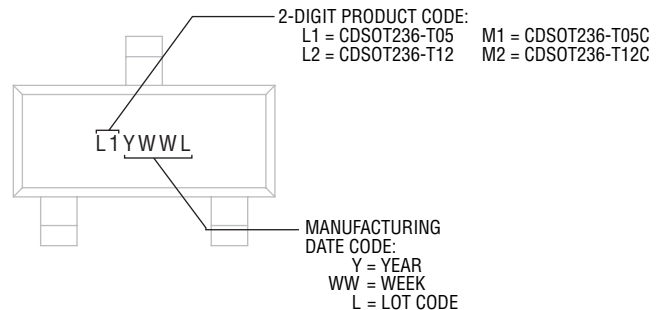
Recommended Footprint



Block Diagram



Typical Part Marking



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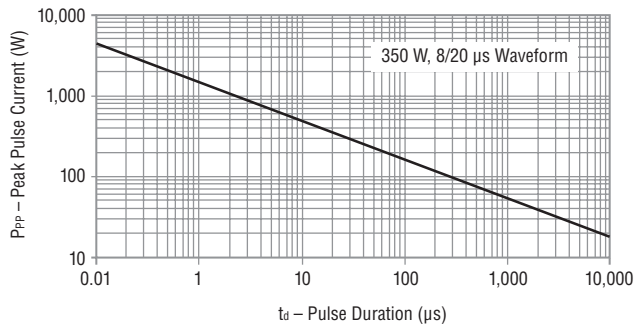
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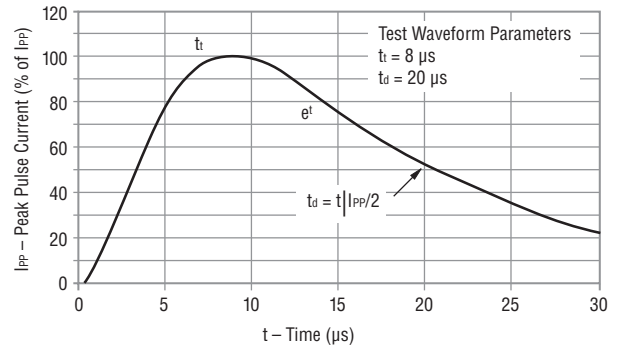


Performance Graphs

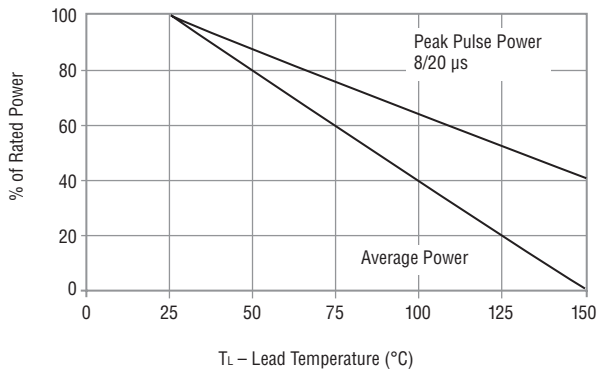
Peak Pulse Power vs. Pulse Time



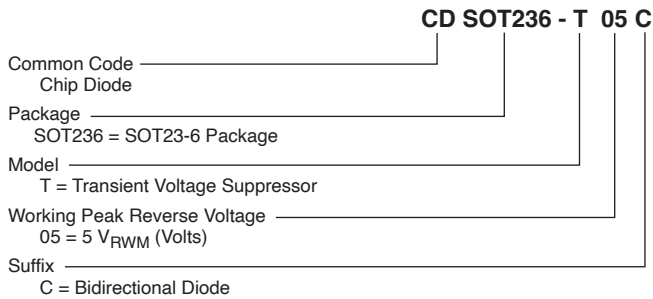
Pulse Waveform



Power Derating Curve



How to Order



Environmental Specifications

| | |
|---------------------------------|----|
| Moisture Sensitivity Level..... | 1 |
| ESD Classification (HBM)..... | 3B |

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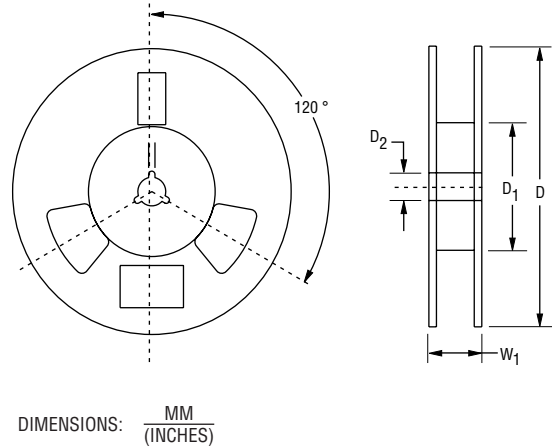
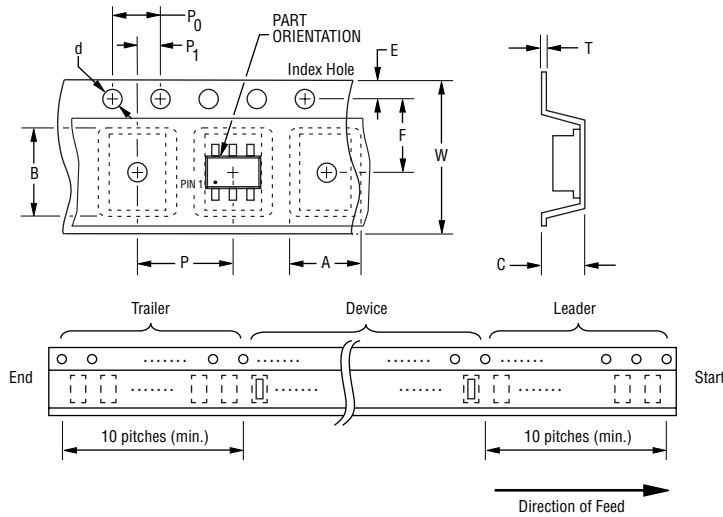
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Packaging Information

The product is packaged in tape and reel format per EIA-481 standard.



| Item | Symbol | SOT23-6 |
|------------------------|----------------|---|
| Carrier Width | A | $\frac{3.90 \pm 0.10}{(0.154 \pm 0.004)}$ |
| Carrier Length | B | $\frac{3.90 \pm 0.10}{(0.154 \pm 0.004)}$ |
| Carrier Depth | C | $\frac{0.90 \pm 0.10}{(0.035 \pm 0.004)}$ |
| 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 | -- | 3000 |

BOURNS®

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REV. 11/25

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