

## Features

- Lead free as standard
- RoHS compliant\*
- Low capacitance - 2 pF
- ESD protection >15 kV

## Applications

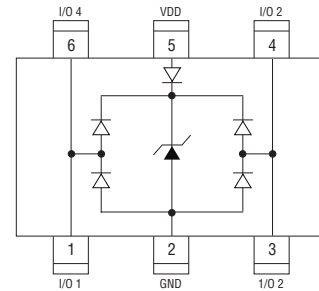
- Personal Digital Assistants (PDAs)
- Mobile phones and accessories
- Portable electronics
- ADSL / VDSL cards

# CDSOT236-0502 - Surface Mount TVS Diode Array

## General Information

The CDSOT236-0502 device provides ESD and EFT protection for high speed data ports meeting IEC 61000-4-2 (ESD) and IEC 61000-4-4 (EFT) requirements. The Transient Voltage Suppressor array offers a Working Peak Reverse Voltage of 5 V and Minimum Breakdown Voltage of 6 V.

The SOT23-6 packaged device will mount directly onto the industry standard SOT23-6 footprint. Bourns® Chip Diodes are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.



## Electrical & Thermal Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

| Parameter                                 | Symbol               | Test Condition  | Min. | Typ. | Max. | Unit |
|---|----------------------|---|------|------|------|------|
| Peak Pulse Current                        | I <sub>PPM</sub>     | (t <sub>p</sub> = 8/20 μs)  |      | 7    | A    |      |
| Storage Temperature                       | T <sub>STG</sub>     |   | -55  | +25  | +150 | °C   |
| Operating Temperature                     | T <sub>OPR</sub>     |   | -40  | +25  | +125 | °C   |
| Working Peak Voltage                      | V <sub>WM</sub>      |   |      |      | 5    | V    |
| Breakdown Voltage                         | V <sub>BR</sub>      | @ 1 mA, Pin 5 to Pin 2  | 6    |      | 9    | V    |
| Leakage Current @ V <sub>WM</sub>         | I <sub>L</sub>       | V <sub>pin5</sub> = 5 V, V <sub>pin2</sub> = 0 V,<br>Pin 5 to Pin 2                         |      |      | 5    | μA   |
| Channel Leakage Current @ V <sub>WM</sub> | I <sub>CH</sub>      | V <sub>pin5</sub> = 5V, V <sub>pin2</sub> = 0 V<br>Any I/O to Pin 2                         |      |      | 1    | μA   |
| Forward Voltage                           | V <sub>F</sub>       | @ I <sub>f</sub> = 15 mA  |      | 0.8  | 1    | V    |
| Clamping Voltage                          | V <sub>clamp</sub>   | I <sub>PP</sub> = 5 A, t <sub>p</sub> = 8/20 μs   |      | 7.5  |      | V    |
| Channel Input Capacitance                 | C <sub>IN-1</sub>    | V <sub>pin5</sub> = 5V, V <sub>pin2</sub> = 0 V,<br>V <sub>IN</sub> = 2.5 V, f = 1 MHz      |      | 2    | 2.5  | pF   |
| Channel Input Capacitance                 | C <sub>IN-2</sub>    | V <sub>pin5</sub> = floated, V <sub>pin2</sub> = 0 V,<br>V <sub>IN</sub> = 2.5 V, f = 1 MHz |      | 2.8  | 3.6  | pF   |
| Channel to Channel Input Capacitance      | C <sub>CROSS-1</sub> | V <sub>pin5</sub> = 5V, V <sub>pin2</sub> = 0 V,<br>V <sub>IN</sub> = 2.5 V, f = 1 MHz      |      | 0.5  | 0.60 | pF   |
| Channel to Channel Input Capacitance      | C <sub>CROSS-2</sub> | V <sub>pin5</sub> = floated, V <sub>pin2</sub> = 0 V,<br>V <sub>IN</sub> = 2.5 V, f = 1 MHz |      | 0.7  | 0.85 | pF   |



**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://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.

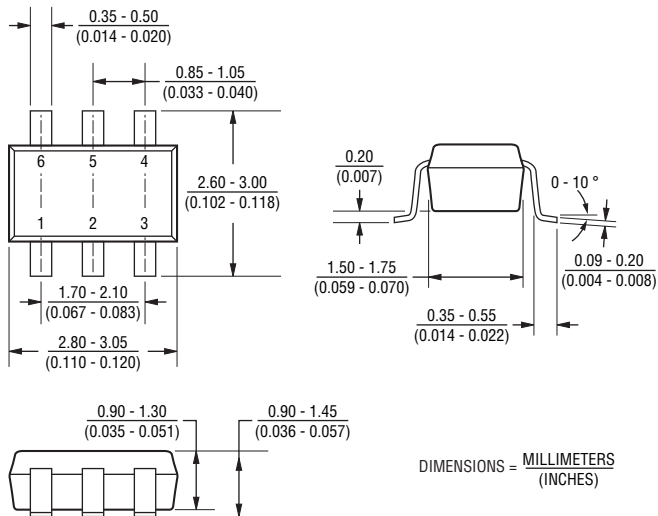
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# CDSOT236-0502 - Surface Mount TVS Diode Array

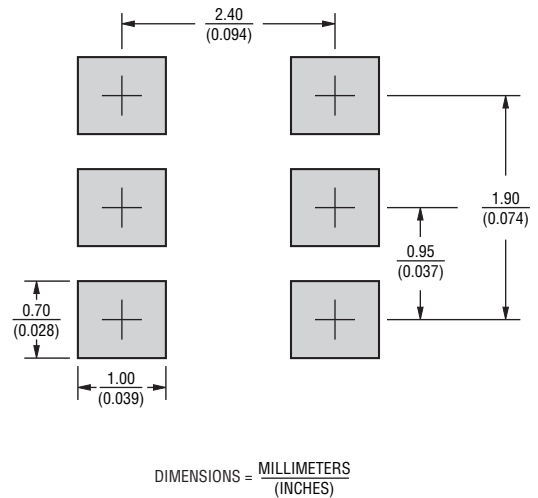
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## Product Dimensions

This is a molded SOT236 package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.



## Recommended Footprint



## Typical Part Marking

CDSOT236-0502.....502

## How to Order

**CD SOT236 - 05 02**

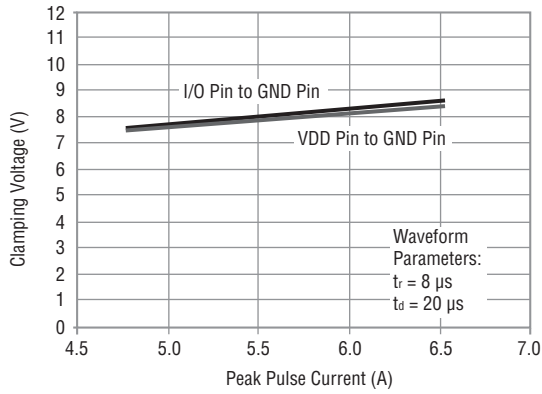
Common Diode \_\_\_\_\_  
 Chip Diode \_\_\_\_\_  
 Package \_\_\_\_\_  
 SOT236 = SOT23-6 Package  
 Working Peak Reverse Voltage \_\_\_\_\_  
 05 = 5 V<sub>RWM</sub> (Volts)  
 Number of Lines \_\_\_\_\_  
 02 = 2 Data Lines

# CDSOT236-0502 - Surface Mount TVS Diode Array

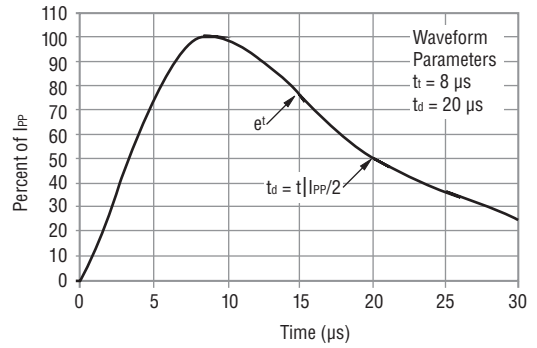
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## Rating & Characteristic Curves

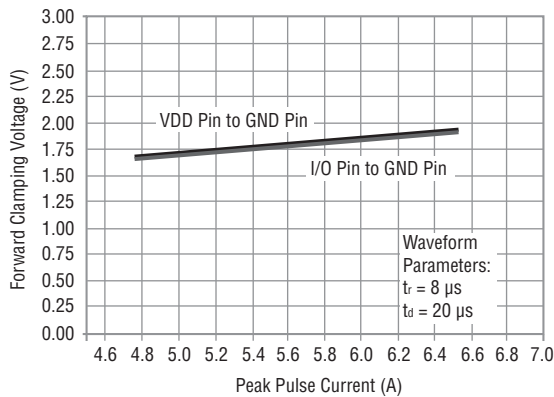
### Clamping Voltage vs. Peak Pulse Current



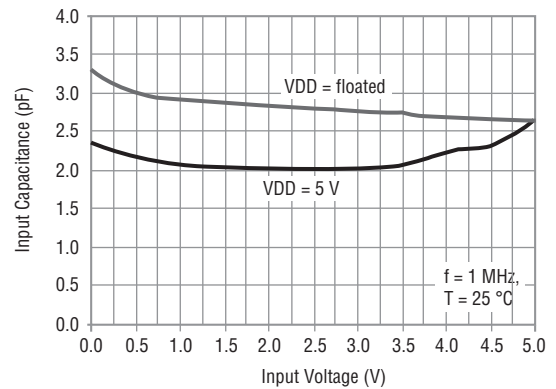
### Pulse Waveform



### Forward Clamping Voltage vs. Peak Pulse Current



### Typical Variation of $C_{IN}$ vs. $V_{IN}$



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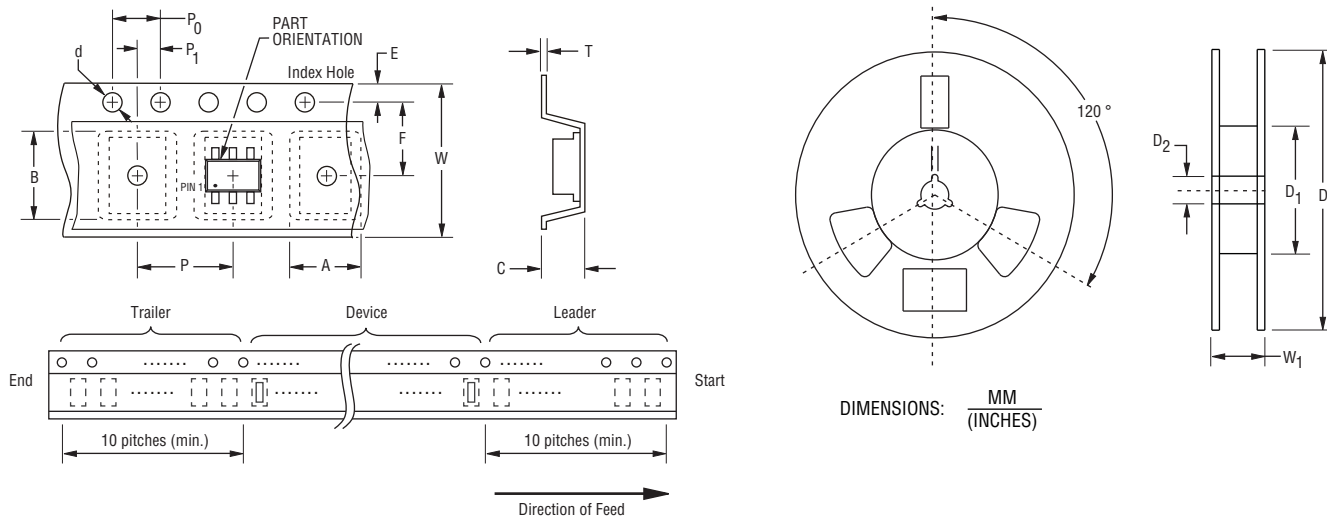
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# CDSOT236-0502 - Surface Mount TVS Diode Array

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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 <sub>1</sub> | $\frac{50.0}{(1.969)}$ MIN.               |
| Feed Hole Diameter     | D <sub>2</sub> | $\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$ |
| 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 <sub>0</sub> | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| Embossment Center      | P <sub>1</sub> | $\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$ |
| 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 <sub>1</sub> | $\frac{14.4}{(0.567)}$ MAX.               |
| Quantity per Reel      | --             | 3000                                      |

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REV. 08/19

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