

## Features

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

## Applications

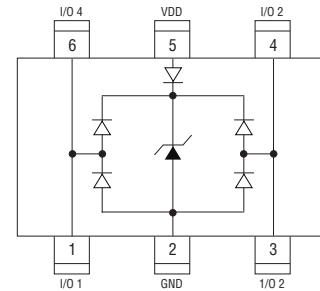
- Personal Digital Assistants (PDAs)
- Mobile phones and accessories
- Portable electronics
- ADSL / VDSL cards

# 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, 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 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, 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, 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, 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, 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.

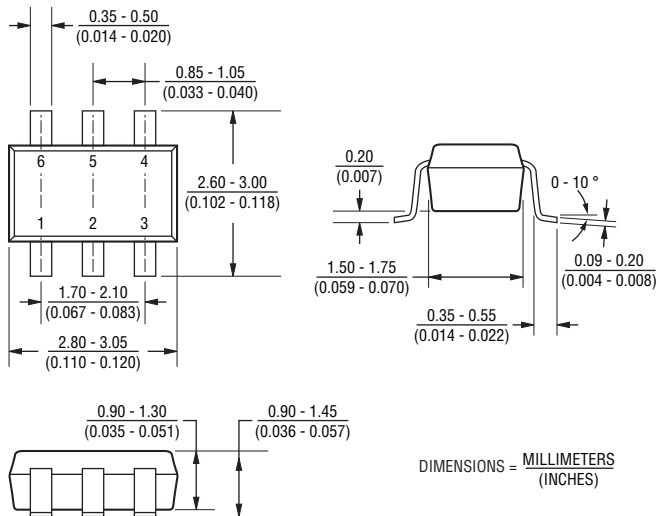
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# CDSOT236-0502 - Surface Mount TVS Diode Array

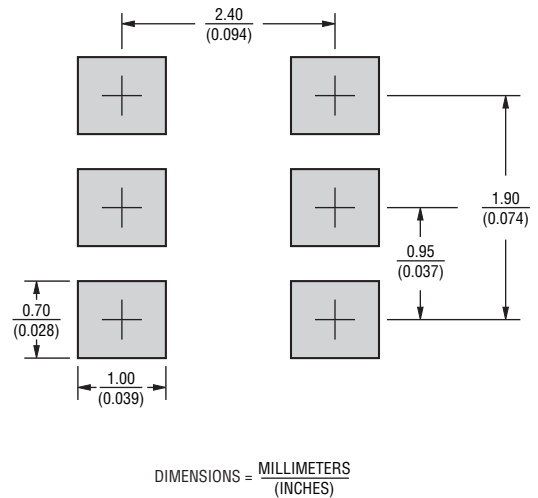
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## Product Dimensions

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

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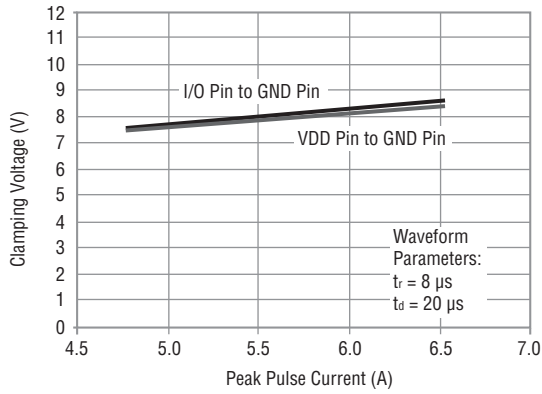
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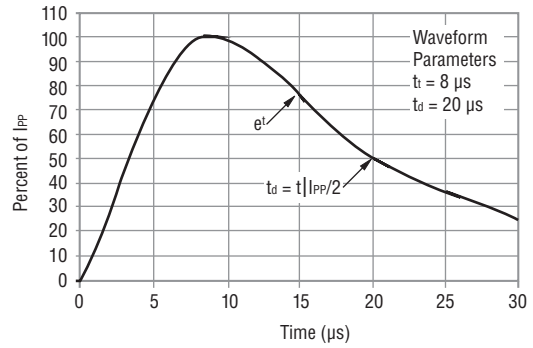
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## Rating & Characteristic Curves

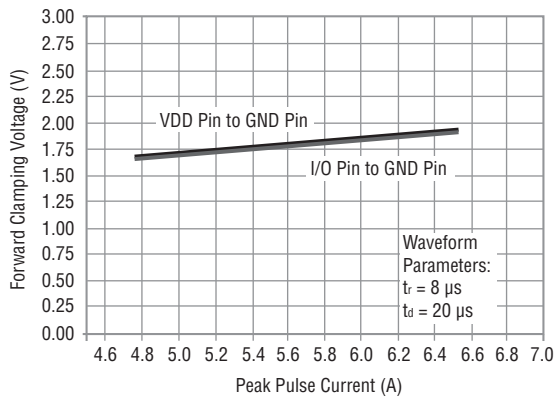
### Clamping Voltage vs. Peak Pulse Current



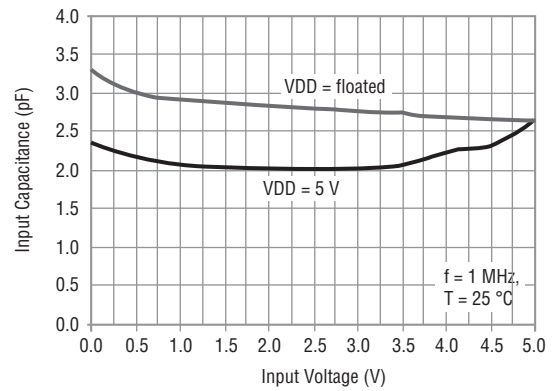
### Pulse Waveform



### Forward Clamping Voltage vs. Peak Pulse Current



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



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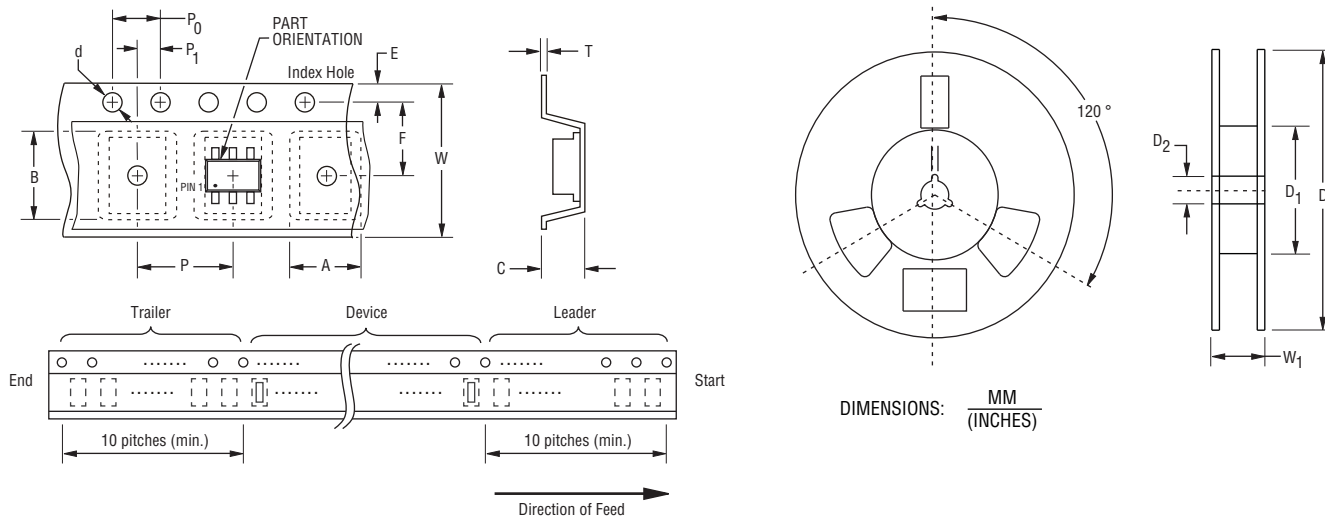
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## Packaging Information

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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