

Features

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

Applications

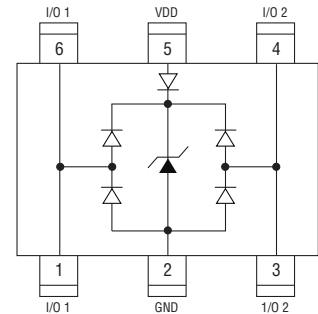
- Personal Digital Assistant (PDAs)
- Mobile phones and accessories
- Portable electronics
- ADSL / VDSL cards

CDSOT563-0502 - Surface Mount TVS Diode Array

General Information

The CDSOT563-0502 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 SOT563 packaged device will mount directly onto the industry standard SOT563 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_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Peak Pulse Current	I _{PPM}	(t _p = 8/20 μs)			6	A
Storage Temperature	T _{STG}		-55	+25	+150	°C
Operating Temperature	T _{OPR}		-40	+25	+125	°C
Working Peak Voltage	V _{WM}				5	V
Breakdown Voltage	V _{BR}	@ 1 mA, Pin 5 to Pin 2	6		9	V
Leakage Current @ V _{WM}	I _L	V _{pin5} = 5 V, V _{pin2} = 0 V, Pin 5 to Pin 2			5	μA
Channel Leakage Current @ V _{WM}	I _{CH}	V _{pin5} = 5 V, V _{pin2} = 0 V, Any I/O to Pin 2			1	μA
Forward Voltage	V _F	@ I _f = 15 mA		0.8	1	V
Clamping Voltage	V _{clamp_VDD}	I _{PP} = 5 A, t _p = 8/20 μs		9		V
Channel Input Capacitance	C _{IN-1}	V _{pin5} = 5 V, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz		2	2.5	pF
Channel Input Capacitance	C _{IN-2}	V _{pin5} = floated, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz		2.8	3.6	pF
Channel to Channel Input Capacitance	C _{CROSS-1}	V _{pin5} = 5 V, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz		0.4	0.5	pF
Channel to Channel Input Capacitance	C _{CROSS-2}	V _{pin5} = floated, V _{pin2} = 0 V, V _{IN} = 2.5 V, f = 1 MHz		0.55	0.65	pF



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.

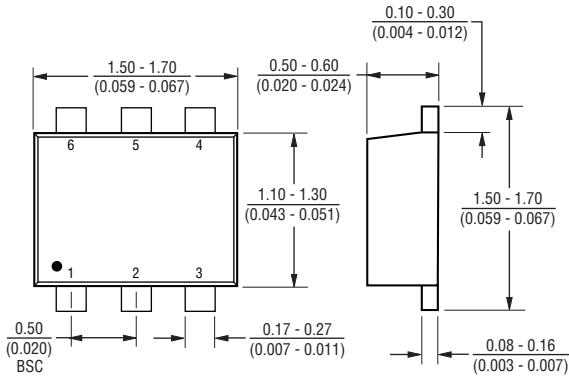
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CDSOT563-0502 - Surface Mount TVS Diode Array



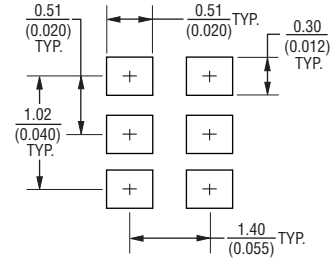
Product Dimensions

This is a molded SOT563 package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 3 mg and has a flammability rating of UL 94V-0.



DIMENSIONS = $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

Recommended Footprint



Typical Part Marking

CDSOT563-0502.....52XY
 ("X" = Date Code; "Y" = Package House)

How to Order

CD SOT563 - 05 02

Common Diode _____
 Chip Diode _____
 Package _____
 SOT563 = SOT-563 Package
 Working Peak Reverse Voltage _____
 05 = 5 V (Volts)
 Data Lines _____
 02 = 2 Data Lines

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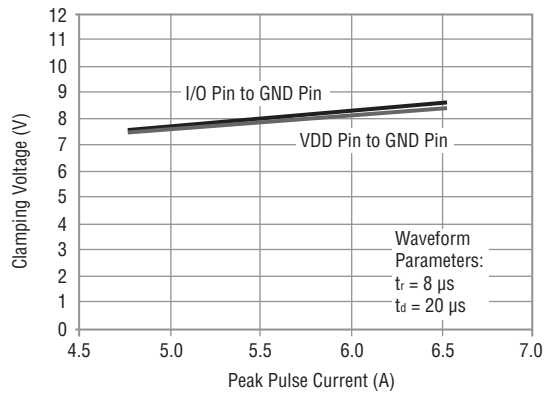
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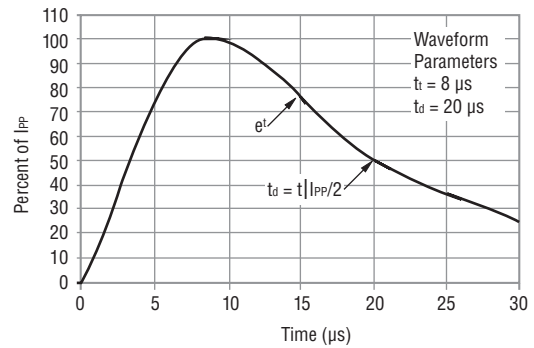
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Rating & Characteristic Curves

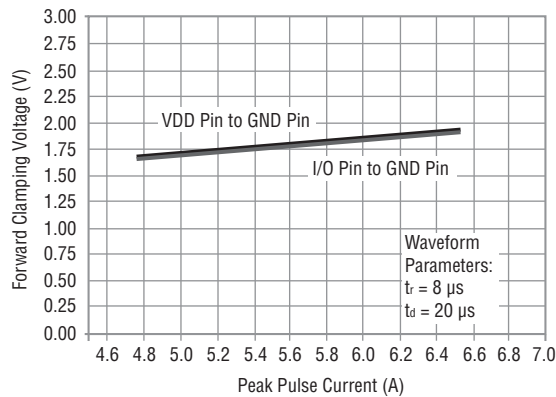
Clamping Voltage vs. Peak Pulse Current



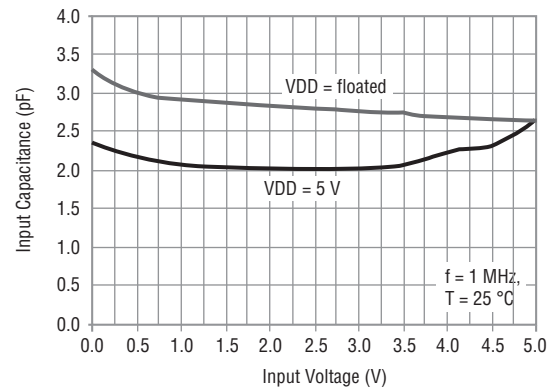
Pulse Waveform



Forward Clamping Voltage vs. Peak Pulse Current



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



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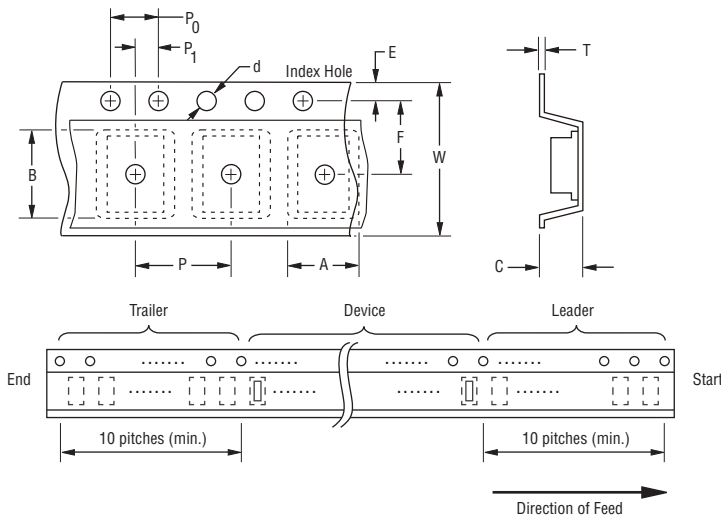
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CDSOT563-0502 - Surface Mount TVS Diode Array

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Packaging Information

The product will be dispensed in tape and reel format (see diagram below)



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

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

Item	Symbol	SOT563
Carrier Width	A	$\frac{1.78 \pm 0.05}{(0.069 \pm 0.002)}$
Carrier Length	B	$\frac{1.78 \pm 0.05}{(0.069 \pm 0.002)}$
Carrier Depth	C	$\frac{0.69 \pm 0.05}{(0.027 \pm 0.002)}$
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

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