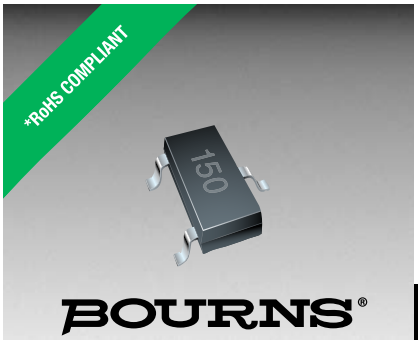


Features

- Lead free as standard
- RoHS compliant*
- Low clamping voltage
- Bidirectional ESD protection
- Protects 2 lines

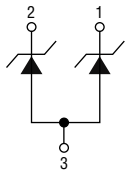
Applications

- Personal Digital Assistants (PDAs)
- Mobile phones & accessories
- Portable electronics
- Power lines and low speed data lines

CDSOT23-0502U - Surface Mount TVS Diode

General Information

The CDSOT23-0502U 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 5 V and Minimum Breakdown Voltage of 6 V.



The SOT23-3 packaged device will mount directly onto the industry standard SOT23-3 footprint. Bourns® Chip Diodes are easy to handle with standard pick and place equipment and their flat configuration minimizes roll away.

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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

Parameter	Symbol	Value	Unit
Peak Pulse Current (t_p = 8/20μs)	I_{PPM}	16	A
Storage Temperature	T_{STG}	-55 to 125	ºC
Operating Temperature	T_{OPR}	-55 to 150	ºC
Minimum Breakdown Voltage @ 1 mA	V_{BR}	6.0	V
Reverse Standoff Voltage	V_M	5	V
Maximum Leakage Current @ V_{WM}	I_L	2.5	μA
Maximum Forward Voltage	V_F	1	V
Maximum Surge Clamping Voltage1 @ I_{PP}=5 A (NOTE 1,2)	V_{CS1}	7	V
Maximum Surge Clamping Voltage2 @ I_{PP}=5 A (NOTE 3)	V_{CS2}	8	V
Typical ESD Clamping Voltage1 @ I_{PP}=17 A (NOTE 1,2)	V_{ESD1}	9	V
Typical ESD Clamping Voltage2 @ I_{PP}=17 A (NOTE 3)	V_{ESD2}	11	V
Max Channel Input Capacitance @ 0 V, 1 MHz (NOTE 1,2)	C_N	65	pF
Max Channel to Channel Capacitance @ 0 V, 1 MHz (NOTE 3)	C_{CROSS}	32.5	pF

Notes:
1. Test between Pins 1 to 3.
2. Test between Pins 2 to 3.
3. Test between Pins 1 to 2.

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

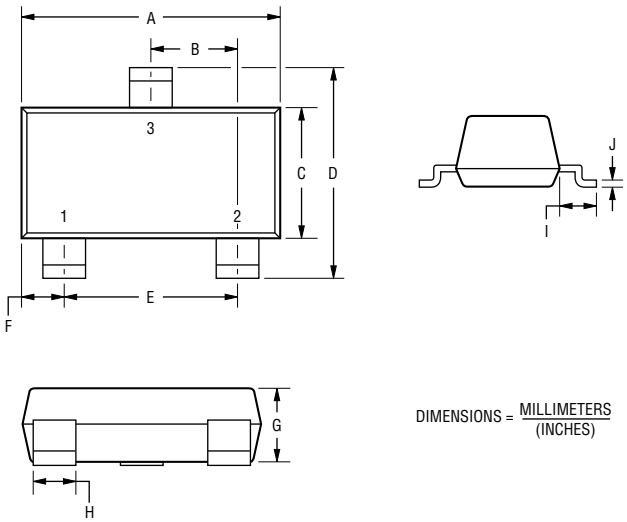
*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
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Users should verify actual device performance in their specific applications.
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CDSOT23-0502U - Surface Mount TVS Diode

BOURNS®

Product Dimensions

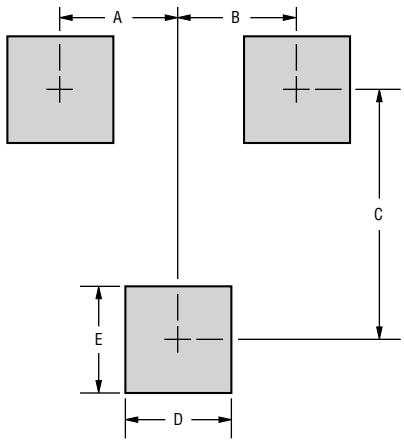
This is a molded SOT23-3L package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 8 mg and has a flammability rating of UL 94V-0.



DIMENSIONS = MILLIMETERS / (INCHES)

Dimensions	
A	2.82 - 3.02 / (0.111 – 0.119)
B	0.95 / (0.037) TYP.
C	1.20 – 1.40 / (0.047 – 0.055)
D	2.25 – 2.55 / (0.089 – 0.100)
E	1.80 – 2.00 / (0.071 – 0.079)
F	0.45 – 0.60 / (0.018 – 0.024)
G	0.90 – 1.05 / (0.035 – 0.041)
H	0.30 – 0.40 / (0.012 – 0.016)
I	0.55 / (0.022) REF.
J	0.08 – 0.15 / (0.003 – 0.006)

Recommended Footprint



DIMENSIONS = MILLIMETERS / (INCHES)

Dimensions	
A	0.95 / (0.037)
B	0.95 / (0.037)
C	2.00 / (0.079)
D	0.85 / (0.033)
E	0.85 / (0.033)

How to Order

CD SOT23 - 05 02 U

Common Code
Chip Diode

Package
• SOT23 = SOT-23-3L Package

Working Peak Voltage
05 = 5 V

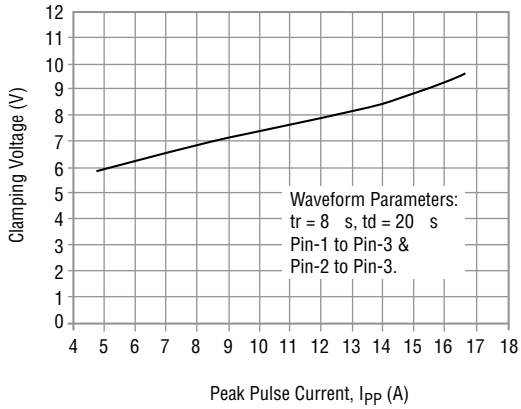
Lines
02 = 2 Lines

Suffix
U = Unidirectional Diode

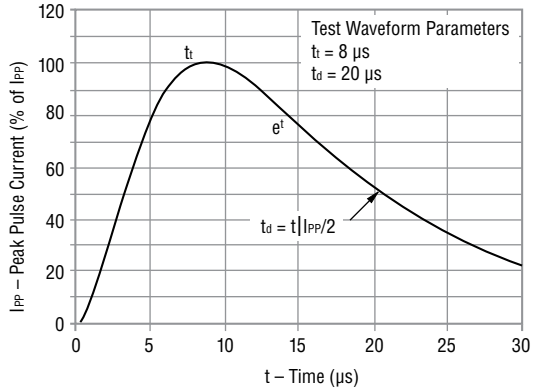
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Rating & Characteristic Curves

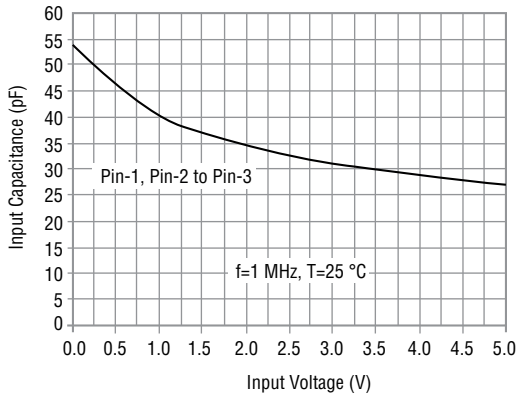
Reverse Clamping Voltage vs Peak Pulse Current



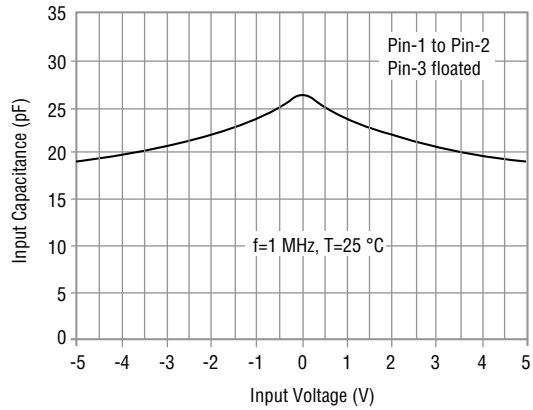
Pulse Waveform



Typical variation of C_{IN} vs. V_{IN} (1)



Typical variation of C_{IN} vs. V_{IN} (1)



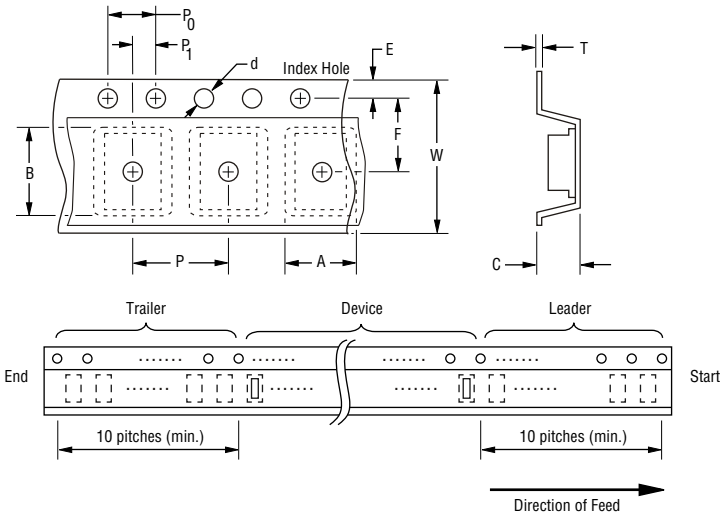
Typical Part Marking

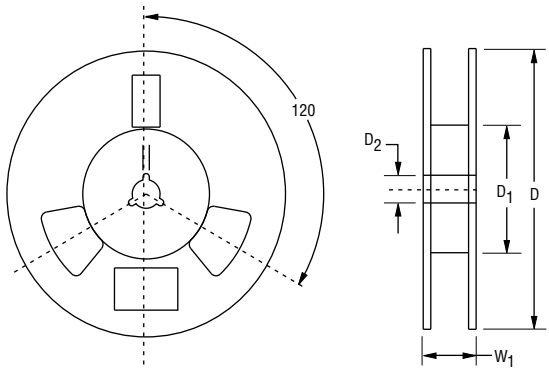
CDSOT23-0502U 52U

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Packaging Information

The product is dispensed in tape and reel format (see diagram below).





DIMENSIONS: MM / (INCHES)

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

Item	Symbol	SOT-23
Carrier Width	A	2.25 ±0.10 (0.088 - 0.004)
Carrier Length	B	2.34 ±0.10 (0.092 - 0.004)
Carrier Depth	C	1.22 ±0.10 (0.048 - 0.004)
Sprocket Hole	d	1.55 ±0.05 (0.061 - 0.002)
Reel Outside Diameter	D	178 (7.008)
Reel Inner Diameter	D_1	50.0 (1.969) Min.
Feed Hole Diameter	D_2	13.0 ± 0.20 (0.512 ± 0.008)
Sprocket Hole Position	E	1.75 ± 0.10 (0.069 ± 0.004)
Punch Hole Position	F	3.50 ± 0.05 (0.138 ± 0.002)
Punch Hole Pitch	P	4.00 ±0.10 (0.157 - 0.004)
Sprocket Hole Pitch	P_0	4.00 ± 0.10 (0.157 ± 0.004)
Embossment Center	P_1	2.00 ± 0.05 (0.079 ± 0.002)
Overall Tape Thickness	T	0.20 ± 0.10 (0.008 ± 0.004)
Tape Width	W	8.00 ±0.20 (0.315 - 0.008)
Reel Width	W_1	14.4 (0.567) Max.
Quantity per Reel	--	3,000

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