CDSOT23-0502B - Surface Mount TVS Diode

Features

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

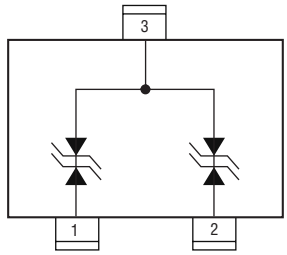
Applications

- Computer interface protection
- Microprocessor protection
- Power lines on PCB protection
- Control signal lines protection
- Latchup protection

General Information

The CDSOT23-0502B bidirectional 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.



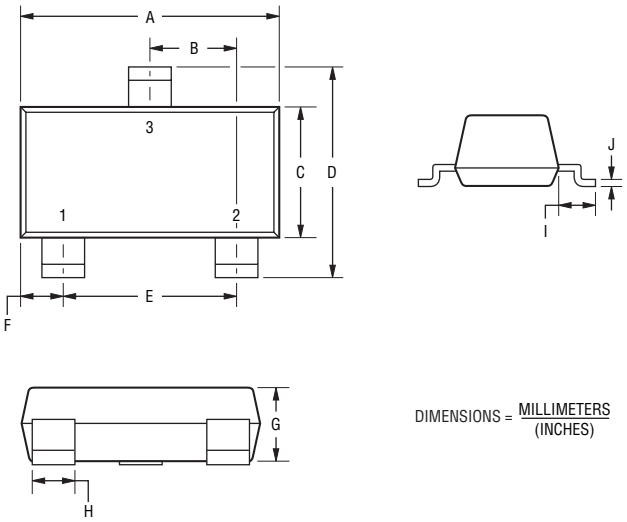
Electrical & Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Peak Pulse Current (t_p = 8/20µs)	I_{PPM}	8.5	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD\ IO}$	22 15	kV
Operating Temperature	T_{OPR}	-55 to +125	ºC
Storage Temperature	T_{STG}	-55 to +150	ºC
Minimum Reverse Breakdown Voltage @ 1mA	V_{BR}	6.0	V
Reverse Standoff Voltage	V_M	5	V
Maximum Leakage Current @ V_{WM}	I_L	2.5	µA
Maximum Clamping Voltage [1] @ I_{PP}=5 A contact	V_{CL1}	8	V
Maximum Clamping Voltage [2] @ I_{PP}=7 A contact	V_{CL2}	9	V
Max Channel Input Capacitance @ 0 V, 1 MHz	C_N	15	pF

Note: Test between Pins 1 to 3, and Pins 2 to 3.

Product Dimensions

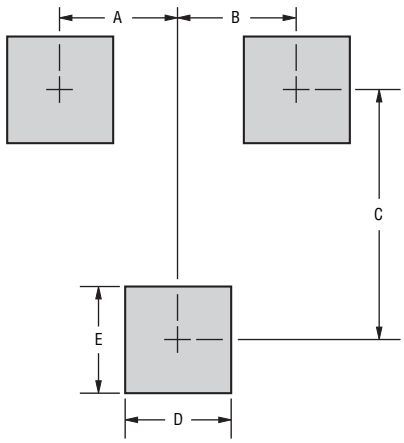
This is a molded SOT23-3L package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 8 mg and has a flammability rating of UL 94V-0.



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 B

Common Code
Chip Diode

Package
• SOT23 = SOT-23-3L Package

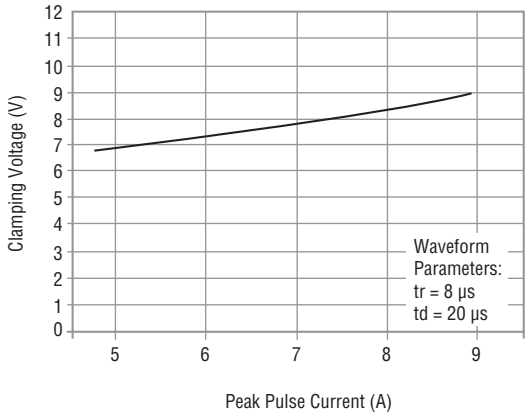
Working Peak Voltage
05 = 5 V

Lines
02 = 2 Lines

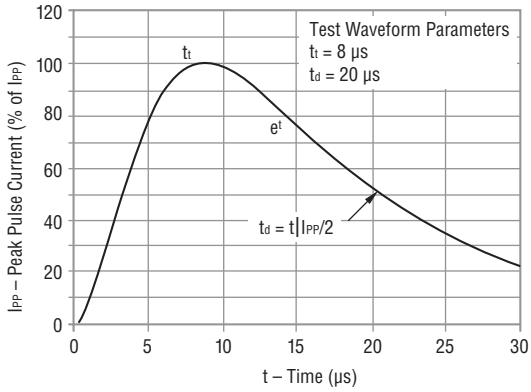
Suffix
B = Bidirectional Diode

Rating & Characteristic Curves

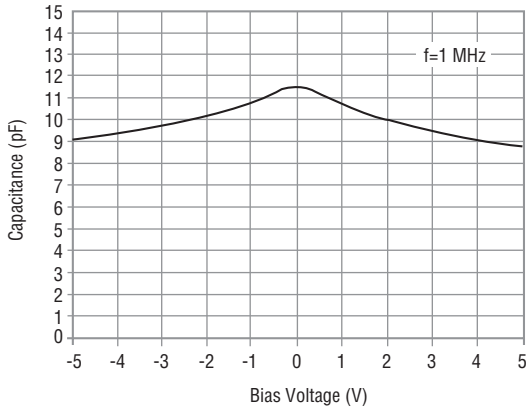
Clamping Voltage vs Peak Pulse Current



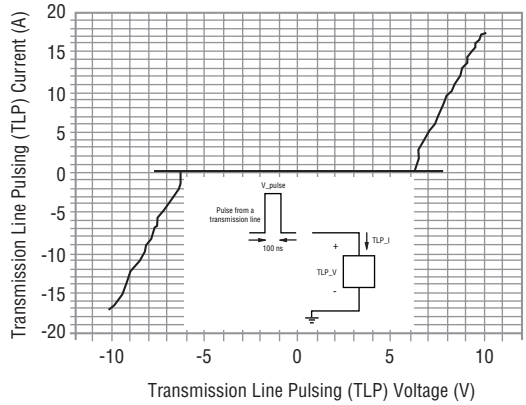
Pulse Waveform



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



Transmission Line Pulse Measurement



Typical Part Marking

CDSOT23-0502B 52B