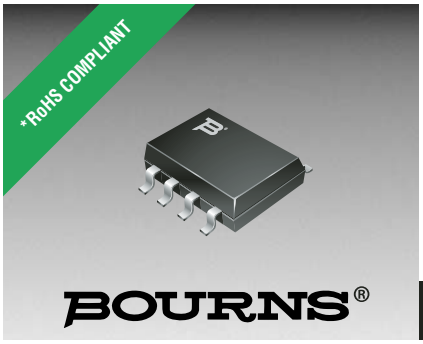


Features

- Lead free as standard
- RoHS compliant*
- Protects 2 I/O ports
- ESD protection > 40 KV
- Low capacitance: 15 pF

Applications

- Ethernet – 10/100 Base T
- Computer I/O ports – SCSI, FireWire & USB
- Set-top box protection
- Video cards

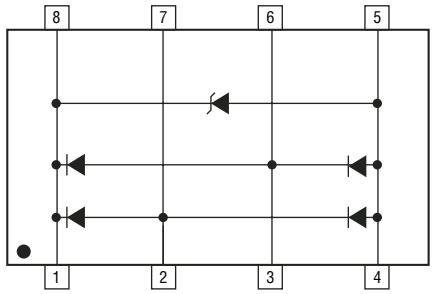
CDNBS08-USBxB Series - Steering Diode/TVS Array Combo

General Information

The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Steering Diode/Transient Voltage Suppressor Array combination diodes for surge and ESD protection applications in an 8 lead narrow body SOIC package size format. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

The Bourns® device will meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.



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

Parameter	Symbol	CDNBS08-		Unit
		USB3B	USB6B	
Breakdown Voltage @ 1 mA	V_{BR}	4.0	6.0	V
Working Peak Voltage	V_{WM}	3.3	5.25	V
Maximum Clamping Voltage V_C @ I_P[1]	V_F	6.0	7.0	V
Maximum Clamping Voltage @ 8/20 µs V_C @ I_{PP}[1]	V_F	12.9 V @ 37 A	13.2 V @ 35 A	V
Maximum Leakage Current @ V_{WM}	I_D	125	10	µA
Maximum Cap Bidirectional @ 0 V, 1 MHz	$C_{j(SD)}$	15		pF
Peak Pulse Power (tp = 8/20 µs) [2]	P_{PP}	500		W

Notes:
1. See Pulse Wave Form.
2. See Peak Pulse Power vs. Pulse Time.
3. Electrical specifications refer to Pins 1 to 4 or Pin 5 to Pin 8.

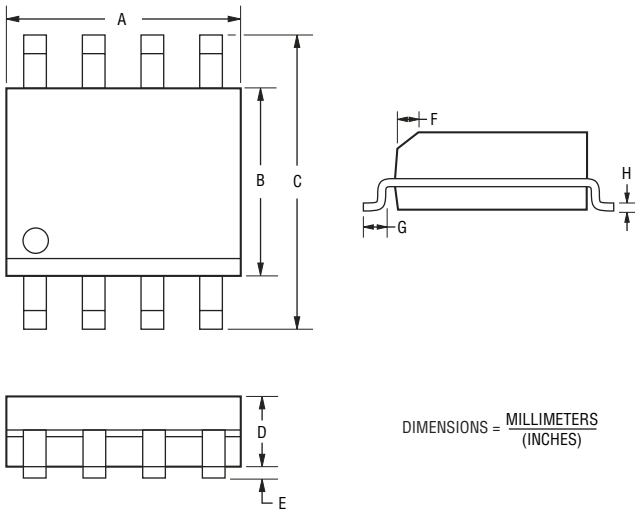
Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Max.	Unit
Operating Temperature	T_J	-55 to +150	°C
Storage Temperature	T_{STG}	-55 to +150	°C

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Product Dimensions

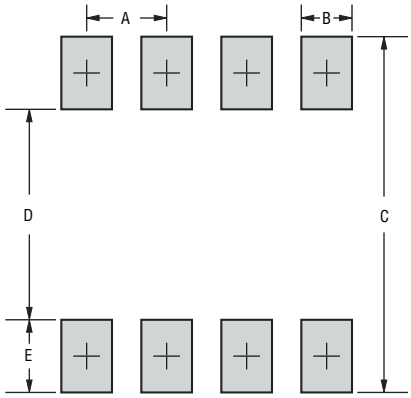
This is a molded JEDEC narrow body SO-8 package with lead free 100 % Sn plating on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.



DIMENSIONS = MILLIMETERS / (INCHES)

Dimensions	
A	4.80 - 5.00 (0.189 - 0.196)
B	3.80 - 4.00 (0.150 - 0.157)
C	5.80 - 6.20 (0.229 - 0.244)
D	1.35 - 1.75 (0.054 - 0.068)
E	0.10 - 0.25 (0.004 - 0.008)
F	0.25 - 0.50 (0.010 - 0.019)
G	0.40 - 1.250 (0.016 - 0.049)
H	0.18 - 0.25 (0.007 - 0.009)

Recommended Footprint



Dimensions	
A	1.143 - 1.397 (0.045 - 0.055)
B	0.635 - 0.889 (0.025 - 0.035)
C	6.223 (0.245) Min.
D	3.937 - 4.191 (0.155 - 0.165)
E	1.016 - 1.27 (0.040 - 0.050)

How To Order

CD NBS08 - USB 3 B

Common Code
Chip Diode

Package
• NBS08 = Narrow Body SOIC8 Package

Model
USB = Specific USB Port Device

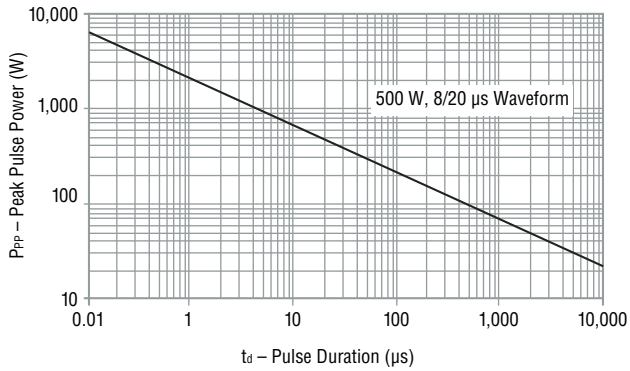
Minimum Breakdown Voltage
3 = 3.0 V_{BR} (Volts)

Configuration
B = 2 Steering Diodes + 1 TVS Diode

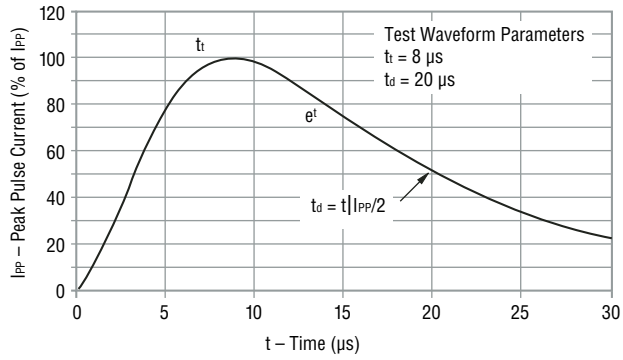
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Performance Graphs

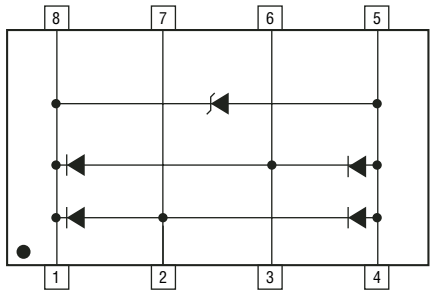
Peak Pulse Power vs Pulse Time



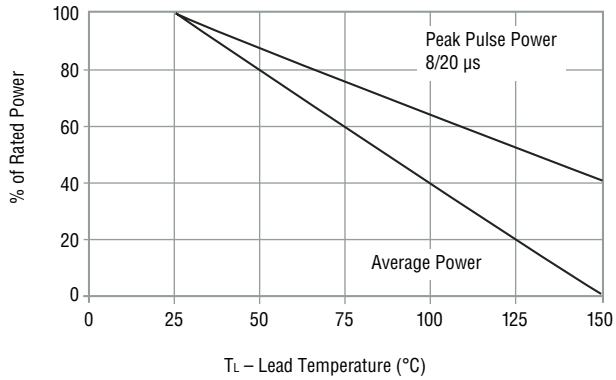
Pulse Wave Form



Block Diagram



Power Derating Curve



Device Pinout

Pin	Function
1	V_{CC}
2	I/O 1
3	I/O 2
4	GND
5	V_{CC}
6	I/O 1
7	I/O 2
8	GND

Typical Part Marking

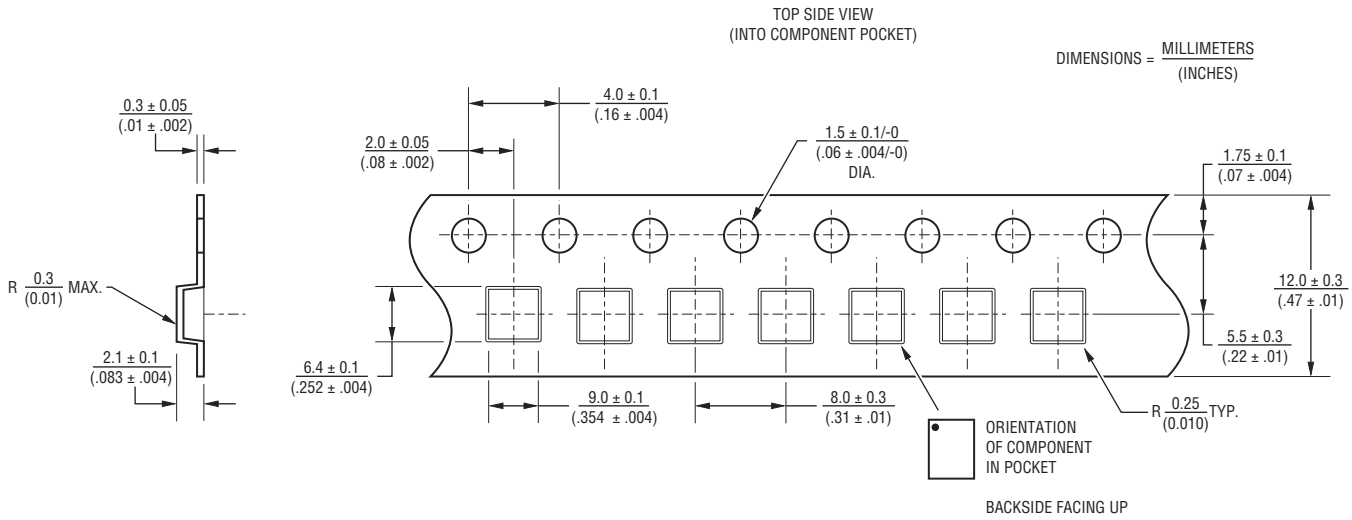
CDNBS08-USB3B .....PRQ

CDNBS08-USB6B .....PRR

Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Packaging

The surface mount product is packaged in a 12 mm x 8 mm Tape and Reel format per EIA-481 standard.



BOURNS®

Reliable Electronic Solutions

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Customers should verify actual device performance in their specific applications.

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