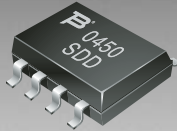


\*RoHS COMPLIANT



**BOURNS®**

## Features

- Lead free device (RoHS compliant\*)
- Telcordia GR1089 (Intra-Building)
- Protects 2 lines
- ESD protection >40 kV
- Low capacitance 8 pF

## Applications

- T1/E1 line cards
- ISDN U-Interface and S/T Interface
- xDSL
- Ethernet – 10/100 Base T

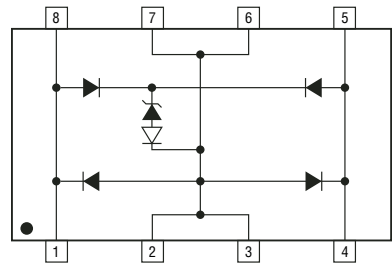
# CDNBS08-PLC03-3.3 Steering Diode/TVS Array Combo

## 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.

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<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Min.	Nom.	Max.	Unit
Capacitance @ 0 V 1 MHz <sup>1</sup>	C <sub>J(SD)</sub>		20	25	pF
Capacitance @ 0 V 1 MHz <sup>2</sup>	C <sub>J(SD)</sub>		8	12	pF
Working Peak Voltage	V <sub>WM</sub>			3.0	V
Min. Breakdown Voltage @ 1 mA	V <sub>BR</sub>	3.3			V
Clamping Voltage @ 8/20 μs @ IPP = 100 A <sup>3,4</sup>	V <sub>F</sub>			18	V
Clamping Voltage @ 8/20 μs @ IP = 50 A, Line - Ground	V <sub>F</sub>			11	V
Max. Leakage Current @ V <sub>WM</sub>	I <sub>D</sub>			2	μA
ESD Protection: IEC 61000-4-2 Contact Discharge		±8			kV
Air Discharge		±15			kV
Peak Pulse Power (tp = 8/20 μs) <sup>5</sup>	P <sub>PP</sub>			1800	W
EFT Protection: IEC61000-4-4 @ 5/50 ns		40			A
Surge Protection: IEC61000-4-5 @ 8/20 μs L4 (Line-Gnd)		94			A
L4 (Line-Line) , L1 (Power)		48			A
Surge Protection: Telcordia GR1089 (Intra-Building) @ 2/10 μs		100			A

Notes:

1. Measured between I/O pins and ground (pin 1 or 2).
2. Measured between I/O pins (pins 1 to 4).
3. See Pulse Wave Form. For an 8/20 μs waveform, apply positive pulse to pin 1 to 8 to pin 2 or 3 (ground).
4. Measured between pin 1 or 8 to pin 2 or 3; pin 1 or 8 to pin 4 or 5.
5. See Peak Pulse Power vs. Pulse Time.

## Thermal Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Min.	Nom.	Max.	Unit
Junction Temperature Range	T <sub>J</sub>	-55	+25	+150	°C
Storage Temperature Range	T <sub>STG</sub>	-55	+25	+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.

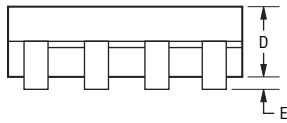
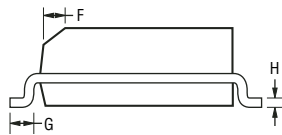
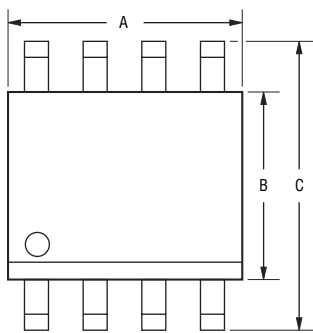
# CDNBS08-PLC03-3.3 Steering Diode/TVS Array Combo



## Mechanical Characteristics

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.

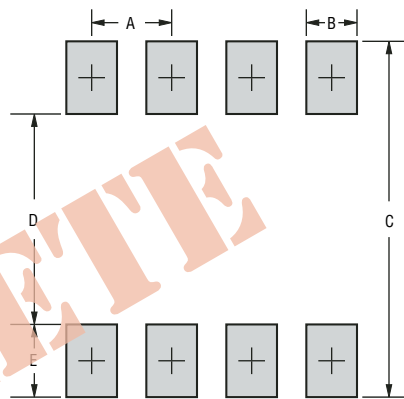
## Product Dimensions



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

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

## Recommended Footprint



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

## How To Order

Common Code \_\_\_\_\_ **CD NBS08 - PLC03 - 3.3**

CD = Chip Diode

Package \_\_\_\_\_

NBS08 = Narrow Body SOIC8 Package

Model \_\_\_\_\_

PLC03 = Model Number

Minimum Breakdown Voltage \_\_\_\_\_

3.3 = 3.3 V<sub>BR</sub> (Volts)

## Typical Part Marking

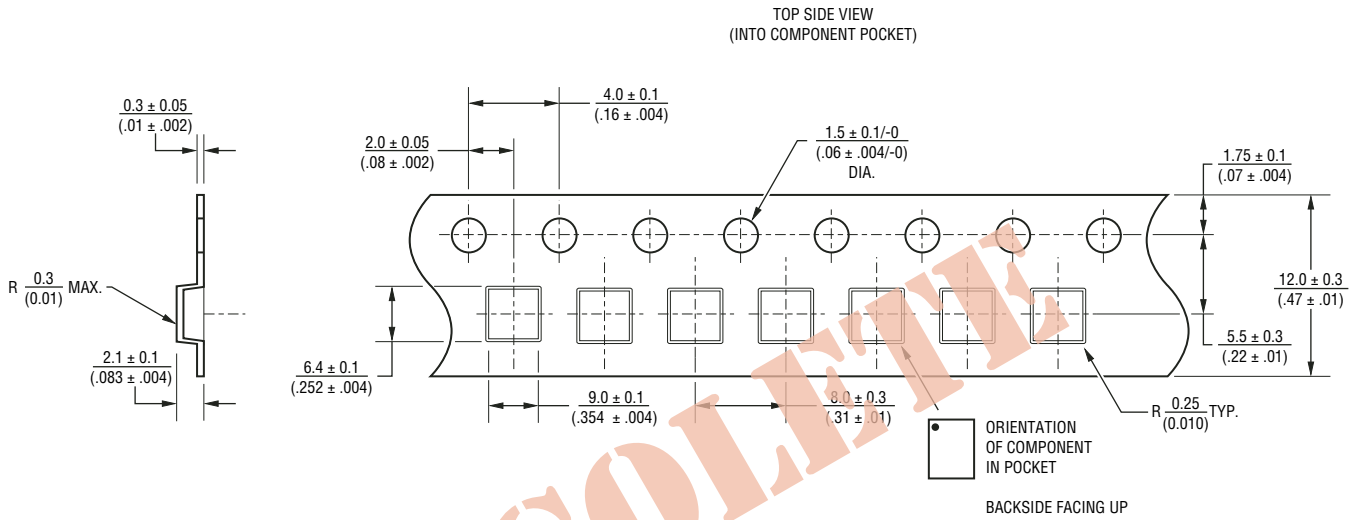
CDNBS08-PLC03-3.3 ..... PBC

# CDNBS08-PLC03-3.3 Steering Diode/TVS Array Combo

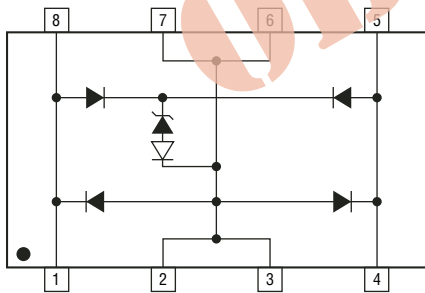


## Packaging

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



## Block Diagram

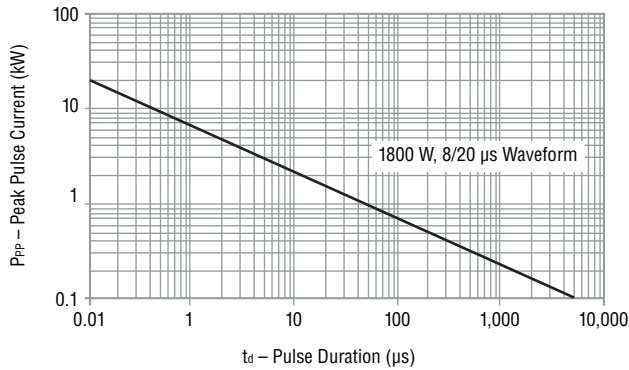


## Device Pinout

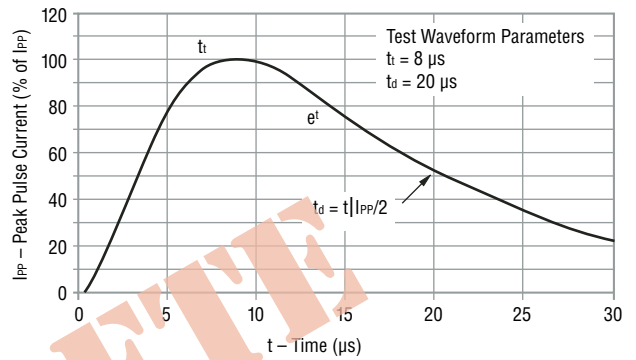
Pin	Function
1	I/O 1
2	GND
3	GND
4	I/O 2
5	I/O 2
6	GND
7	GND
8	I/O 1

Performance Graphs

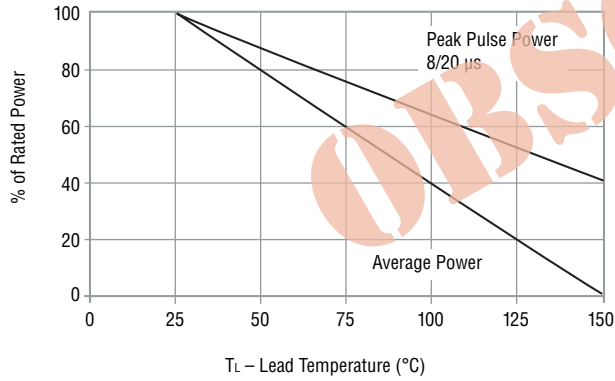
Peak Pulse Power vs Pulse Time



Pulse Wave Form



Power Derating Curve



Reliable Electronic Solutions

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