



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



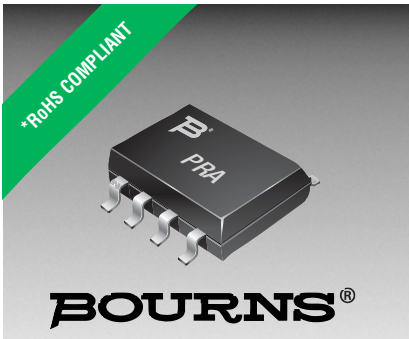
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### Features

- RoHS compliant\*
- Protects up to four I/O ports
- Unidirectional configuration
- ESD protection: 30 kV max.
- Low capacitance: 15 pF

### Applications

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

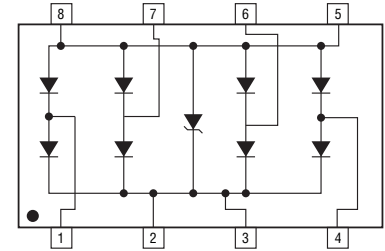
## CDNBS08-SRDaxx-4 Series - Steering Diode/TVS Array Combo

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

Parameter	Symbol	CDNBS08-				Unit
		SRDA3.3-4	SRDA05-4	SRDA12-4	SRDA15-4	
Minimum Breakdown Voltage @ 1 mA	V <sub>BR</sub>	4.0	6.0	13.3	16.7	V
Working Peak Voltage	V <sub>WM</sub>	3.3	5.0	12.0	15.0	V
Maximum Clamping Voltage V <sub>C</sub> @ I <sub>P</sub> <sup>1</sup>	V <sub>F</sub>	8.0	9.8	19.0	24.0	V
Maximum Clamping Voltage @ 8/20 μs V <sub>C</sub> @ I <sub>PP</sub> <sup>1</sup>	V <sub>F</sub>	10.9 V @ 43 A	13.5 V @ 42 A	25.9 V @ 27 A	30.0 V @ 17 A	V
Maximum Leakage Current @ V <sub>WM</sub>	I <sub>D</sub>	125	20	1	1	μA
Maximum Cap. Bidirectional @ 0 V, 1 MHz	C <sub>J(SD)</sub>	15				pF
ESD Protection per IEC 61000-4-2 Contact - Min. Contact - Max. Air - Min. Air - Max.	ESD	±8 ±30 ±15 ±30				kV
Peak Pulse Power (t <sub>p</sub> = 8/20 μs) <sup>2</sup>	P <sub>PP</sub>	500				W
Maximum Forward Voltage @ 10 mA	V <sub>F</sub>	1.1				V

Notes:

1. See Pulse Waveform.
2. See Peak Pulse Power vs. Pulse Time.
3. Measured between pins 8 or 5 to 1, 2, 3, 4, 6 and 7.

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

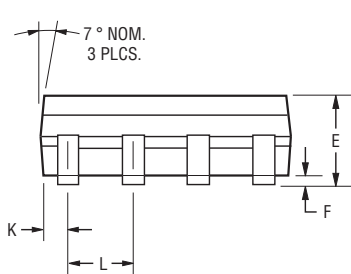
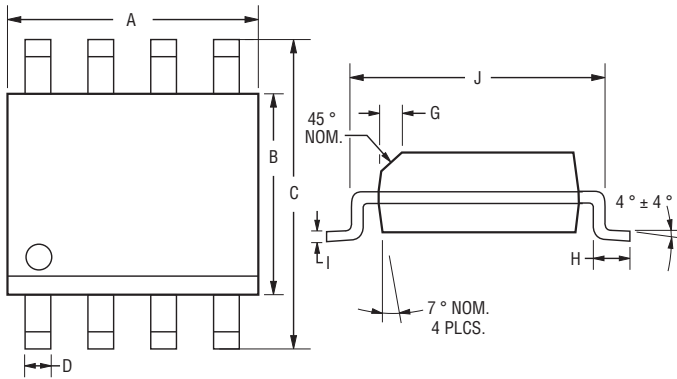
Parameter	Symbol	Max.	Unit
Operating Temperature	T <sub>J</sub>	-55 to +150	°C
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C

# CDNBS08-SRDAXX-4 Series - Steering Diode/TVS Array Combo



## Product Dimensions

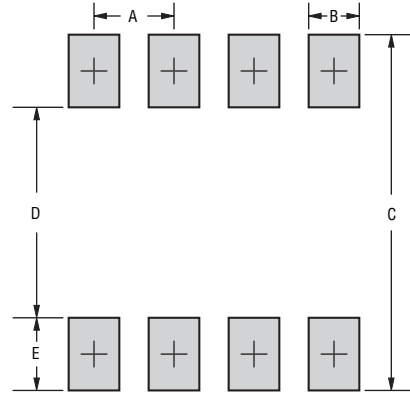
This is an RoHS compliant molded JEDEC narrow body SO-8 package with 100 % Sn plating on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.



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

Dimensions	
A	$\frac{4.80 - 5.00}{(0.189 - 0.197)}$
B	$\frac{3.81 - 4.00}{(0.150 - 0.157)}$
C	$\frac{5.80 - 6.20}{(0.228 \pm 0.244)}$
D	$\frac{0.36 - 0.51}{(0.014 - 0.020)}$
E	$\frac{1.35 - 1.75}{(0.053 - 0.069)}$
F	$\frac{0.102 - 0.203}{(0.004 - 0.008)}$
G	$\frac{0.25 - 0.50}{(0.010 - 0.020)}$
H	$\frac{0.51 - 1.12}{(0.020 - 0.044)}$
I	$\frac{0.190 - 0.229}{(0.0075 - 0.0090)}$
J	$\frac{4.60 - 5.21}{(0.181 - 0.205)}$
K	$\frac{0.28 - 0.79}{(0.011 - 0.031)}$
L	$\frac{1.27}{(0.050)}$

## Recommended Footprint



Dimensions	
A	$\frac{1.143 - 1.397}{(0.045 - 0.065)}$
B	$\frac{0.635 - 0.889}{(0.025 - 0.035)}$
C	$\frac{6.223}{(0.245)}$ Min.
D	$\frac{3.937 - 4.191}{(0.155 - 0.165)}$
E	$\frac{1.016 - 1.27}{(0.040 - 0.050)}$

## Typical Part Marking

CDNBS08-SRDA3.3-4..... PRA  
 CDNBS08-SRDA05-4..... PRB  
 CDNBS08-SRDA12-4..... PRD  
 CDNBS08-SRDA15-4..... PRE

## How to Order

**CD NBS08 - SRDA 3.3 - 4**

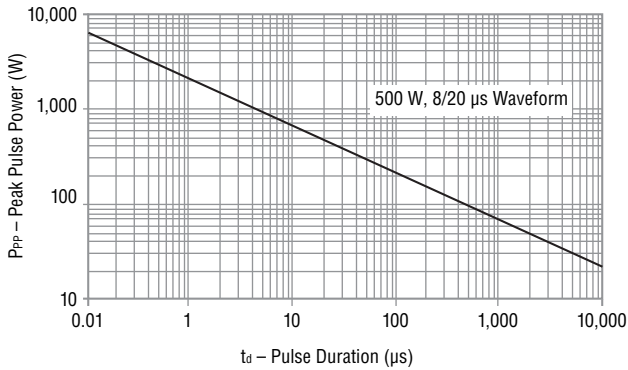
Common Code \_\_\_\_\_  
 Chip Diode \_\_\_\_\_  
 Package \_\_\_\_\_  
 NBS08 = Narrow Body SOIC8 Package  
 Model \_\_\_\_\_  
 SRDA = Steering/TVS Diode Array  
 Working Peak Reverse Voltage \_\_\_\_\_  
 3.3 = 3.3 V<sub>RWM</sub> (Volts)  
 Number of Protection Lines \_\_\_\_\_  
 4 = 4 Lines

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

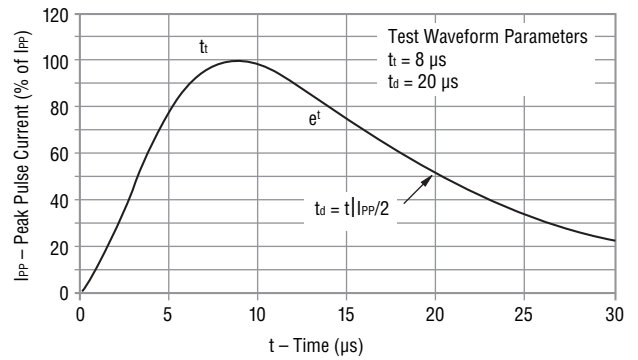
# CDNBS08-SRDAXX-4 Series - Steering Diode/TVS Array Combo

## Performance Graphs

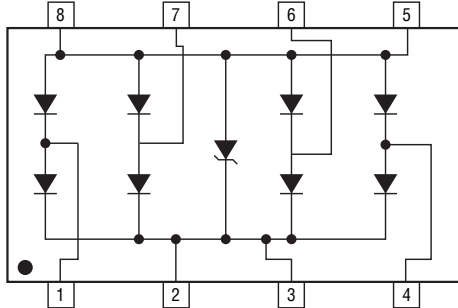
### Peak Pulse Power vs Pulse Time



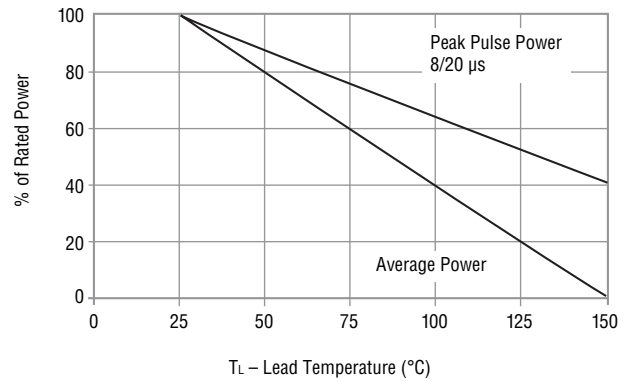
### Pulse Waveform



### Block Diagram



### Power Derating Curve



### Device Pinout

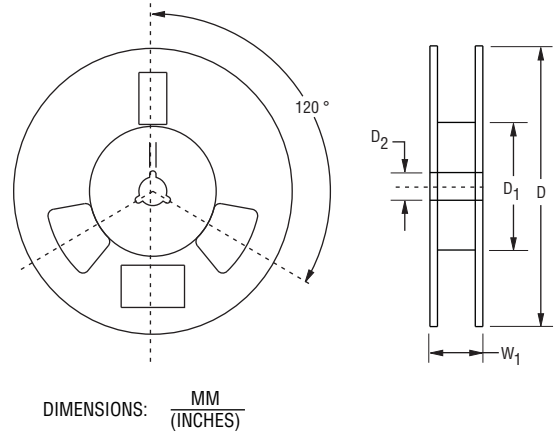
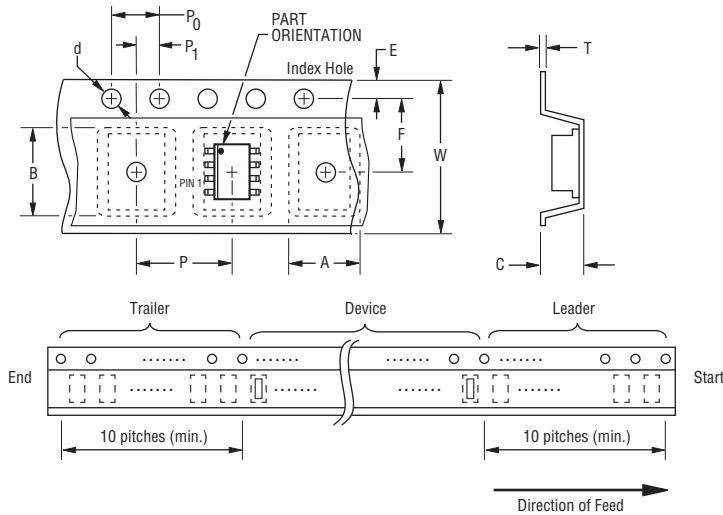
Pin	Function
1	I/O 1
2	+V <sub>REF</sub>
3	+V <sub>REF</sub>
4	I/O 2
5	GND
6	I/O 3
7	I/O 4
8	GND

# CDNBS08-SRDAXx-4 Series - Steering Diode/TVS Array Combo

**BOURNS®**

## Packaging Information

The product is packaged in tape and reel format per EIA-481 standard.



Item	Symbol	NSOIC 8L
Carrier Width	A	$6.7 \pm 0.10$ (0.264 ± 0.004)
Carrier Length	B	$5.5 \pm 0.10$ (0.217 ± 0.004)
Carrier Depth	C	$2.10 \pm 0.10$ (0.083 ± 0.004)
Sprocket Hole	d	$1.55 \pm 0.05$ (0.061 ± 0.002)
Reel Outside Diameter	D	330 (12.992)
Reel Inner Diameter	D <sub>1</sub>	$80.0$ (3.1500) MIN.
Feed Hole Diameter	D <sub>2</sub>	$13.0 \pm 0.20$ (0.512 ± 0.008)
Sprocket Hole Position	E	$1.75 \pm 0.10$ (0.069 ± 0.004)
Punch Hole Position	F	$3.50 \pm 0.05$ (0.138 ± 0.002)
Punch Hole Pitch	P	$8.00 \pm 0.10$ (0.315 ± 0.004)
Sprocket Hole Pitch	P <sub>0</sub>	$4.00 \pm 0.10$ (0.157 ± 0.004)
Embossment Center	P <sub>1</sub>	$2.00 \pm 0.05$ (0.079 ± 0.002)
Overall Tape Thickness	T	$0.20 \pm 0.10$ (0.008 ± 0.004)
Tape Width	W	$12.00 \pm 0.20$ (0.472 ± 0.008)
Reel Width	W <sub>1</sub>	$18.4$ (0.724) MAX.
Quantity per Reel	--	2500

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[www.bourns.com](http://www.bourns.com)

REV. 12/12

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