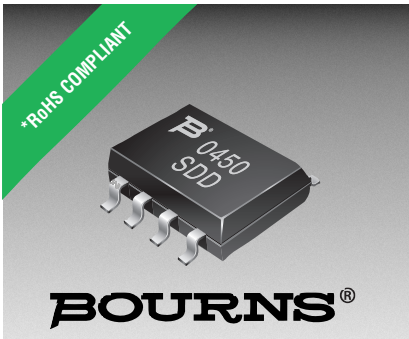




**THE DATASHEET OF  
CDNBS08-SRDA05-6**





## Features

- RoHS compliant\*
- Protects up to six lines
- Bidirectional configuration
- ESD protection: 30 kV max.
- Low capacitance: 15 pF



This series is obsolete and not recommended for new designs. The Model **CDNBS08-SRDA3.3-4** and **CDNBS08-SRDA05-4** are the recommended replacements.

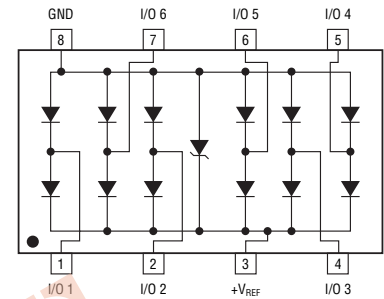
## CDNBS08-SRDAxx-6 - Steering Diode/TVS Array Combo

### 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 |
|---|--------------------|---------------|---------------|------|
|   |                    | SRDA3.3-6     | SRDA05-6      |      |
| Minimum Breakdown Voltage @ 1 mA                                    | V <sub>BR</sub>    | 4.0           | 6.0           | V    |
| Working Peak Voltage  | V <sub>WM</sub>    | 3.3           | 5.0           | V    |
| Maximum Clamping Voltage V <sub>C</sub> @ I <sub>P</sub>            | V <sub>C</sub>     | 8.0           | 9.8           | V    |
| Maximum Clamping Voltage @ 8/20 μs V <sub>C</sub> @ I <sub>PP</sub> | V <sub>C</sub>     | 10.9 V @ 43 A | 13.5 V @ 42 A | V    |
| Maximum Leakage Current @ V <sub>WM</sub>                           | I <sub>D</sub>     | 125           | 20            | μA   |
| Maximum Cap. Bidirectional @ 0 V, 1 MHz                             | C <sub>J(SD)</sub> | 15            |               | pF   |
| ESD Protection per IEC 61000-4-2                                    | ESD                | ±8            |               | kV   |
| Contact - Min.  |                    | ±30           |               |      |
| Contact - Max.  |                    | ±15           |               |      |
| Air - Min.  |                    | ±30           |               |      |
| Peak Pulse Power (t <sub>p</sub> = 8/20 μs) <sup>1</sup>            | P <sub>PP</sub>    | 500           |               | W    |
| Continuous Power Dissipation  | P <sub>PC</sub>    | 1             |               | W    |
| Maximum Forward Voltage @ 10 mA                                     | V <sub>F</sub>     | 1.1           |               | V    |

Notes:

1. See Peak Pulse Power vs. Pulse Time.
2. Capacitance measured at V<sub>WM</sub> = V<sub>CC</sub> connected between I/O pins to pin 8 and 5 (Gnd). V<sub>R</sub> = V<sub>WM</sub> @ 1 MHz.

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

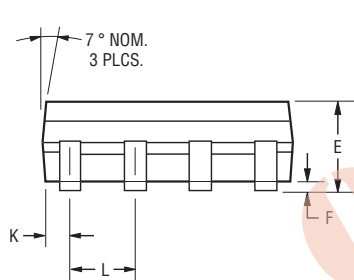
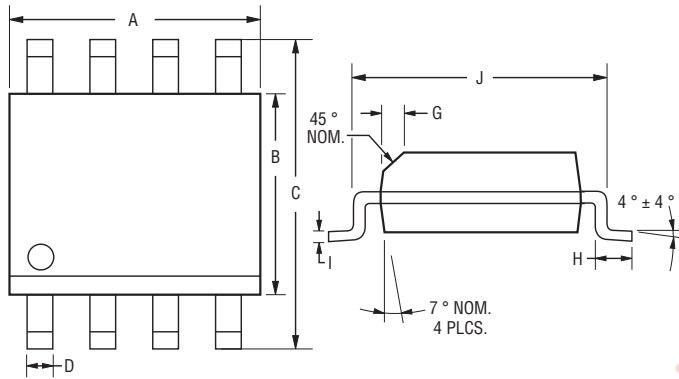
| Parameter             | Symbol           | Max.        | Unit |
|-----------------------|------------------|-------------|------|
| Operating Temperature | T <sub>J</sub>   | -55 to +150 | °C   |
| Storage Temperature   | T <sub>STG</sub> | -55 to +150 | °C   |

# CDNBS08-SRDAxx-6 - Steering Diode/TVS Array Combo



## Product Dimensions

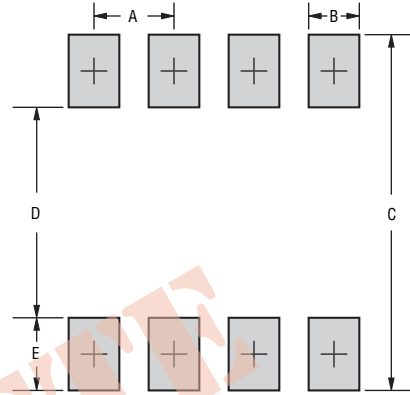
This is an RoHS compliant molded JEDEC narrow body SO-8 package with 100 % Sn plating on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.



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-SRDA3.3-6..... SGG  
 CDNBS08-SRDA05-6..... SGH

## How to Order

**CD NBS08 - SRDA 3.3 - 6**

Common Code \_\_\_\_\_  
 Chip Diode \_\_\_\_\_

Package \_\_\_\_\_  
 NBS08 = Narrow Body SOIC8 Package

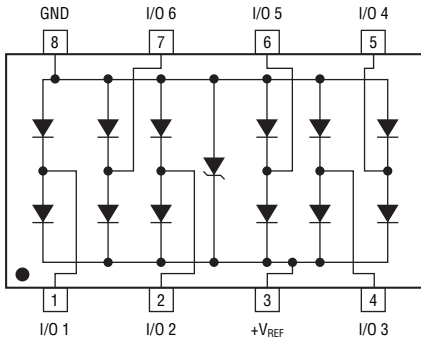
Model \_\_\_\_\_  
 SRDA = Steering/TVS Diode Array

Working Peak Reverse Voltage \_\_\_\_\_  
 3.3 = 3.3 V<sub>RWM</sub> (Volts)  
 05 = 5.0 V<sub>RWM</sub> (Volts)

Number of Protection Lines \_\_\_\_\_  
 6 = 6 Lines

# CDNBS08-SRDAXX-6 - Steering Diode/TVS Array Combo

## Block Diagram

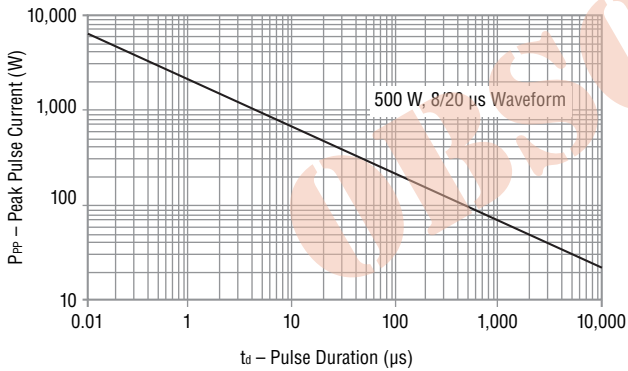


## Device Pinout

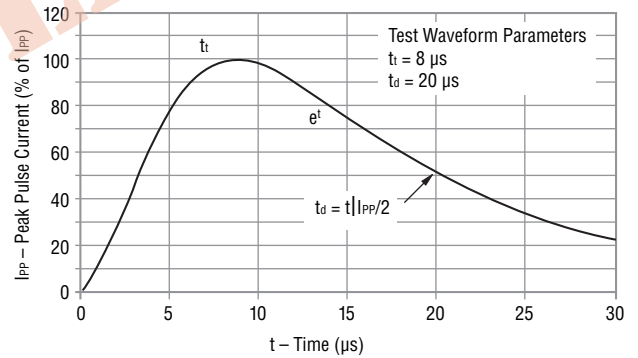
| Pin | Function          |
|-----|-------------------|
| 1   | I/O 1             |
| 2   | I/O 2             |
| 3   | +V <sub>REF</sub> |
| 4   | I/O 3             |
| 5   | I/O 4             |
| 6   | I/O 5             |
| 7   | I/O 6             |
| 8   | GND               |

## Performance Graphs

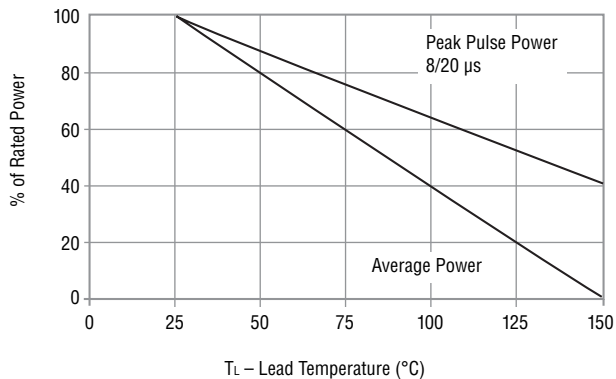
### Peak Pulse Power vs Pulse Time



### Pulse Waveform



### Power Derating Curve



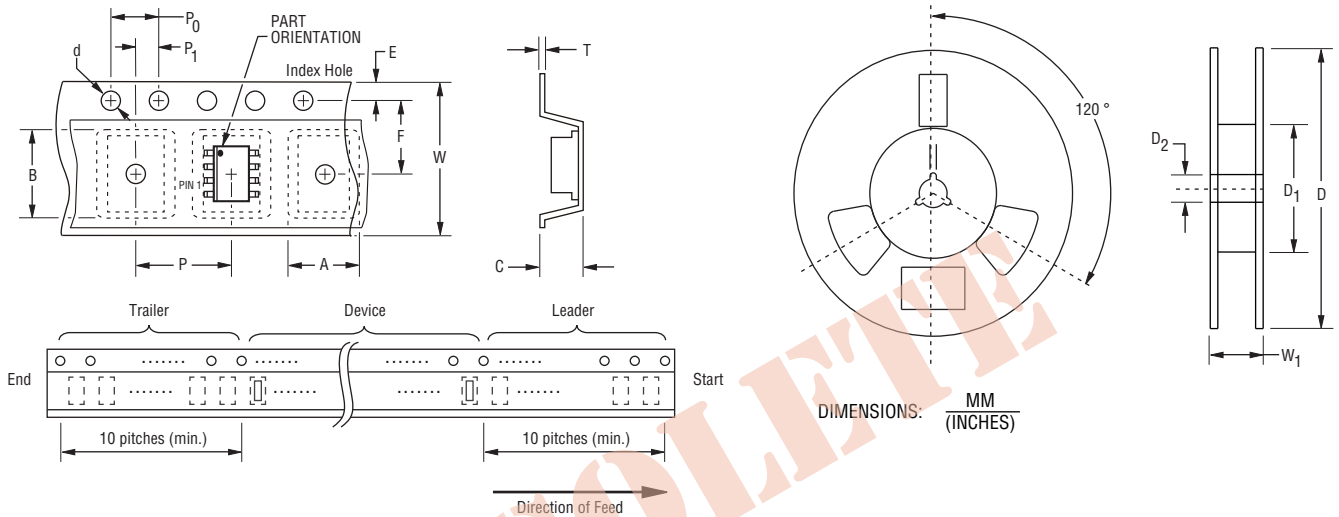
Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.

# CDNBS08-SRDAXx-6 - 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              | $\frac{6.7 \pm 0.10}{(0.264 \pm 0.004)}$   |
| Carrier Length         | B              | $\frac{5.5 \pm 0.10}{(0.217 \pm 0.004)}$   |
| Carrier Depth          | C              | $\frac{2.10 \pm 0.10}{(0.083 \pm 0.004)}$  |
| Sprocket Hole          | d              | $\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$  |
| Reel Outside Diameter  | D              | $\frac{330}{(12.992)}$                     |
| Reel Inner Diameter    | D <sub>1</sub> | $\frac{80.0}{(3.1500)}$ MIN.               |
| Feed Hole Diameter     | D <sub>2</sub> | $\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$  |
| Sprocket Hole Position | E              | $\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$  |
| Punch Hole Position    | F              | $\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$  |
| Punch Hole Pitch       | P              | $\frac{8.00 \pm 0.10}{(0.315 \pm 0.004)}$  |
| Sprocket Hole Pitch    | P <sub>0</sub> | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$  |
| Embossment Center      | P <sub>1</sub> | $\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$  |
| Overall Tape Thickness | T              | $\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$  |
| Tape Width             | W              | $\frac{12.00 \pm 0.20}{(0.472 \pm 0.008)}$ |
| Reel Width             | W <sub>1</sub> | $\frac{18.4}{(0.724)}$ MAX.                |
| Quantity per Reel      | --             | 2500                                       |

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

REV. 07/17

Specifications are subject to change without notice.  
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## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- ⊖ [View CDNBS08-SRDA05-6 on WIN SOURCE](#)
- ⊖ [Bourns Inc. Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management