

## Features

- Protects four lines
- Unidirectional
- 24 A peak surge current
- RoHS compliant\*

## Applications

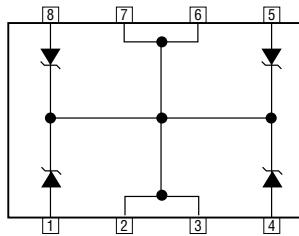
- PoE power protection
- DC power supply protection

# CDNBS08-T58CC - Common Cathode TVS Diode

### General Information

The Model CDNBS08-T58CC is designed to protect the power section in Power over Ethernet (PoE) applications. The device is packaged in an eight lead narrow body SOIC package. Bourns® Chip Diodes are available in surface mount packages and are easy to handle using standard pick and place equipment.

In addition to surge protection, the device provides Level 4 ESD protection per IEC 61000-4-2.



### Additional Information

Click these links for more information:



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

| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Current (8/20 μs)    | I <sub>PP</sub>  | 24          | A    |
| Peak Pulse Power (8/20 μs)      | P <sub>PP</sub>  | 2700        | W    |
| Working Peak Reverse Voltage    | V <sub>WM</sub>  | 58          | V    |
| IEC 61000-4-2 Contact Discharge | ESD              | 30          | kV   |
| Junction Temperature            | T <sub>J</sub>   | -55 to +150 | °C   |
| Storage Temperature             | T <sub>STG</sub> | -65 to +150 | °C   |

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

| Parameter                               | Symbol          | Test Condition                                | Min.                   | Typ. | Max. | Unit |
|---|-----------------|---|------------------------|------|------|------|
| Breakdown Voltage @ 1 mA                | V <sub>BR</sub> | I <sub>BR</sub> = 1 mA                        | 64.4                   | 68   | 71.2 | V    |
| V <sub>BR</sub> Temperature Coefficient | V <sub>BR</sub> | I <sub>BR</sub> = 1 mA                        |                        | 0.1  |      | %/°C |
| Leakage Current                         | I <sub>R</sub>  | V <sub>R</sub> = V <sub>WM</sub>              | T <sub>A</sub> = 25 °C |      | 200  | nA   |
|   |                 |   | T <sub>A</sub> = 85 °C |      | 1    | μA   |
| Capacitance                             | C               | V <sub>R</sub> = -44 V, f = 1 MHz, 30 mV rms  |                        | 55   |      | pF   |
| Clamping Voltage                        | V <sub>C</sub>  | I <sub>PP</sub> = 24 A (8/20 μs)              |                        |      | 100  | V    |
| Forward Voltage                         | V <sub>F</sub>  | I <sub>F</sub> = 1 A, T <sub>W</sub> = 100 μs |                        | 1    |      | V    |

### Device Pinout

| Pin | Function |
|-----|----------|
| 1   | ANODE 1  |
| 2   | GND      |
| 3   | GND      |
| 4   | ANODE 2  |
| 5   | ANODE 3  |
| 6   | GND      |
| 7   | GND      |
| 8   | ANODE 4  |

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**WARNING Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)**

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.

Specifications are subject to change without notice.

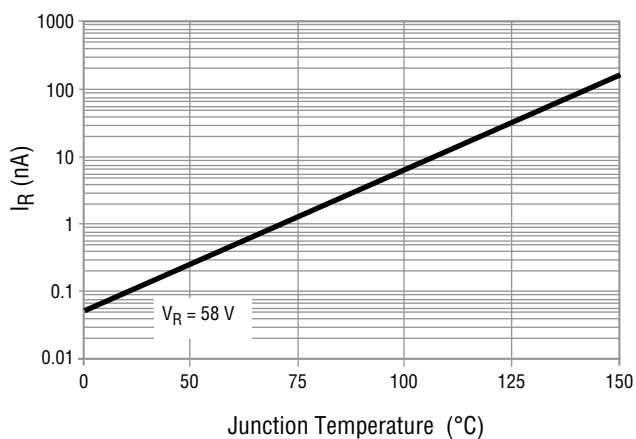
Users should verify actual device performance in their specific applications.

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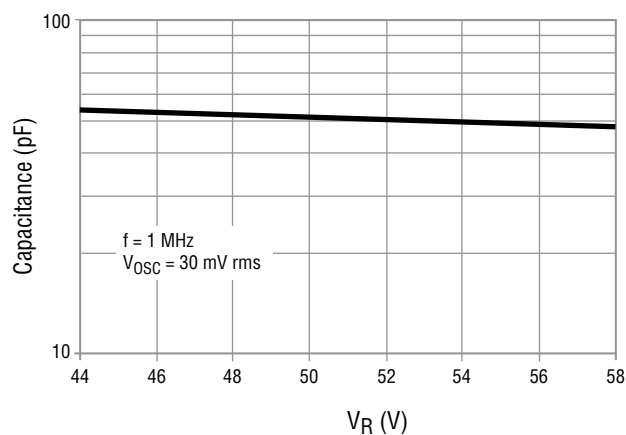
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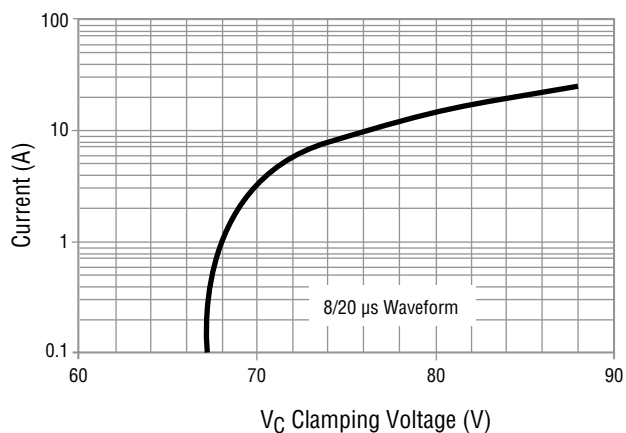
Typical Leakage vs. Junction Temperature



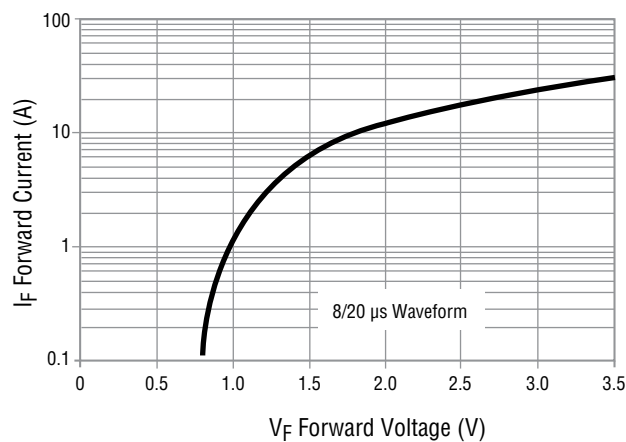
Typical Capacitance vs. Reverse Voltage



Typical Clamping Voltage vs. Current



Typical Forward Voltage vs. Forward Current



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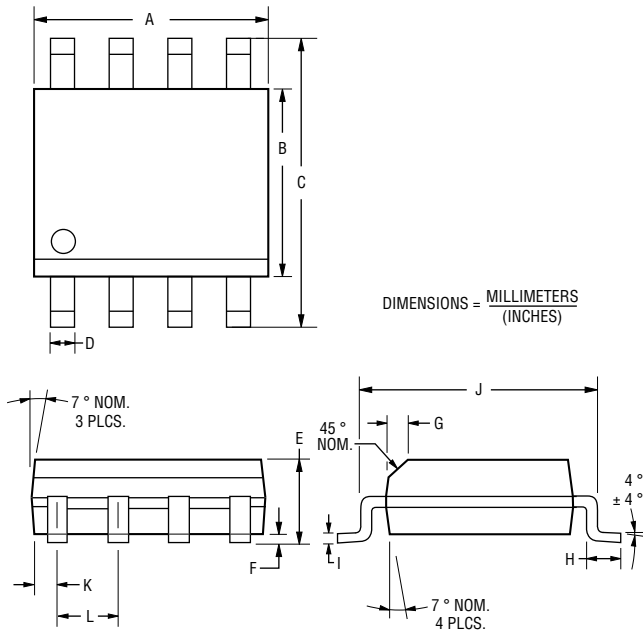
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## Product Dimensions

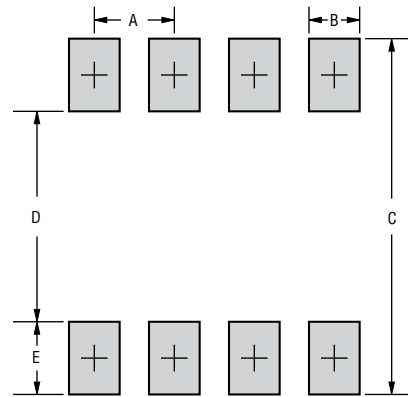
This is an RoHS compliant molded JEDEC narrow body SO-8 package with 100 % Sn plating on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.



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



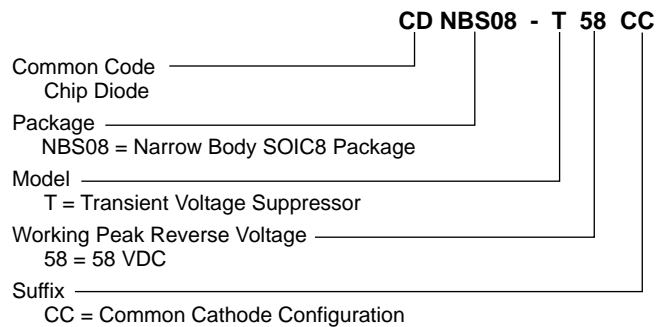
| Dimensions |                        |
|------------|------------------------|
| A          | $\frac{1.27}{(0.050)}$ |
| B          | $\frac{0.51}{(0.020)}$ |
| C          | $\frac{6.80}{(0.268)}$ |
| D          | $\frac{4.20}{(0.165)}$ |
| E          | $\frac{1.30}{(0.051)}$ |

DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

## Typical Part Marking

CDNBS08-T58CC .....4T58CC

## How to Order



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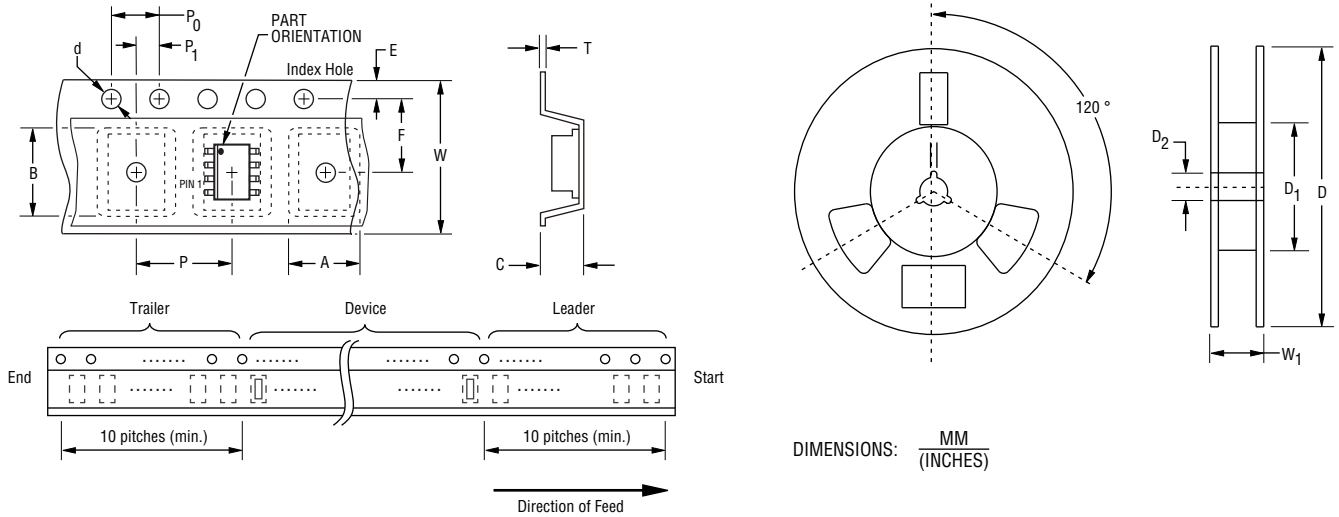
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## Packaging Information

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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