

Features

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

Applications

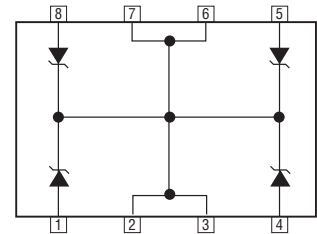
- PoE power protection
- DC power supply protection

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.



Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

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

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

| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|-----------------|---|------------------------|------|------|------|
| Breakdown Voltage @ 1 mA | V _{BR} | I _{BR} = 1 mA | 64.4 | 68 | 71.2 | V |
| V _{BR} Temperature Coefficient | V _{BR} | I _{BR} = 1 mA | | 0.1 | | %/°C |
| Leakage Current | I _R | V _R = V _{WM} | T _A = 25 °C | | 200 | nA |
| | | | T _A = 85 °C | | 1 | μA |
| Capacitance | C | V _R = -44 V, f = 1 MHz, 30 mV rms | | 55 | | pF |
| Clamping Voltage | V _C | I _{PP} = 24 A (8/20 μs) | | | 100 | V |
| Forward Voltage | V _F | I _F = 1 A, T _W = 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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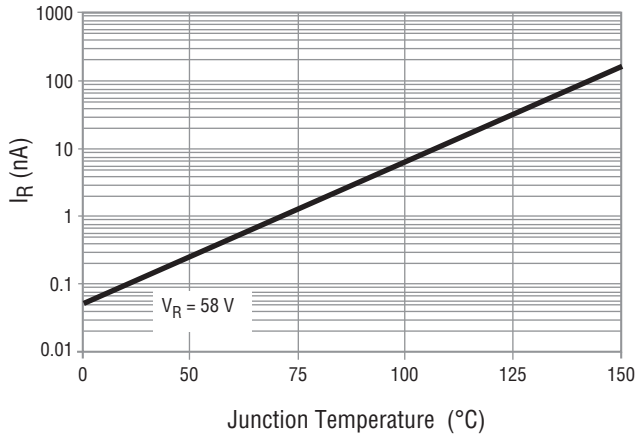
*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time. Users should verify actual device performance in their specific applications.

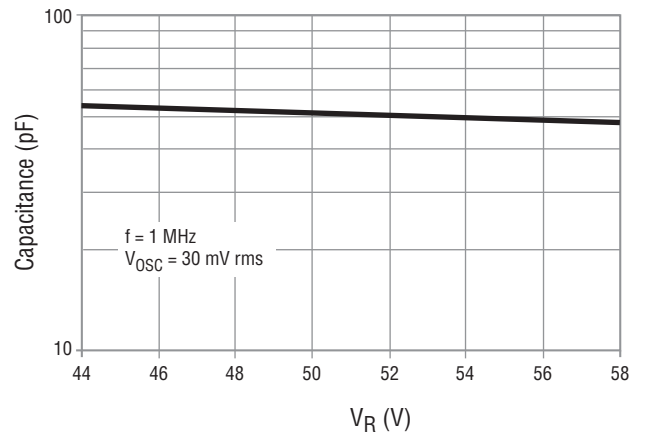
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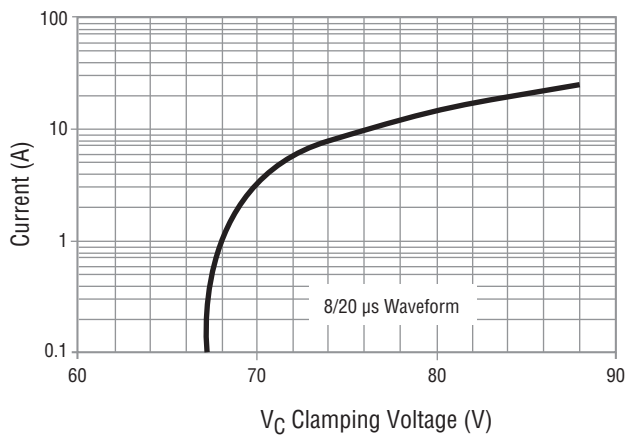
Typical Leakage vs. Junction Temperature



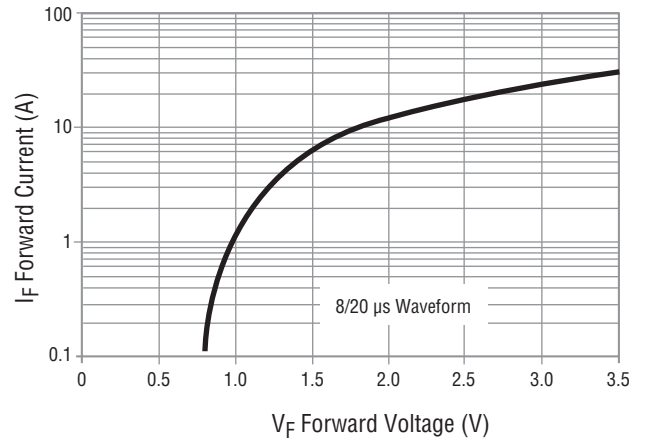
Typical Capacitance vs. Reverse Voltage



Typical Clamping Voltage vs. Current



Typical Forward Voltage vs. Forward Current



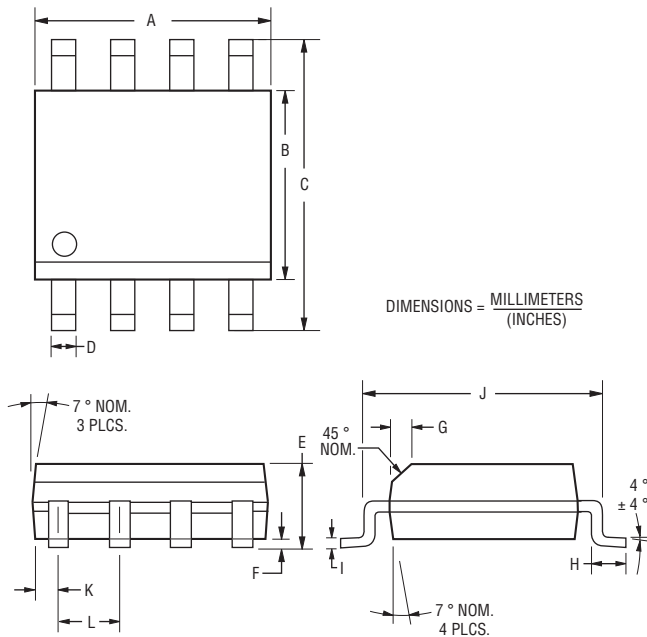
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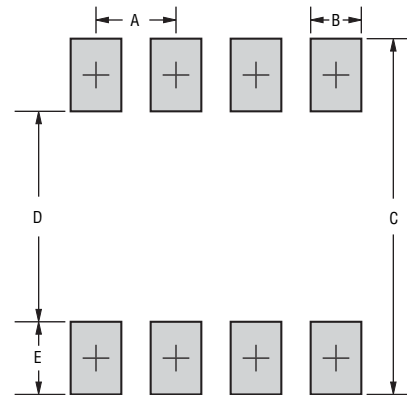
Product Dimensions

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 | |
|------------|---|
| 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 | $\frac{1.30}{(0.051)}$ |

Typical Part Marking

CDNBS08-T58CC 4T58CC

How to Order

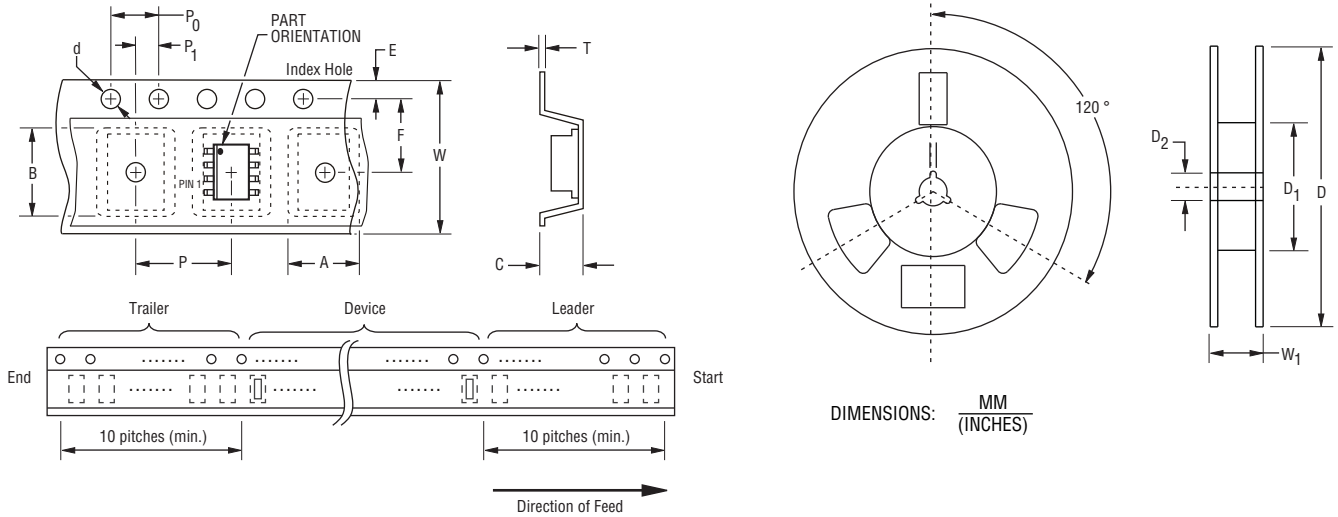
CD NBS08 - T 58 CC

Common Code _____
 Chip Diode
 Package _____
 NBS08 = Narrow Body SOIC8 Package
 Model _____
 T = Transient Voltage Suppressor
 Working Peak Reverse Voltage _____
 58 = 58 VDC
 Suffix _____
 CC = Common Cathode Configuration

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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 ₁ | $\frac{80.0}{(3.1500)}$ MIN. |
| Feed Hole Diameter | D ₂ | $\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$ |
| 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 ₀ | $\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$ |
| Embossment Center | P ₁ | $\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$ |
| 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 ₁ | $\frac{18.4}{(0.724)}$ MAX. |
| Quantity per Reel | -- | 2500 |