CDNBS08-T58CC - Common Cathode TVS Diode

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

Applications
- PoE power protection
- DC power supply protection

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 (@ TA = 25 °C Unless Otherwise Noted)

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

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

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

Device Pinout

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ANODE 1</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>ANODE 2</td>
</tr>
<tr>
<td>5</td>
<td>ANODE 3</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
<tr>
<td>8</td>
<td>ANODE 4</td>
</tr>
</tbody>
</table>

General Information (Continued)

Users should verify actual device performance in their specific applications.

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WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov
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**Typical Leakage vs. Junction Temperature**

![Graph showing leakage vs. junction temperature](image)

**Typical Capacitance vs. Reverse Voltage**

![Graph showing capacitance vs. reverse voltage](image)

**Typical Clamping Voltage vs. Current**

![Graph showing clamping voltage vs. current](image)

**Typical Forward Voltage vs. Forward Current**

![Graph showing forward voltage vs. forward current](image)

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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.

Recommended Footprint

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.27 (0.050)</td>
</tr>
<tr>
<td>B</td>
<td>0.51 (0.020)</td>
</tr>
<tr>
<td>C</td>
<td>6.80 (0.268)</td>
</tr>
<tr>
<td>D</td>
<td>4.20 (0.165)</td>
</tr>
<tr>
<td>E</td>
<td>1.30 (0.051)</td>
</tr>
</tbody>
</table>

Dimensions: MM (INCHES)

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.

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**Item** | **Symbol** | **NSOIC 8L**  
--- | --- | ---  
Carrier Width | A | 6.7 ± 0.10 (0.264 ± 0.004)  
Carrier Length | B | 5.5 ± 0.10 (0.217 ± 0.004)  
Carrier Depth | C | 2.10 ± 0.10 (0.083 ± 0.004)  
Sprocket Hole | d | 1.55 ± 0.05 (0.061 ± 0.002)  
Reel Outside Diameter | D | 330 (12.992)  
Reel Inner Diameter | D1 | 80.0 (3.1500) MIN.  
Feed Hole Diameter | D2 | 13.0 ± 0.20 (0.512 ± 0.008)  
Sprocket Hole Position | E | 1.75 ± 0.10 (0.069 ± 0.004)  
Punch Hole Position | F | 3.50 ± 0.05 (0.138 ± 0.002)  
Punch Hole Pitch | P | 8.00 ± 0.10 (0.315 ± 0.004)  
Sprocket Hole Pitch | P0 | 4.00 ± 0.10 (0.157 ± 0.004)  
Embossment Center | P1 | 2.00 ± 0.05 (0.079 ± 0.002)  
Overall Tape Thickness | T | 0.20 ± 0.10 (0.008 ± 0.004)  
Tape Width | W | 12.00 ± 0.20 (0.472 ± 0.008)  
Reel Width | W1 | 18.4 (0.724) MAX.  
Quantity per Reel | -- | 2500
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