



Features

- RoHS compliant*
- ESD protection >25k V
- Protects 6 unidirectional lines
- Protects 5 bidirectional lines

Applications

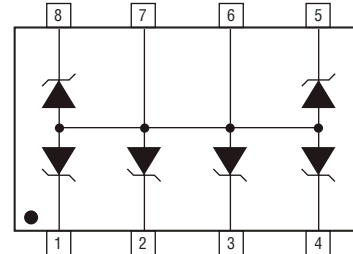
- Sensor electronics
- Portable electronics
- RS232, RS422 & RS423 data lines

CDNBS08-SMDA05-6 – Standard Cap TVS Diode Arrays

General Information

The CDNBS08-SMDA05-6 series provides ESD, EFT and Surge protection for external ports meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.

The Transient Voltage Suppressor offers a Working Peak Reverse Voltage from 5 V and Minimum Breakdown Voltage range of 6 V. The device can protect 6 unidirectional Lines or 5 bidirectional lines which is available in a JEDEC SO-8 package and intended to be mounted directly onto an FR4 printed circuit board.



Absolute Maximum Ratings (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------------------|
| Peak Pulse Power ($t_p = 8/20\ \mu\text{s}$) ^{NOTE 1} | P_{PK} | 350 | W |
| Storage Temperature | T_{STG} | -55 to +150 | $^\circ\text{C}$ |
| Operating Temperature | T_{OPR} | -55 to +150 | $^\circ\text{C}$ |

Notes:

1. See Peak Pulse Power vs. Pulse Time.

Electrical Characteristics (@ $T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Symbol | Value | Unit |
|---|----------|---------------------|---------------|
| Minimum Breakdown Voltage @ 1 mA | V_{BR} | 6.0 | V |
| Maximum Working Peak Voltage | V_{WM} | 5.0 | V |
| Maximum Leakage Current @ V_{WM} | I_D | 20 | μA |
| Maximum Clamping Voltage @ $I_P = 1\ \text{A}$ | V_C | 9.8 | V |
| Maximum Clamping Voltage @ $I_{PP} = 17\ \text{A}$ | V_C | 18 | V |
| Maximum Junction Capacitance @ 0 V, 1 MHz | C_J | 120 | pF |
| ESD Protection: Per IEC 61000-4-2 Standard Minimum Contact Discharge Minimum Air Discharge | | ± 8 ± 15 | kV kV |
| EFT Protection: Per IEC61000-4-4 @ 5/50 ns | | 40 | A |
| Surge Protection per IEC 61000-4-5 @ 8/20 μs Level 1 (Line-Gnd) & Level 2 (Line-Line) | | 12 | A |

Notes:

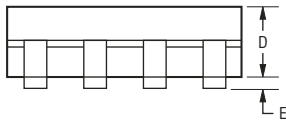
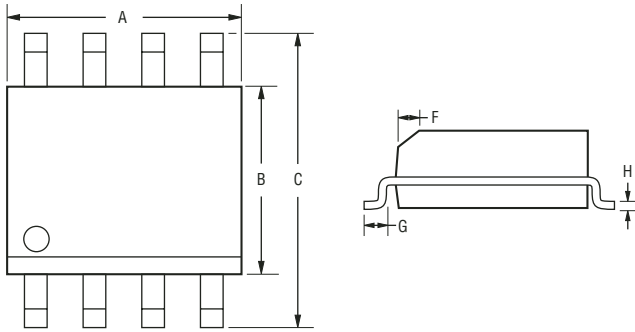
1. Test from individual pins 1, 2, 3, 4, 5 and 8 to ground pins 6 and 7 (unidirectional only).
2. Pins 6 & 7 not connected for bidirectional use.

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Product Dimensions

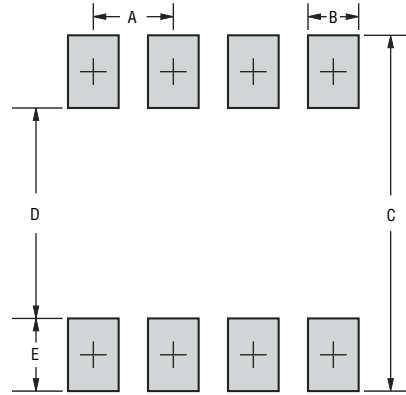
This is a molded JEDEC SO-8 package with lead free 100 % Sn plating on the terminations. It weighs approximately 70 mg and has a flammability rating of UL 94V-0.



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

| Dimensions | |
|------------|--|
| A | $\frac{4.80 - 5.00}{(0.189 - 0.196)}$ |
| B | $\frac{3.80 - 4.00}{(0.150 - 0.157)}$ |
| C | $\frac{5.80 - 6.20}{(0.229 - 0.244)}$ |
| D | $\frac{1.35 - 1.75}{(0.054 - 0.068)}$ |
| E | $\frac{0.10 - 0.25}{(0.004 - 0.008)}$ |
| F | $\frac{0.25 - 0.50}{(0.010 - 0.019)}$ |
| G | $\frac{0.40 - 1.250}{(0.016 - 0.049)}$ |
| H | $\frac{0.18 - 0.25}{(0.007 - 0.009)}$ |

Recommended Footprint



| Dimensions | |
|------------|---|
| A | $\frac{1.143 - 1.397}{(0.045 - 0.055)}$ |
| B | $\frac{0.635 - 0.889}{(0.025 - 0.035)}$ |
| C | $\frac{6.223}{(0.245)} \text{ Min.}$ |
| D | $\frac{3.937 - 4.191}{(0.155 - 0.165)}$ |
| E | $\frac{1.016 - 1.27}{(0.040 - 0.050)}$ |

How To Order

CD NBS08 - SMDA 05 - 6

Common Code _____
 CD = Chip Diode

Package _____
 • NBS08 = Narrow Body SOIC8 Package

Model _____
 SMDA = Standard Capacitance TVS Diode Array

Working Peak Voltage _____
 05 = 5 V_{WM} (Volts)

Minimum Breakdown Voltage _____
 6 = 6 V_{BR} (Volts)

Typical Part Marking

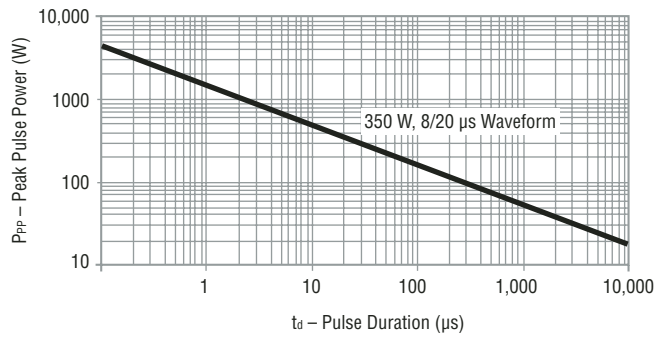
CDNBS08-SMDA-05-6QEB

CDNBS08-SMDA05-6 – Standard Cap TVS Diode Arrays

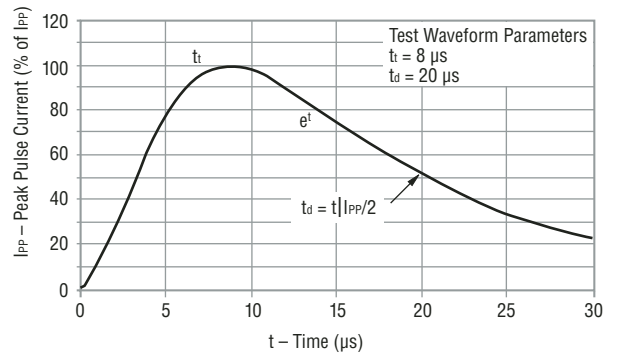


Performance Graphs

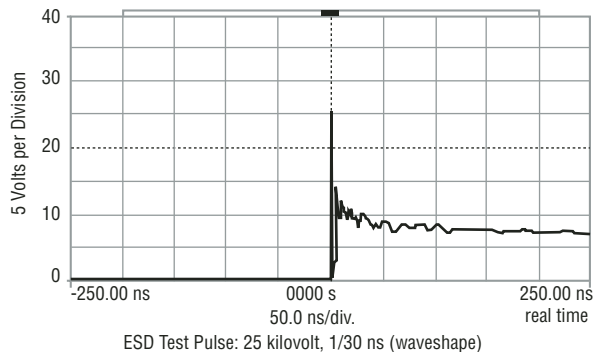
Peak Pulse Power vs Pulse Time



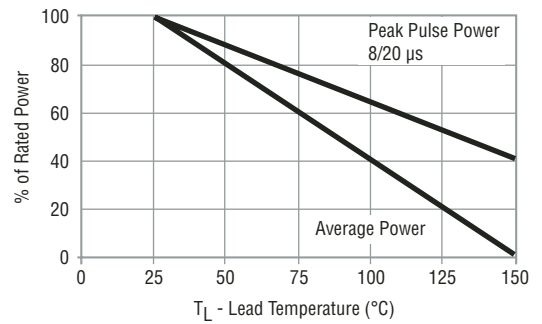
Pulse Waveform



CDNBS08-T05L ESD Pulse Response



Power Derating Curve

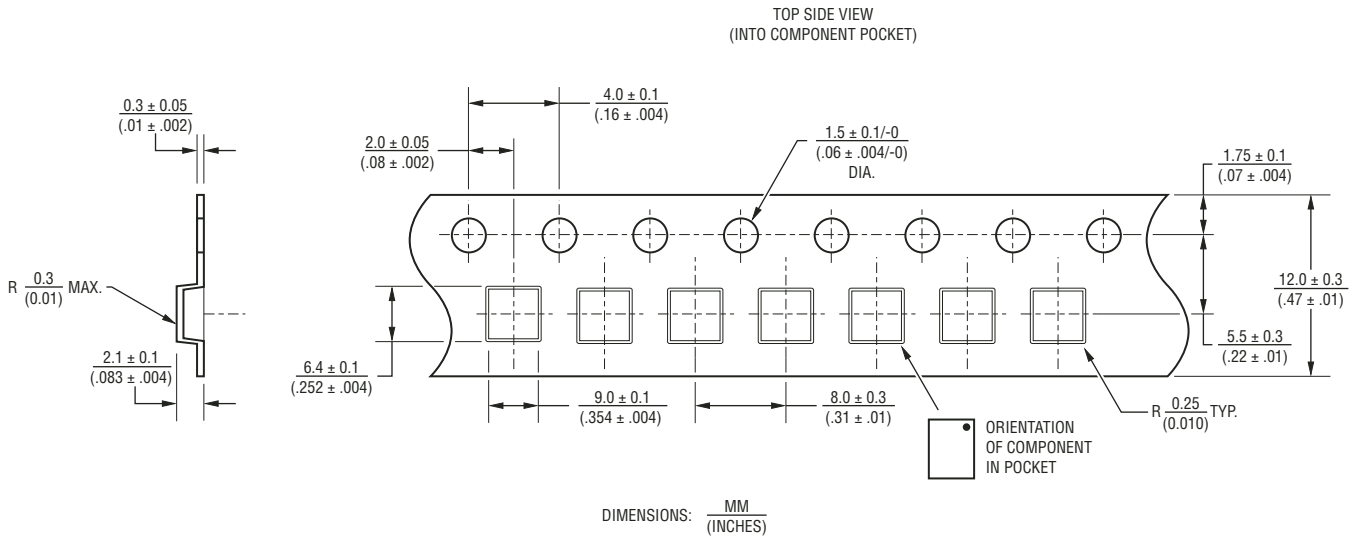


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Packaging Information

The surface mount product is packaged in a 12 mm x 8 mm tape and reel format per EIA-481 standard.



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