



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



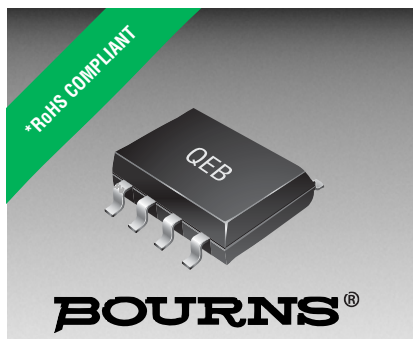
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Features

- RoHS compliant*
- ESD protection >25 kV
- Protects six unidirectional lines
- Protects five bidirectional lines

Applications

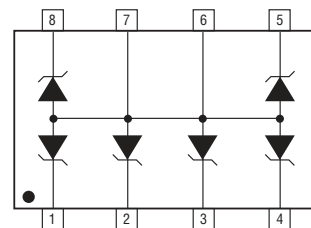
- Sensor electronics
- Portable electronics
- RS232, RS422 and RS423 data lines

CDNBS08-SMDA05-6 - Std. Capacitance 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 six unidirectional lines or five bidirectional lines, available in a JEDEC SO-8 package and intended to be mounted directly onto an FR4 printed circuit board.



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

| Parameter | Symbol | Value | Unit |
|--|-----------|-------------|------------------|
| Peak Pulse Power ($t_p = 8/20 \mu\text{s}$) 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 (@ $T_A = 25^\circ\text{C}$ 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 Minimum Contact Discharge Minimum Air Discharge | ESD | ± 8 ± 15 | kV |
| EFT Protection per IEC 61000-4-4 @ 5/50 ns | EFT | 40 | A |
| Surge Protection per IEC 61000-4-5 @ 8/20 μs Level 1 (Line-Gnd) & Level 2 (Line-Line) | | 12 | A |

Notes:

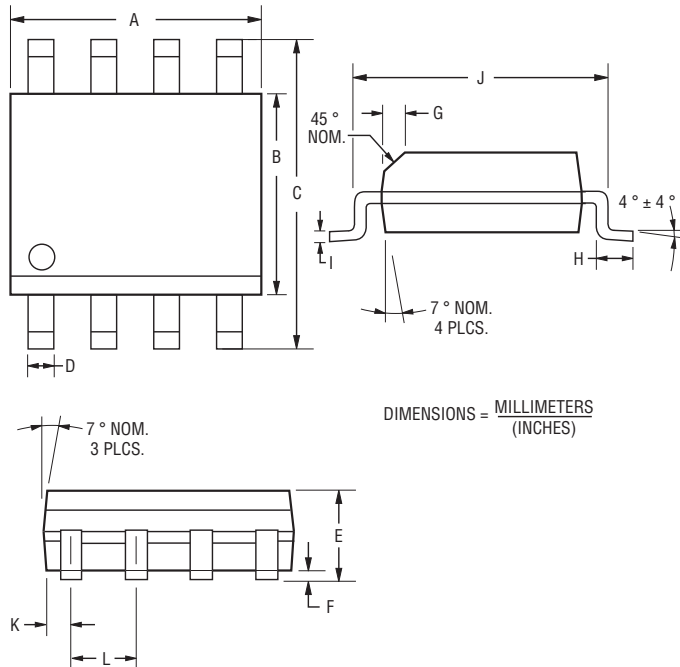
1. Test from individual pins 1, 2, 3, 4, 5 and 8 to ground pins 6 and 7 (unidirectional only).
2. Pins 6 & 7 not connected for bidirectional use.

CDNBS08-SMDA05-6 - Std. Capacitance TVS Diode Arrays

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Product Dimensions

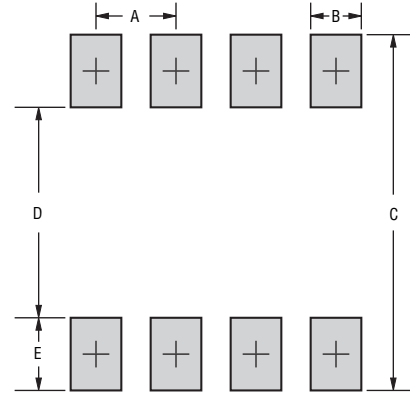
This is an RoHS compliant molded JEDEC SO-8 package with 100 % Sn plating on the terminations. It weighs approximately 70 mg and has a flammability rating of UL 94V-0.



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

| Dimensions | |
|------------|---|
| A | $\frac{4.80 - 5.00}{(0.189 - 0.197)}$ |
| 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 | $\frac{6.223}{(0.245)} \text{ Min.}$ |
| D | $\frac{3.937 - 4.191}{(0.155 - 0.165)}$ |
| E | $\frac{1.016 - 1.27}{(0.040 - 0.050)}$ |

Typical Part Marking

CDNBS08-SMDA-05-6 QEB

How to Order

CD NBS08 - SMDA 05 - 6

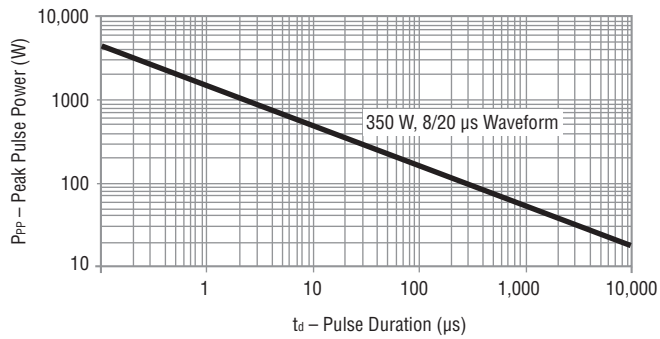
Common Code _____
 Chip Diode _____
 Package _____
 NBS08 = Narrow Body SOIC8 Package
 Model _____
 SMDA = Standard Capacitance TVS Diode Array
 Working Peak Voltage _____
 0.5 = 5 V_{WM} (Volts)
 Minimum Breakdown Voltage _____
 6 = 6 V_{BR} (Volts)

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

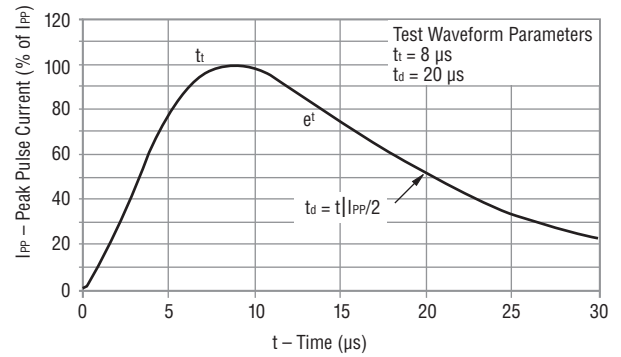
CDNBS08-SMDA05-6 - Std. Capacitance TVS Diode Arrays

Performance Graphs

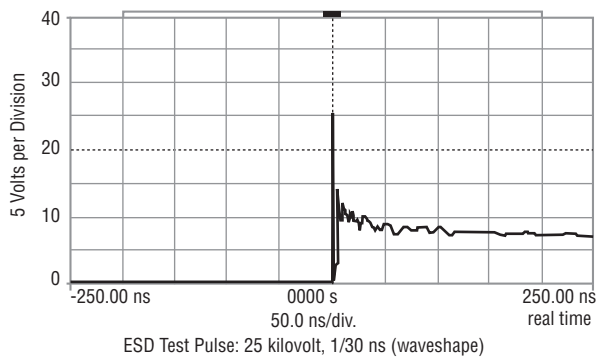
Peak Pulse Power vs Pulse Time



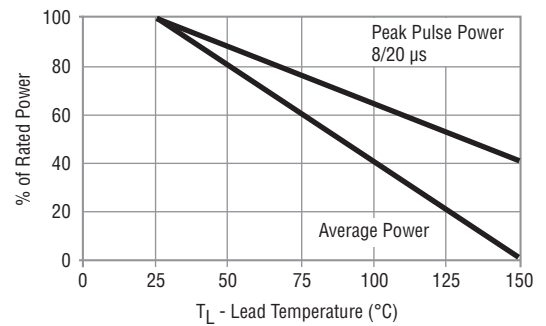
Pulse Waveform



CDNBS08-T05L ESD Pulse Response



Power Derating Curve

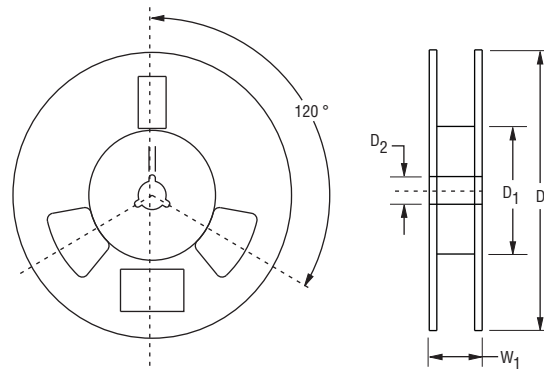
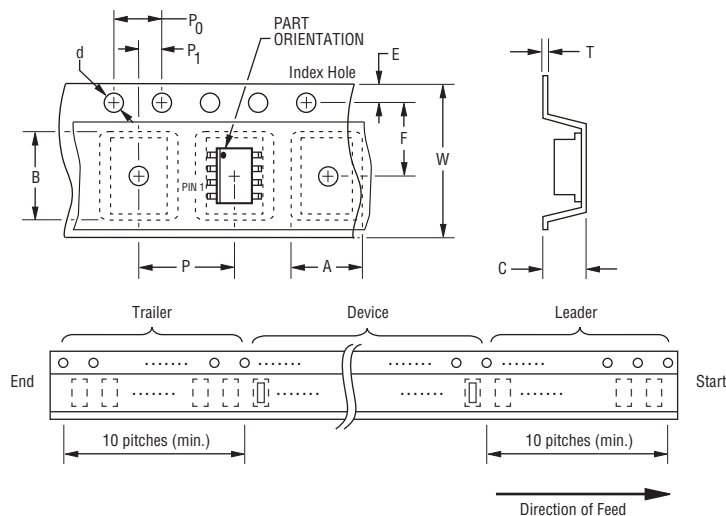


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Packaging Information

The product is packaged in tape and reel format per EIA-481 standard.



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

| 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 | $\frac{80.0}{(3.1500)} \text{ MIN.}$ |
| 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 | $\frac{18.4}{(0.724)} \text{ MAX.}$ |
| Quantity per Reel | -- | 2500 |

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