

## Features

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

## Applications

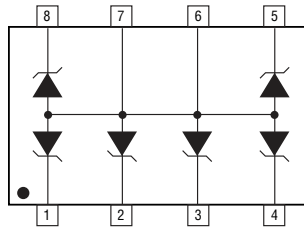
- Sensor electronics
- Portable electronics
- RS232, RS422 and RS423 data lines

# 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.



### Additional Information

Click these links for more information:



[PRODUCT SELECTOR](#) [TECHNICAL LIBRARY](#) [INVENTORY](#) [SAMPLES](#) [CONTACT](#)

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (t <sub>p</sub> = 8/20 μs) <sup>1</sup>	P <sub>PK</sub>	350	W
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C
Operating Temperature	T <sub>OPR</sub>	-55 to +150	°C

Notes:

1. See Peak Pulse Power vs. Pulse Time.

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

Parameter	Symbol	Value	Unit
Minimum Breakdown Voltage @ 1 mA	V <sub>BR</sub>	6.0	V
Maximum Working Peak Voltage	V <sub>WM</sub>	5.0	V
Maximum Leakage Current @ V <sub>WM</sub>	I <sub>D</sub>	20	μA
Maximum Clamping Voltage @ I <sub>P</sub> = 1 A	V <sub>C</sub>	9.8	V
Maximum Clamping Voltage @ I <sub>PP</sub> = 17 A	V <sub>C</sub>	18	V
Maximum Junction Capacitance @ 0 V, 1 MHz	C <sub>J</sub>	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.



**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.

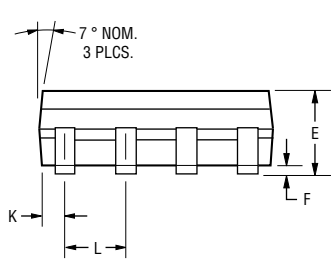
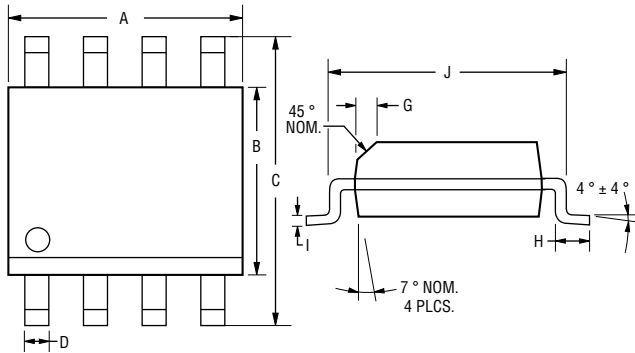
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# CDNBS08-SMDA05-6 - Std. Capacitance TVS Diode Arrays



## Product Dimensions

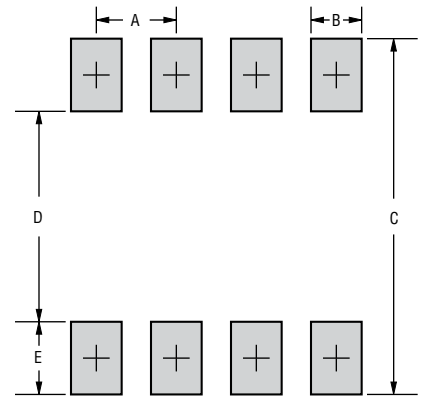
This is an RoHS compliant molded JEDEC SO-8 package with 100 % Sn plating on the terminations. It weighs approximately 70 mg and has a flammability rating of UL 94V-0.



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



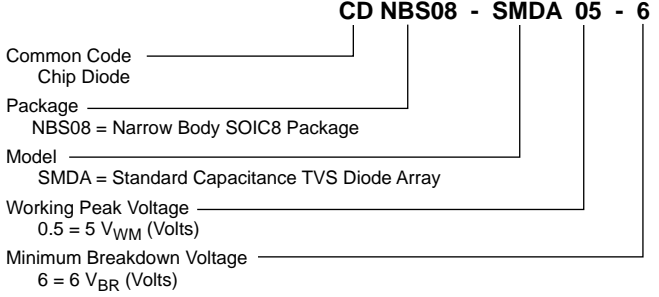
Dimensions	
A	$\frac{1.143 - 1.397}{(0.045 - 0.065)}$
B	$\frac{0.635 - 0.889}{(0.025 - 0.035)}$
C	$\frac{6.223}{(0.245)}$ Min.
D	$\frac{3.937 - 4.191}{(0.155 - 0.165)}$
E	$\frac{1.016 - 1.27}{(0.040 - 0.050)}$

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

## Typical Part Marking

CDNBS08-SMDA-05-6.....QEB

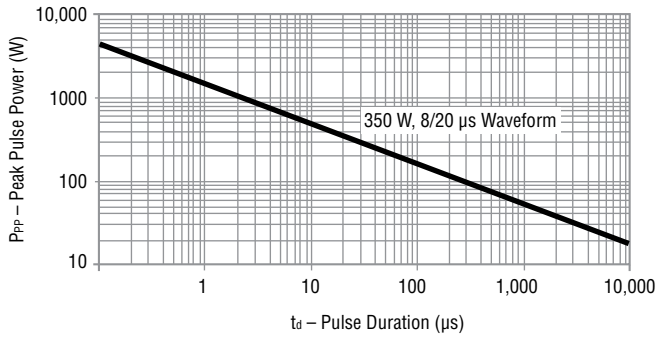
## How to Order



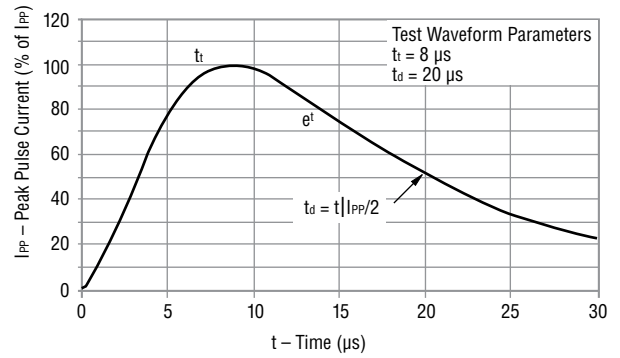
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Performance Graphs

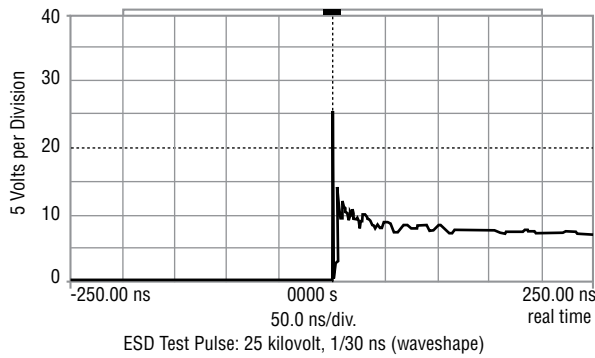
Peak Pulse Power vs Pulse Time



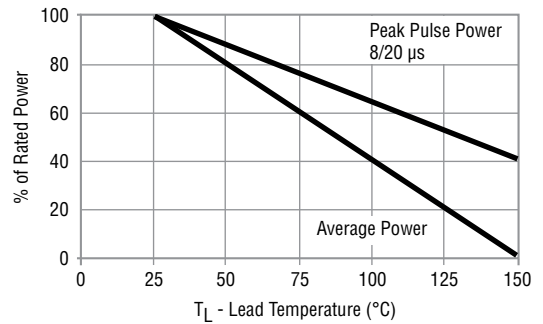
Pulse Waveform



CDNBS08-T05L ESD Pulse Response



Power Derating Curve



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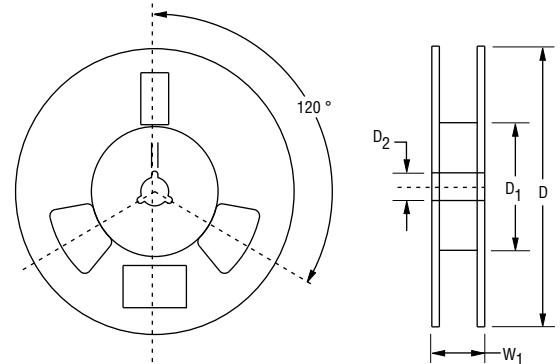
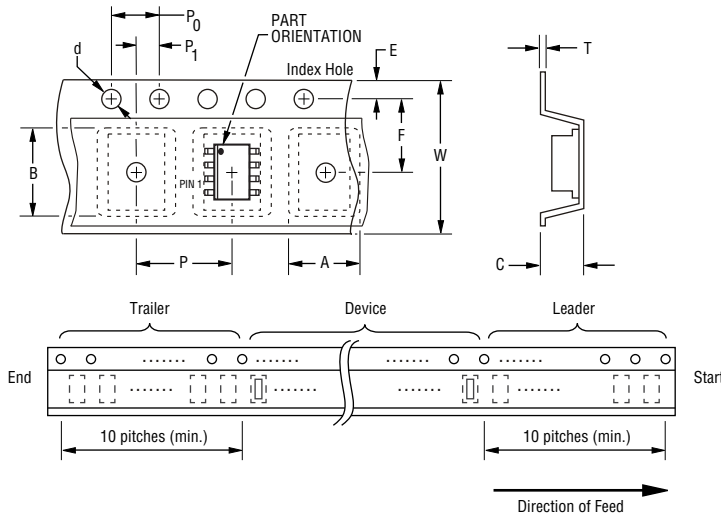
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## Packaging Information

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 <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

**BOURNS®**

**Asia-Pacific:** Tel: +886-2 2562-4117

Email: asiacus@bourns.com

**EMEA:** Tel: +36 88 885 877

Email: eurocus@bourns.com

**The Americas:** Tel: +1-951 781-5500

Email: americus@bourns.com

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