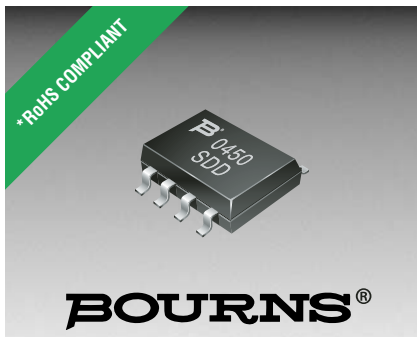




Features

- Lead free as standard
- RoHS compliant*
- Protects 4 lines
- Unidirectional & bidirectional configurations
- ESD protection > 40 KV

Applications

- Audio/video inputs
- RS-232, RS-422 & RS-423 data lines
- Portable electronics
- Medical sensors

CDNBS08-T03~T36C – TVS Diode Array Series

General Information

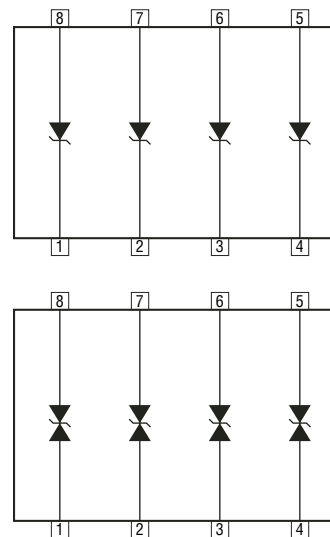
The markets of portable communications, computing and video equipment are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers Transient Voltage Suppressor Array diodes for surge and ESD protection applications, in 8 lead narrow body SOIC package size format. The Transient Voltage Suppressor Array series offer a choice of voltage types ranging from 3 V to 36 V in unidirectional and bidirectional configurations. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

The Bourns device will meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.

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

Parameter	Symbol	Max.	Unit
Operating Temperature	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^\circ\text{C}$



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

Parameter	Symbol	CDNBS08-														Unit
		Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	
		T03	T03C	T05	T05C	T08	T08C	T12	T12C	T15	T15C	T24	T24C	T36	T36C	
Breakdown Voltage @ 1 mA	V_{BR}	3.3		6.0		8.5		13.3		16.7		26.7		40.0		V
Working Peak Voltage	V_{WM}	3.0		5.0		8.0		12.0		15.0		24.0		36.0		V
Maximum Clamping Voltage V_C @ I_P^1	V_F	4.0		9.8		13.4		19.0		24.0		43.0		51.0		V
Maximum Clamping Voltage @ $8/20 \mu\text{s } V_C$ @ I_{PP}^1	V_F	10.9 V @ 43 A		13.5 V @ 42 A		16.9 V @ 34 A		25.9 V @ 27 A		30.0 V @ 17 A		49.0 V @ 12 A		76.8 V @ 9 A		V
Maximum Leakage Current @ V_{WM}	I_D	125		20		10		1		1		1		1		μA
Maximum Cap Unidirectional @ 0 V, 1 MHz	$C_{j(SD)}$	800		550		500		185		140		88		80		pF
Maximum Cap Bidirectional @ 0 V, 1 MHz	$C_{j(SD)}$	450		308		300		105		80		50		45		pF
Peak Pulse Power ($t_p = 8/20 \mu\text{s}$) ²	P_{PP}	500														W
Forward Voltage @ 100 mA, 300 μs – Square Wave ³	V_F	1.5														V

Notes:

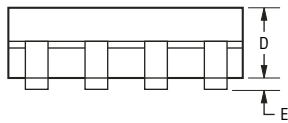
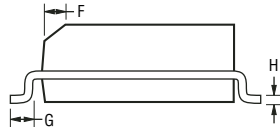
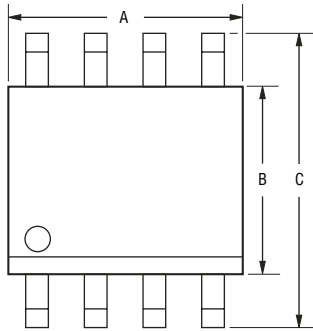
1. See Pulse Wave Form.
2. See Peak Pulse Power vs. Pulse Time.
3. Only applies to unidirectional devices.
4. Part numbers with a "C" suffix are bidirectional devices, i.e. CDNBS08-T03C.

CDNBS08-T03~T36C – TVS Diode Array Series

BOURNS®

Product Dimensions

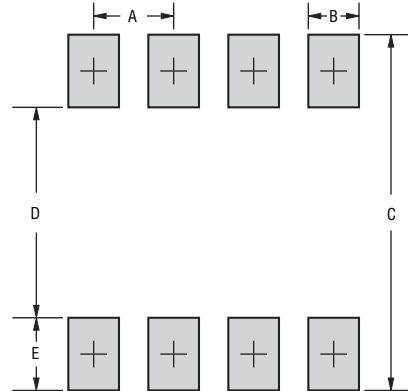
This is a molded JEDEC narrow body SO-8 package with lead free 100 % Sn plating on the lead frame. It weighs approximately 15 mg and has a flammability rating of UL 94V-0.



DIMENSIONS = $\frac{\text{MILLIMETERS}}{25.4}$ (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	$\frac{6.223}{(0.245)}$ Min.
D	$\frac{3.937 - 4.191}{(0.155 - 0.165)}$
E	$\frac{1.016 - 1.27}{(0.040 - 0.050)}$

How To Order

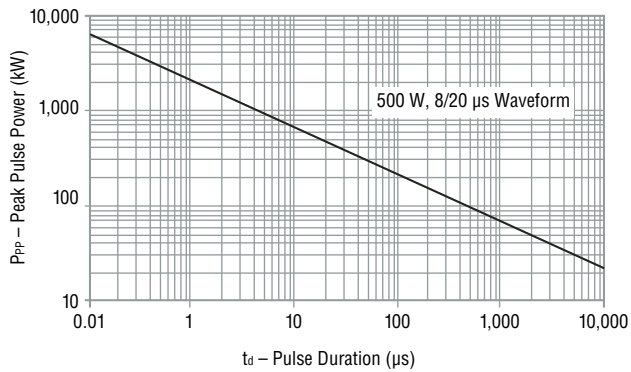
Common Code CD NBS08 - T 03 C
 Chip Diode
 Package • NBS08 = Narrow Body SOIC8 Package
 Model T = Transient Voltage Suppressor
 Working Peak Voltage 3 = 3 V_{RWM} (Volts)
 Suffix C = Bidirectional Diode

CDNBS08-T03~T36C – TVS Diode Array Series

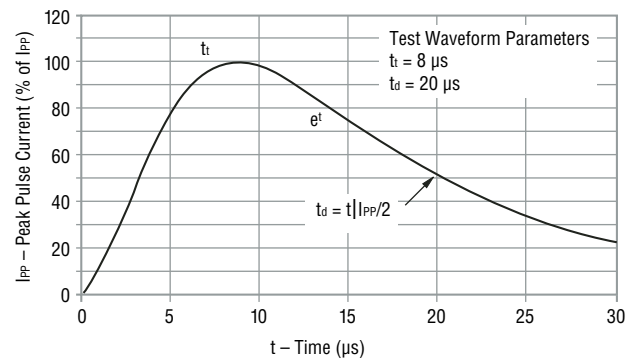
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Performance Graphs

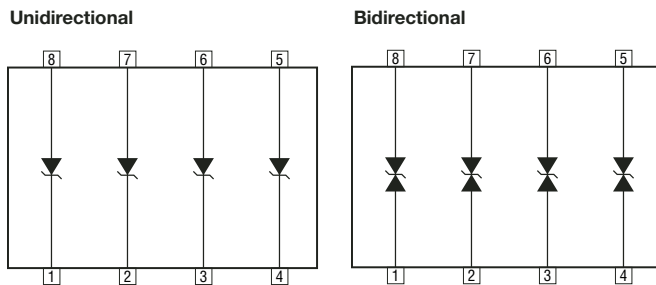
Peak Pulse Power vs Pulse Time



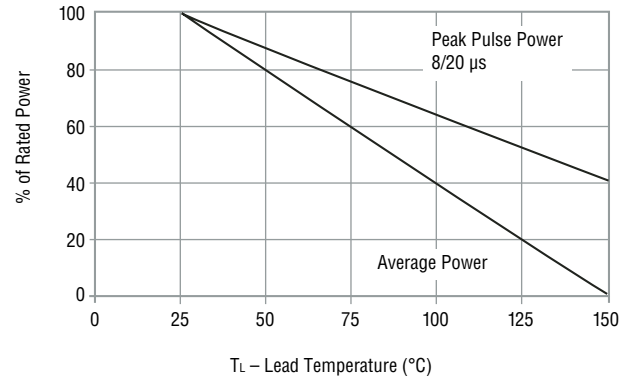
Pulse Wave Form



Block Diagram



Power Derating Curve



Device Pinout

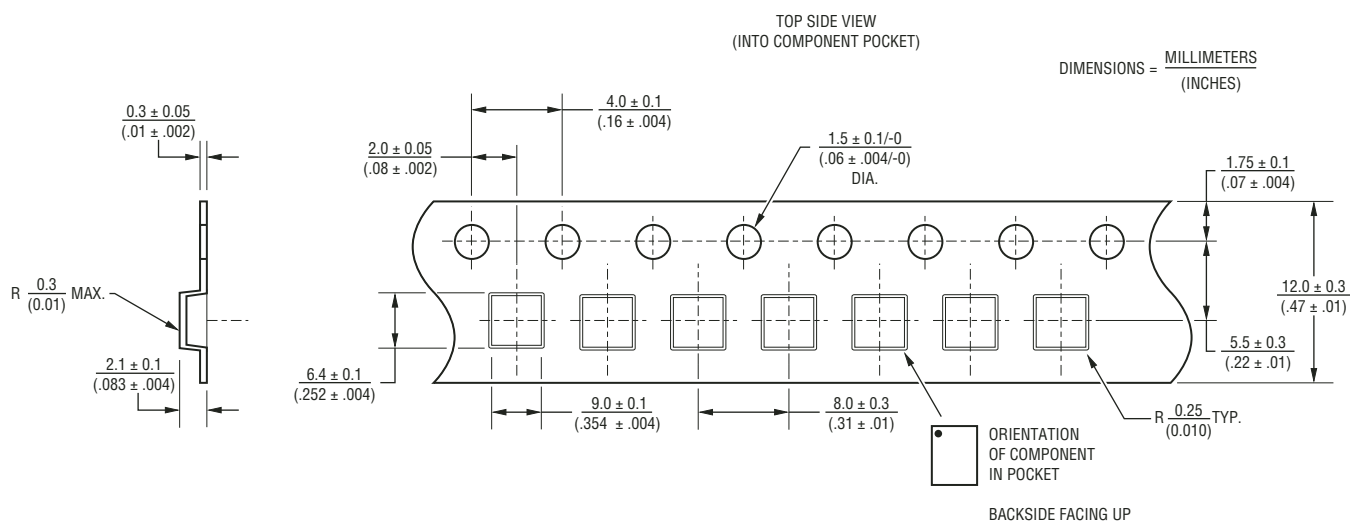
Pin	Function
1	I/O 1
2	I/O 2
3	I/O 3
4	I/O 4
5	GND
6	GND
7	GND
8	GND

CDNBS08-T03~T36C – TVS Diode Array Series

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Packaging

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



Reliable Electronic Solutions

Asia-Pacific:

Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116

Europe:

Tel: +41-41 768 5555 • Fax: +41-41 768 5510

The Americas:

Tel: +1-951 781-5500 • Fax: +1-951 781-5700

www.bourns.com