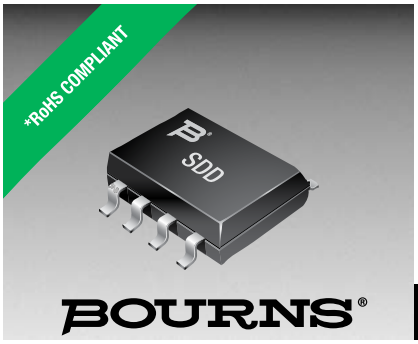


Features

- RoHS compliant*
- Protects four lines
- Unidirectional and bidirectional configurations
- ESD protection: 30 kV max.

Applications

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

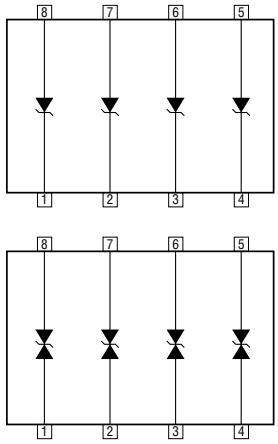
CDNBS08-T03~T36C - TVS Diode Array Series

General Information

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

Bourns offers Steering Diode/Transient Voltage Suppressor Array diodes for surge and ESD protection applications in an eight lead narrow body SOIC package size format. TheTransient 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.



Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

WARNING
Cancer and Reproductive Harm
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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Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Max.	Unit
Operating Temperature	T_J	-55 to +150	°C
Storage Temperature	T_{STG}	-55 to +150	°C

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

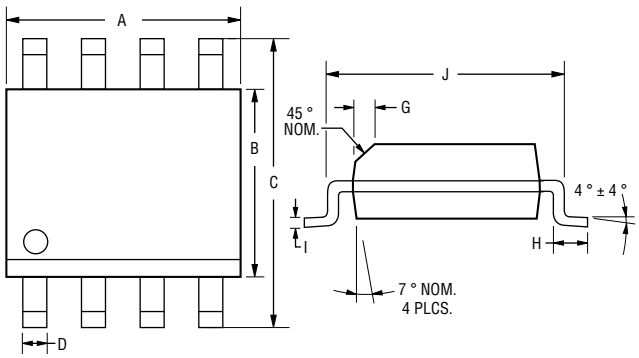
Parameter	Symbol	CDNBS08-														Unit
		Uni-T03	Bi-T03C	Uni-T05	Bi-T05C	Uni-T08	Bi-T08C	Uni-T12	Bi-T12C	Uni-T15	Bi-T15C	Uni-T24	Bi-T24C	Uni-T36	Bi-T36C	
Min. Breakdown Voltage @ 1 mA	V_{BR}	3.3		6.0		8.5		13.3		16.7		26.7		40.0		V
Working Peak Voltage	V_{WM}	3.0		5.0		8.0		12.0		15.0		24.0		36.0		V
Max. Clamping Voltage V_C @ I_P = 1 A [1]	V_C	8.0		9.8		13.4		19.0		24.0		43.0		51.0		V
Typ. Clamping Voltage @ 8/20 μs V_C @ I_{PP} [1]	V_C	10.9 V @ 43 A		13.5 V @ 42 A		16.9 V @ 34 A		25.9 V @ 21 A		30.0 V @ 17 A		49.0 V @ 12 A		76.8 V @ 9 A		V
Max. Leakage Current @ V_{WM}	I_D	125		20		10		1		1		1		1		μA
Max. Cap. Bidirectional @ 0 V, 1 MHz	$C_{J(SD)}$	450		308		300		105		80		50		45		pF
ESD Protection per IEC 61000-4-2 Contact - Min. Contact - Max. Air - Min. Air - Max.	ESD	±8 ±30 ±15 ±30														kV
Peak Pulse Power (t_p = 8/20 μs) [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.

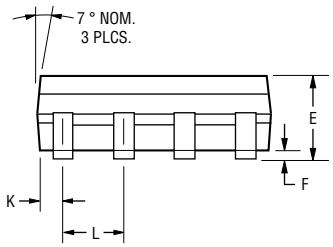
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Product Dimensions

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.

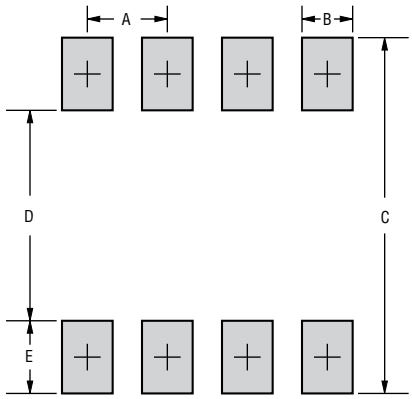


DIMENSIONS = MILLIMETERS / (INCHES)



Dimensions	
A	4.80 - 5.00 / (0.189 - 0.197)
B	3.81 - 4.00 / (0.150 - 0.157)
C	5.80 - 6.20 / (0.228 ± 0.244)
D	0.36 - 0.51 / (0.014 - 0.020)
E	1.35 - 1.75 / (0.053 - 0.069)
F	0.102 - 0.203 / (0.004 - 0.008)
G	0.25 - 0.50 / (0.010 - 0.020)
H	0.51 - 1.12 / (0.020 - 0.044)
I	0.190 - 0.229 / (0.0075 - 0.0090)
J	4.60 - 5.21 / (0.181 - 0.205)
K	0.28 - 0.79 / (0.011 - 0.031)
L	1.27 / (0.050)

Recommended Footprint



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

DIMENSIONS: MM / (INCHES)

Typical Part Marking

CDNBS08-T03	SDL
CDNBS08-T03C	SDM
CDNBS08-T05	SDA
CDNBS08-T05C	SDB
CDNBS08-T08	SDJ
CDNBS08-T08C	SDK
CDNBS08-T12	SDC
CDNBS08-T12C	SDD
CDNBS08-T15	SDE
CDNBS08-T15C	SDF
CDNBS08-T24	SDG
CDNBS08-T24C	SDH
CDNBS08-T36	SDN
CDNBS08-T36C	SDP

How to Order

CD NBS08 - T 03 C

Common Code
Chip Diode

Package
NBS08 = Narrow Body SOIC8 Package

Model
T = Transient Voltage Suppressor

Working Peak Voltage
03 = 3 V_{RWM} (Volts)

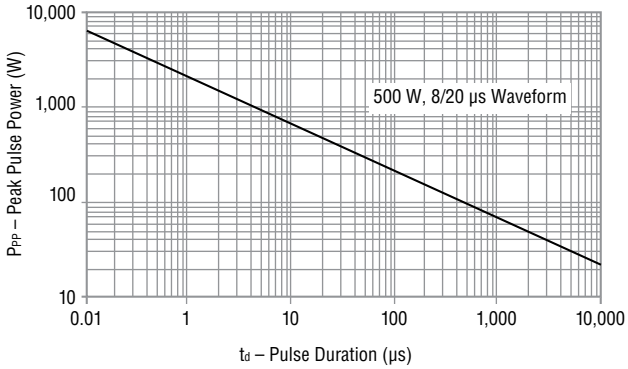
Suffix
C = Bidirectional Diode

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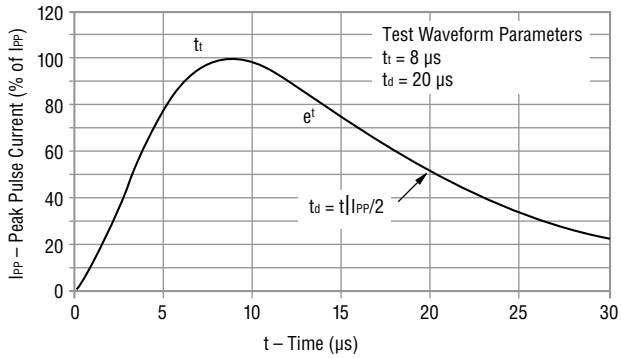
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Performance Graphs

Peak Pulse Power vs Pulse Time

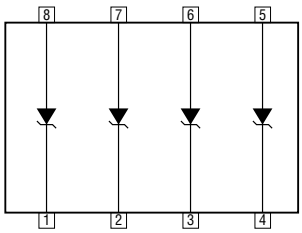


Pulse Waveform

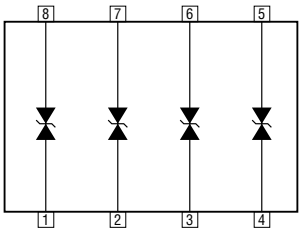


Block Diagram

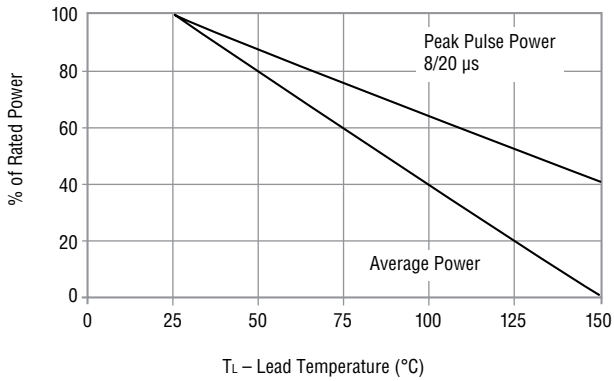
Unidirectional



Bidirectional



Power Derating Curve



Device Pinout

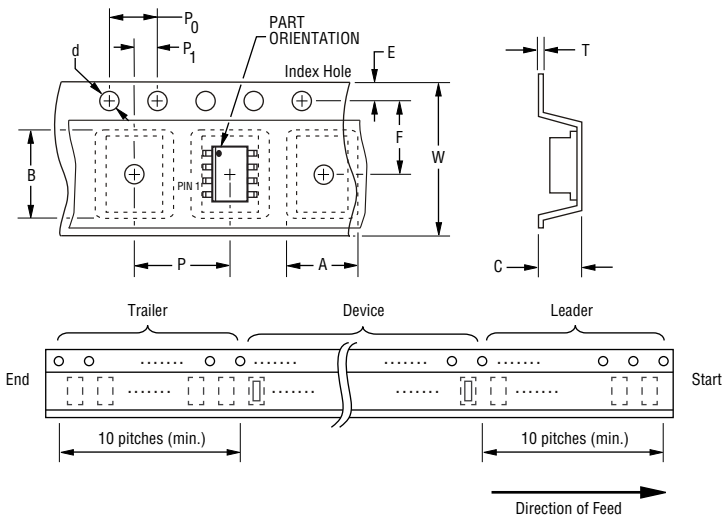
Pin	Function
1	I/O 1
2	I/O 2
3	I/O 3
4	I/O 4
5	GND
6	GND
7	GND
8	GND

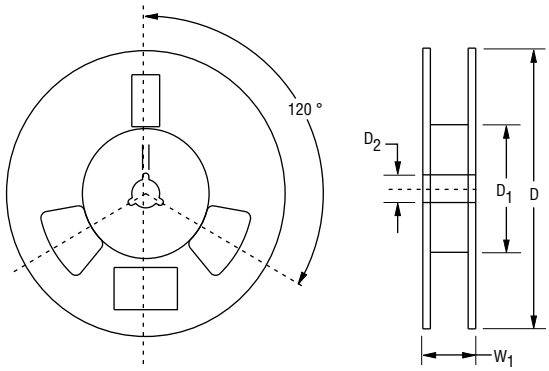
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Packaging Information

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





DIMENSIONS: MM / (INCHES)

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	D_1	80.0 (3.1500) MIN.
Feed Hole Diameter	D_2	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	P_0	4.00 ± 0.10 (0.157 ± 0.004)
Embossment Center	P_1	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	W_1	18.4 (0.724) MAX.
Quantity per Reel	--	2500

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REV. 08/19

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