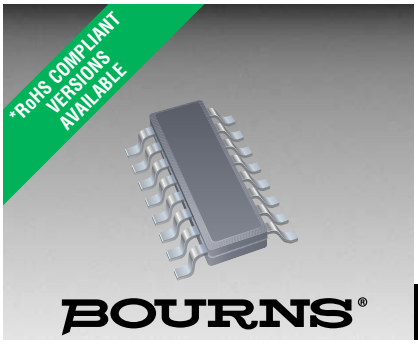


Features

- Lead free device (RoHS Compliant*)
- Protects 8 lines
- Unidirectional & bidirectional configurations
- ESD protection

Applications

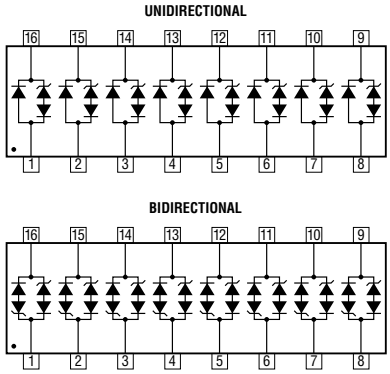
- Audio/video inputs
- RS-232, RS-422 & RS-423 data lines
- Portable electronics
- Medical sensors

CDNBS16-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 16 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.

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 °C to +150	°C
Storage Temperature	T_{STG}	-55 °C to +150	°C

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

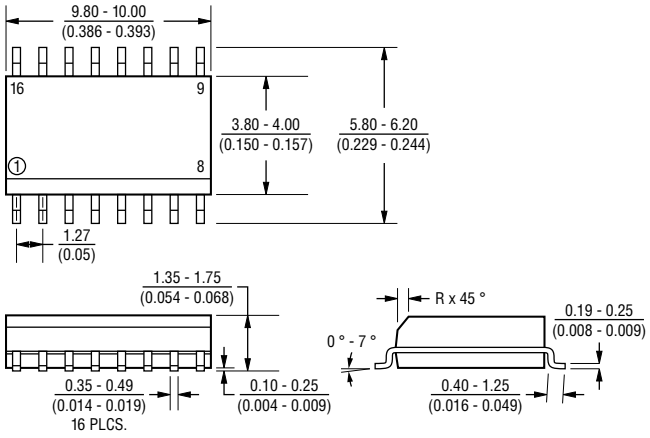
Parameter	Symbol	CDNBS16-														Unit
		Uni-T03	Bi-T03C	Uni-T05	Bi-T05C	Uni-T08	Bi-T08C	Uni-T12	Bi-T12C	Uni-T15	Bi-T15C	Uni-T24	Bi-T24C	Uni-T36	Bi-T36C	
Min. Breakdown Voltage @ 1 mA	V_{BR}	4.5		6.0		8.5		13.3		16.7		26.7		40.0		V
Working Peak Voltage	V_{WM}	3.0		5.0		8.0		12.0		15.0		24.0		36.0		V
Max. Clamping Voltage V_C @ I_P = 1 A [1]	V_C	8.0		9.8		13.4		19.0		25.5		40.0		53.0		V
Typ. Clamping Voltage @ 8/20 μs V_C @ I_{PP} [1]	V_C	23 V @ 43 A		24 V @ 42 A		26 V @ 30 A		33 V @ 21 A		39 V @ 15 A		57 V @ 10 A		72 V @ 7 A		V
Max. Leakage Current @ V_{WM}	I_D	125		20		10		2		2		2		2		μA
Maximum Capacitance @ 0 V, 1 MHz	$C_{j(SD)}$	15														pF
Temperature Coefficient of V_{BR}		-3		3		9		16		17		26		36		mv/°C
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. CDNBS16-T03C

Mechanical Characteristics

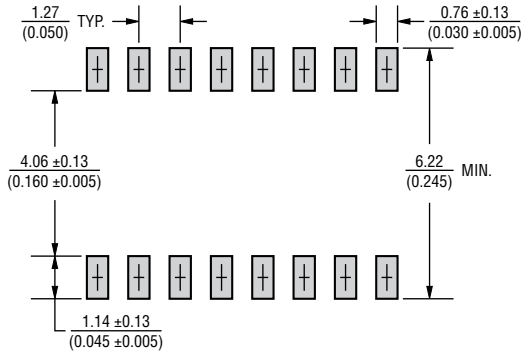
This is a molded JEDEC Narrow Body SO-16 package with lead free 100 % Sn plating on the lead frame. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.

Product Dimensions



DIMENSIONS = MILLIMETERS / (INCHES)

Recommended Footprint



DIMENSIONS = MILLIMETERS / (INCHES)

Typical Part Marking

CDNBS16-T03	**CDNBS16-T03**
CDNBS16-T05	**CDNBS16-T05**
CDNBS16-T08	**CDNBS16-T08**
CDNBS16-T12	**CDNBS16-T12**
CDNBS16-T15	**CDNBS16-T15**
CDNBS16-T24	**CDNBS16-T24**
CDNBS16-T36	**CDNBS16-T36**
CDNBS16-T03C	**CDNBS16-T03C**
CDNBS16-T05C	**CDNBS16-T05C**
CDNBS16-T08C	**CDNBS16-T08C**
CDNBS16-T12C	**CDNBS16-T12C**
CDNBS16-T15C	**CDNBS16-T15C**
CDNBS16-T24C	**CDNBS16-T24C**
CDNBS16-T36C	**CDNBS16-T36C**

How to Order

CD NBS16 - T 03 C

Common Code
CD = Chip Diode

Package
NBS16 = 16L NSOIC Package

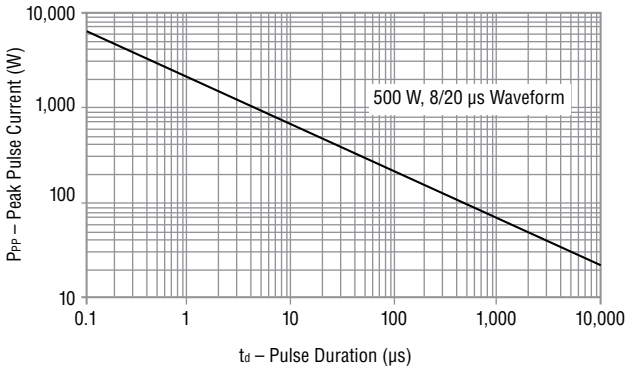
Model
T = Transient Voltage Suppressor

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

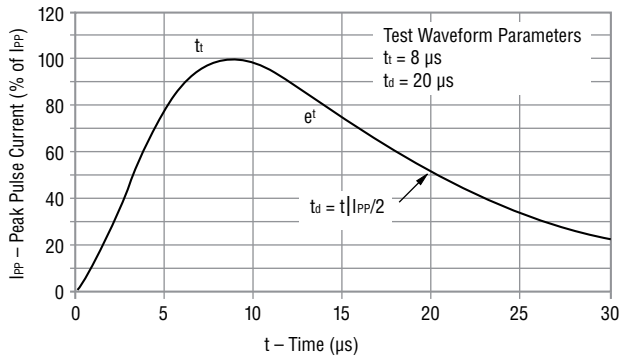
Suffix
C = Bidirectional Diode

Performance Graphs

Peak Pulse Power vs Pulse Time

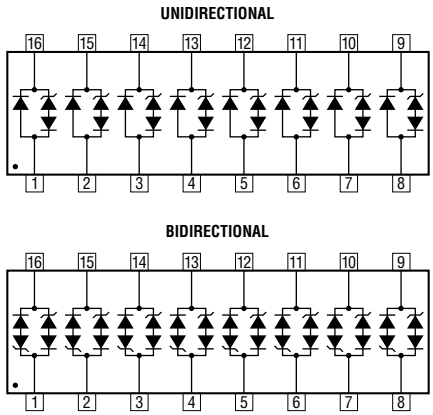


Pulse Wave Form

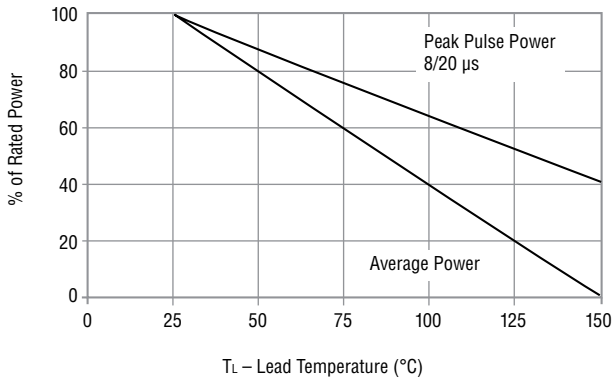


Block Diagram

The device block diagrams below include the pin names and basic electrical connections associated with each channel.



Power Derating Curve

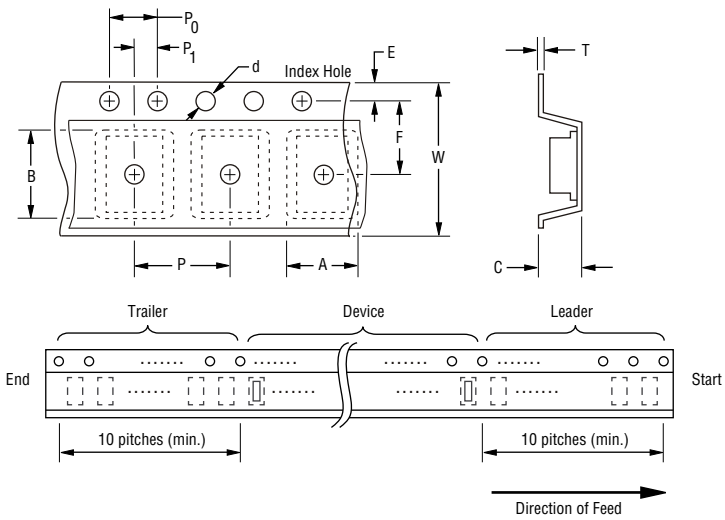


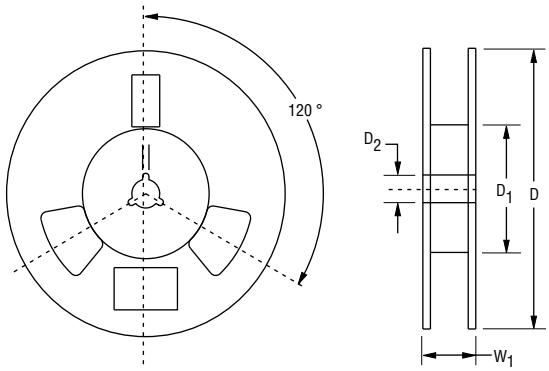
Device Pinout

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

Packaging Information

The product will be dispensed in Tape and Reel format (see diagram below).





DIMENSIONS: MM / (INCHES)

Devices are packed in accordance with EIA standard RS-481-A.

Item	Symbol	NSOIC 16L
Carrier Width	A	6.7 ± 0.10 (0.264 ± 0.004)
Carrier Length	B	10.5 ± 0.10 (0.413 ± 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 (3.150) 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 (0.314 ± 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	16.00 ± 0.20 (0.630 ± 0.008)
Reel Width	W_1	18.4 (0.724) Max.
Quantity per Reel	—	2,500

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