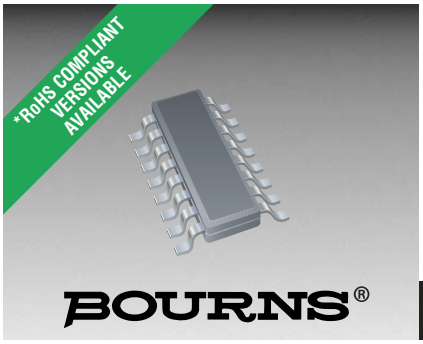


Features

- 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

BOURNS®

CDNBS16-T03~T36C – TVS Diode Array Series

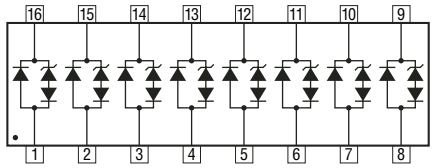
General Information

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

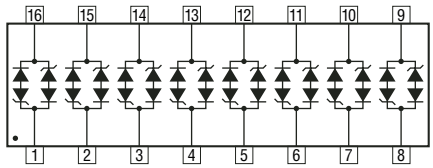
Bourns offers Transient Voltage Suppressor Array diodes for surge and ESD protection applications, in 16 Lead Narrow Body SOIC package size format. The Transient Voltage Suppressor Array series offer a choice of voltage types ranging from 3 V to 36 V in unidirectional and bidirectional configurations. 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.

UNIDIRECTIONAL



BIDIRECTIONAL



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	CDNBS16-														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	
Break Down 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
Maximum Clamping Voltage V_C @ I_P = 1 A[1]	V_F	7.0		9.8		13.4		19.0		25.5		40.0		53.0		V
Maximum Clamping Voltage @ 8/20 µs V_C @ I_{PP}[1]	V_F	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
Maximum 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 (tp = 8/20 µs)[2]	P_{PP}	500														W
Forward Voltage @ 100 mA, 300 µs – Square Wave[3]	V_F	1.5														V

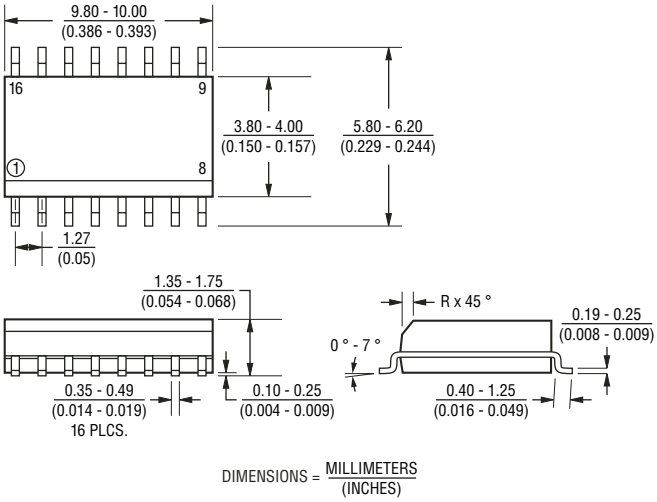
Notes:
1. See Pulse Wave Form.
2. See Peak Pulse Power vs. Pulse Time.
3. Only applies to unidirectional devices.
4. Part numbers with a “C” suffix are bidirectional devices, i.e., CDNBS16-T03C.

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

Mechanical Characteristics

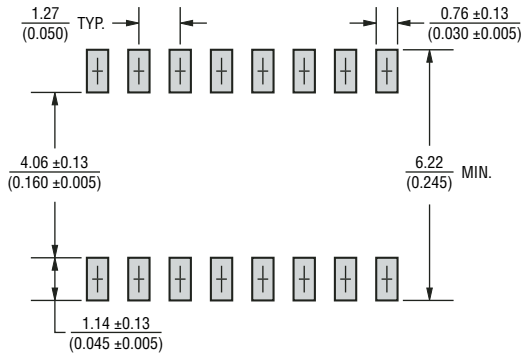
This is a molded JEDEC Narrow Body SO-16 package with lead free 100 % Sn plating on the lead frame. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.

Product Dimensions



DIMENSIONS = MILLIMETERS / (INCHES)

Recommended Footprint



Typical Part Marking

CDNBS16-T03	**SM16LC03**
CDNBS16-T05	**SM16LC05**
CDNBS16-T08	**SM16LC08**
CDNBS16-T12	**SM16LC12**
CDNBS16-T15	**SM16LC15**
CDNBS16-T24	**SM16LC24**
CDNBS16-T36	**SM16LC36**
CDNBS16-T03C	**SM16LC03C**
CDNBS16-T05C	**SM16LC05C**
CDNBS16-T08C	**SM16LC08C**
CDNBS16-T12C	**SM16LC12C**
CDNBS16-T15C	**SM16LC15C**
CDNBS16-T24C	**SM16LC24C**
CDNBS16-T36C	**SM16LC36C**

How To Order

CD NBS16 - T 03 C

Common Code
Chip Diode

Package
NBS16 = 16L NSOIC Package

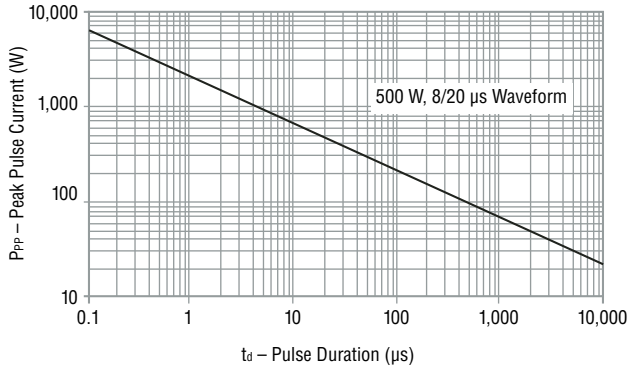
Model
T = Transient Voltage Supressor

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

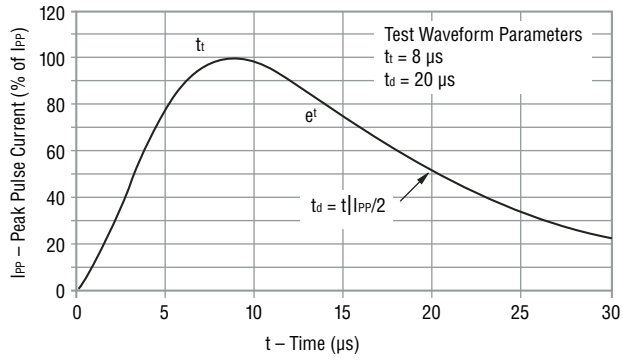
Suffix
C = Bidirectional Diode

Performance Graphs

Peak Pulse Power vs Pulse Time

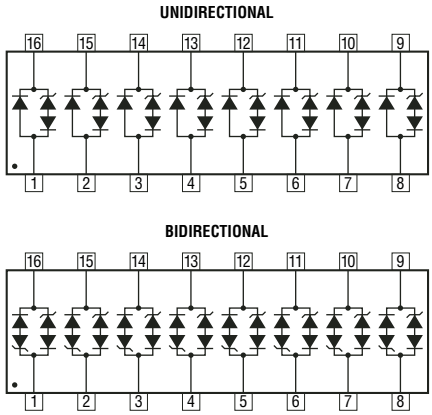


Pulse Wave Form

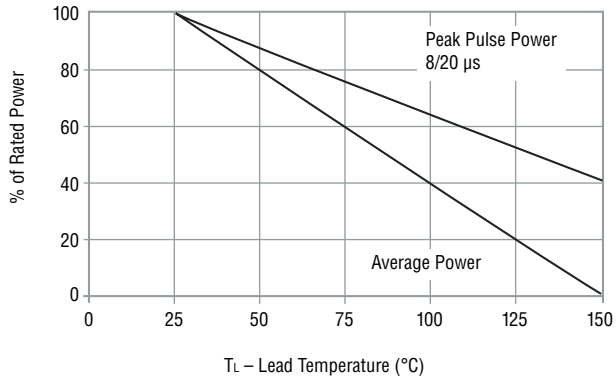


Block Diagram

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



Power Derating Curve

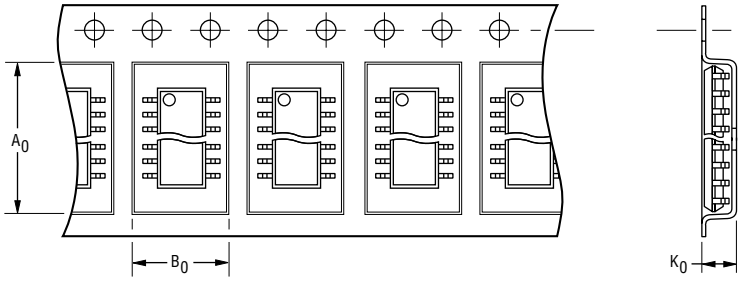


Device Pinout

Pin	Function	Pin	Function
1	GND	9	I/O 1
2	GND	10	I/O 2
3	GND	11	I/O 3
4	GND	12	I/O 4
5	GND	13	I/O 5
6	GND	14	I/O 6
7	GND	15	I/O 7
8	GND	16	I/O 8

Dispensing

For large quantities, the product will be dispensed in Tape and Reel (see diagram below).



DIMENSIONS = MM (INCHES)

Package	A_0	B_0	K_0	Width	Pitch	No. of Pieces per 13 ˝ reel	No. of Pieces per tube
NBSOIC 16 Pin	6.5 (0.256)	9.0 (0.354)	2.1 (0.083)	16 (0.630)	8 (0.315)	3,500	49

BOURNS®

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