Features

- Lead free as standard
- RoHS compliant*
- Protects 1 or 2 lines
- Unidirectional & bidirectional configurations
- ESD protection > 40 KV

Applications

- RS-232, RS-422 & RS-423 data lines
- Portable electronics
- Wireless bus protection
- Control & monitoring systems

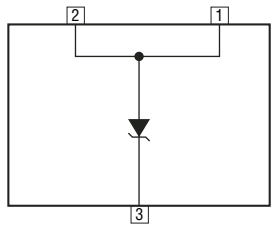
CDSOT23-T03~T36C – TVS Diode Array Series

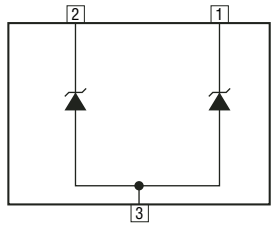
General Information

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 compact chip package SOT23 size format. The Transient Voltage Supressor Array series offers a choice of voltage types ranging from 3 V to 36 V. 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 °C Unless Otherwise Noted)

Parameter	Symbol	Value	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)

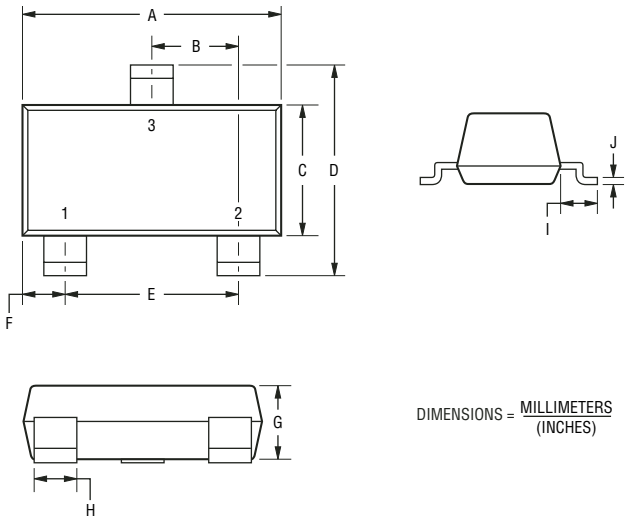
Parameter	Symbol	CDSOT23-														Unit
		Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	Uni-	Bi-	
		T03	T03C	T05	T05C	T08	T08C	T12	T12C	T15	T15C	T24	T24C	T36	T36C	
Breakdown Voltage @ 1 mA	V_{BR}	4.0		6.0		8.5		13.3		16.7		26.7		40.0		V
Working Peak Voltage	V_{WM}	3.3		5.0		8.0		12.0		15.0		24.0		36.0		V
Maximum Clamping Voltage V_C @ I_P[1]	V_F	7.0		9.8		13.4		19.0		24.0		43.0		51.0		V
Maximum Clamping Voltage @ 8/20 µs 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		2		1		1		1		µA
Maximum Cap Undirectional @ 0 V, 1 MHz	$C_{j(SD)}$	500		350		250		150		100		88		80		pF
Maximum Cap Bidirectional @ 0 V, 1 MHz	$C_{j(SD)}$	300		210		150		90		60		63		60		pF
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., CDSOT23-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.

Product Dimensions

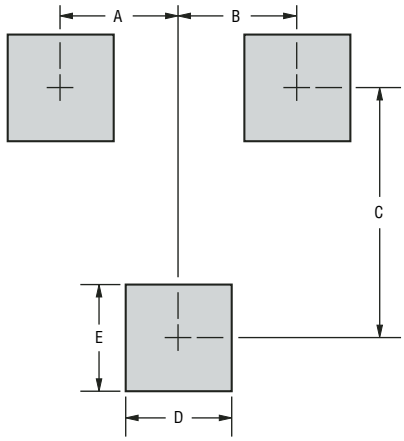
This is a molded JEDEC SOT-23 package with lead free 100 % Sn plating on the lead frame. It weighs approximately 0.6 g and has a flammability rating of UL 94V-0.



DIMENSIONS = MILLIMETERS / (INCHES)

Dimensions	
A	2.80 - 3.04 (0.1102 - 0.1197)
B	0.89 - 1.02 (0.0350 - 0.0401)
C	1.20 - 1.40 (0.0472 - 0.0551)
D	2.10 - 2.50 (0.0830 - 0.0984)
E	1.78 - 2.04 (0.0701 - 0.0807)
F	0.45 - 0.60 (0.0177 - 0.0236)
G	1.78 - 2.04 (0.0701 - 0.0807)
H	0.34 - 0.50 (0.0150 - 0.0200)
I	0.45 - 0.60 (0.0180 - 0.0236)
J	0.085 - 0.177 (0.0034 - 0.0070)

Recommended Footprint



DIMENSIONS = MILLIMETERS / (INCHES)

Dimensions	
A	0.95 (0.037)
B	0.95 (0.037)
C	2.00 (0.079)
D	0.85 (0.033)
E	0.85 (0.033)

How To Order

CD S0T23 - T 03 C

- Common Code: Chip Diode
- Package: • S0T23 = S0T23 Package
- Model: T = Transient Voltage Supressor
- Working Peak Voltage: 3 = 3 V_{RWM} (Volts)
- Suffix: C = Bidirectional Diode

*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
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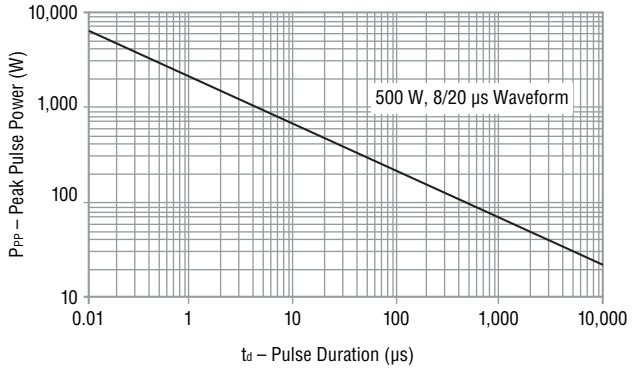
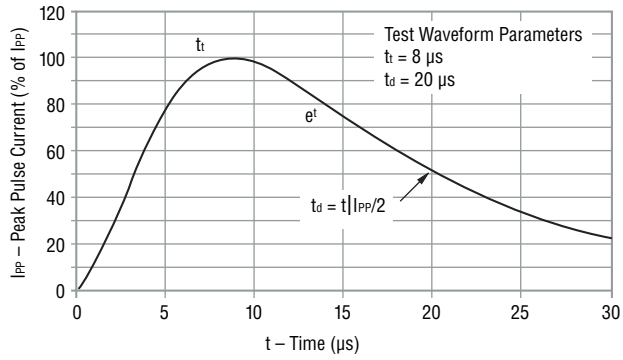
Performance Graphs

Peak Pulse Power vs Pulse Time



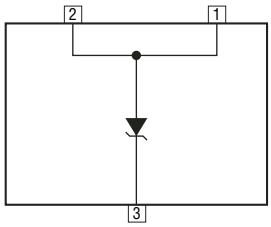
Pulse Wave Form



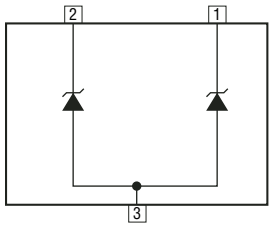
Block Diagram

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

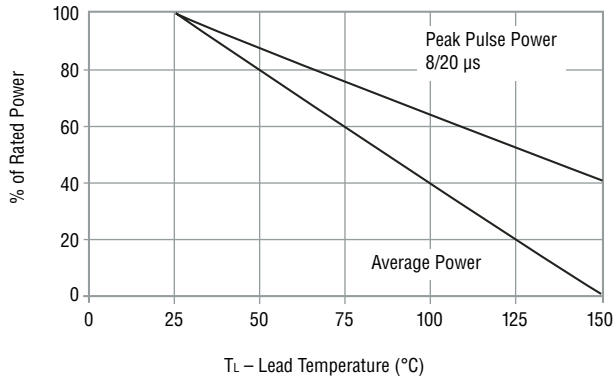
Unidirectional



Bidirectional



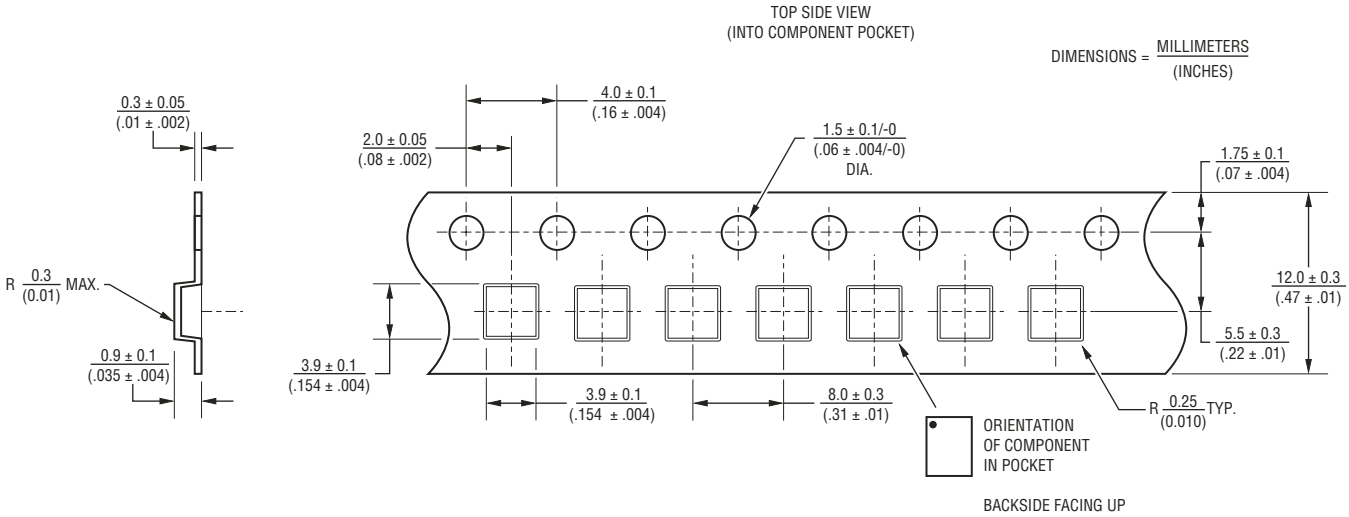
Power Derating Curve



*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.

Packaging

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



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