



Features

- Lead free as standard
- RoHS compliant*
- Protects 1 line
- ESD protection > 40 KV

Applications

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

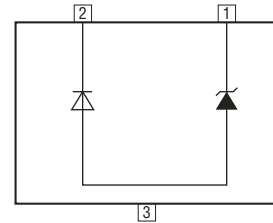
CDSOT23-T03LC~T36LC – Low Capacitance TVS Diode Array Series

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 Suppressor 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
		T03LC	T05LC	T08LC	T12LC	T15LC	T24LC	T36LC	
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 Bidirectional @ 0 V, 1 MHz	C _{ij(SD)}	5	5	5	5	5	5	5	pF
Peak Pulse Power (t _p = 8/20 μs) ²	P _{PP}	500							W

Notes:

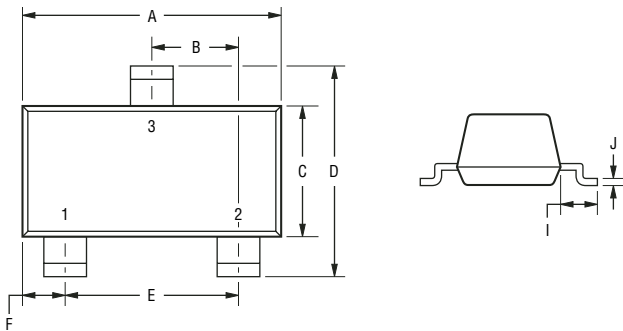
1. See Pulse Wave Form.
2. See Peak Pulse Power vs. Pulse Time.
3. Positive Potential is applied from Pin 1 to Pin 2 with Pin 2 as ground.
4. Do not test or surge from Pin 2 to Pin 1.

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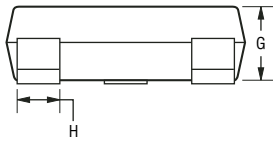


Product Dimensions

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.

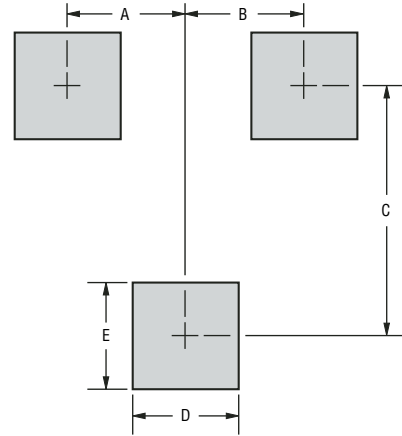


DIMENSIONS = $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$



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

Recommended Footprint



DIMENSIONS = $\frac{\text{MILLIMETERS}}{\text{(INCHES)}}$

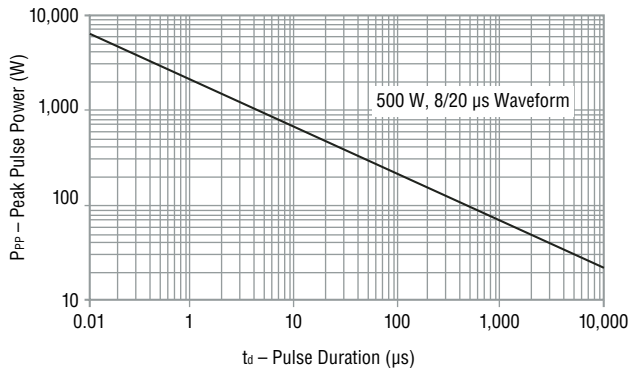
Dimensions	
A	$\frac{0.95}{(0.037)}$
B	$\frac{0.95}{(0.037)}$
C	$\frac{2.00}{(0.079)}$
D	$\frac{0.85}{(0.033)}$
E	$\frac{0.85}{(0.033)}$

How To Order

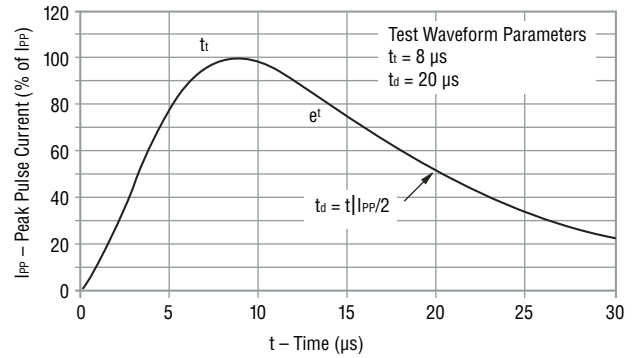
Common Code CD S0T23 - T 03 LC
 Chip Diode
 Package CD S0T23 - T 03 LC
 • S0T23 = S0T23 Package
 Model CD S0T23 - T 03 LC
 T = Transient Voltage Suppressor
 Working Peak Voltage CD S0T23 - T 03 LC
 3 = 3 V_{RWM} (Volts)
 Suffix CD S0T23 - T 03 LC
 LC = Low Capacitance Diode

Performance Graphs

Peak Pulse Power vs Pulse Time

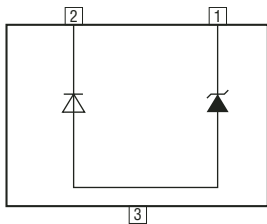


Pulse Wave Form

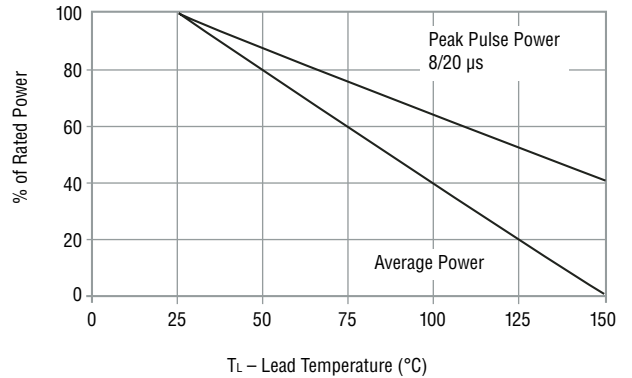


Block Diagram

The device block diagram below includes the pin names and basic electrical connections.



Power Derating Curve



Typical Part Marking

CDSOT23-T03LC03L
CDSOT23-T05LC05L
CDSOT23-T08LC08L
CDSOT23-T12LC12L
CDSOT23-T15LC15L
CDSOT23-T24LC24L
CDSOT23-T36LC36L

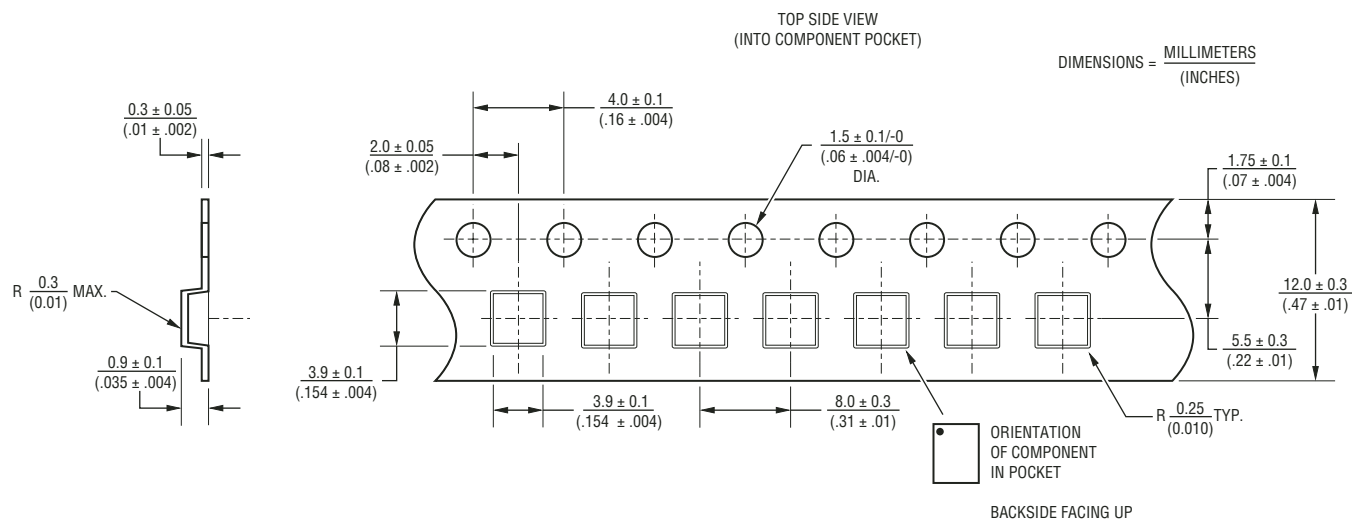
*RoHS Directive 2002/95/EC Jan 27 2003 including Annex
 Specifications are subject to change without notice.
 Customers should verify actual device performance in their specific applications.

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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.



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