



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

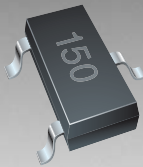
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



\*RoHS COMPLIANT



**BOURNS®**

## Features

- RoHS compliant\*
- Working peak voltage 7 V or 12 V
- ESD protection 30 kV max.
- Surge protection

## Applications

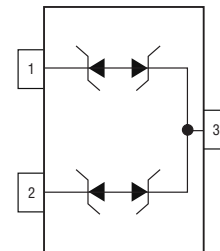
- Wireless systems
- Network protection
- Portable electronics
- RS485 port protection

# CDSOT23-SM712 — Surface Mount TVS Diode

### General Information

The CDSOT23-SM712 device provides ESD, EFT and Surge protection for data ports meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. The Transient Voltage Suppressor array offers 2 TVS diodes with Working Peak Reverse Voltage of 7 V or 12 V with Minimum Breakdown Voltage of 7.5 V or 13.3 V respectively.

The SOT23 packaged device will mount directly onto the industry standard SOT23 footprint. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.



### Absolute Maximum Ratings (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (t <sub>p</sub> = 8/20 μs) <sup>1</sup>	P <sub>PK</sub>	400	W
Peak Pulse Current (8/20 μs)	I <sub>PP</sub>	17	A
Storage Temperature	T <sub>STG</sub>	-55 to +150	°C
Operating Temperature	T <sub>OPR</sub>	-55 to +150	°C

### Electrical Characteristics (@ T<sub>A</sub> = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Minimum Breakdown Voltage @ 1 mA Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V <sub>BR</sub>	7.5 13.3	V
Maximum Working Peak Voltage Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V <sub>WM</sub>	7.0 12.0	V
Maximum Leakage Current @ V <sub>WM</sub> Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	I <sub>D</sub>	20.0 1.0	μA
Maximum Clamping Voltage @ I <sub>P</sub> = 1 A Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V <sub>C</sub>	11 19	V
Maximum Clamping Voltage @ I <sub>P</sub> = 5 A Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V <sub>C</sub>	12 20	V
Maximum Clamping Voltage @ I <sub>PP</sub> = 17 A Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V <sub>C</sub>	14 26	V
Typical Junction Capacitance @ 0 V, 1 MHz (Pin 3-1 and Pin 3-2) & (Pin 1 - 3 and Pin 2 - 3)	C <sub>D</sub>	75	pF
ESD Protection (per IEC 61000-4-2) Contact - Min. Contact - Max. Air - Min. Air - Max.	ESD	±8 ±30 ±15 ±30	kV

Note:

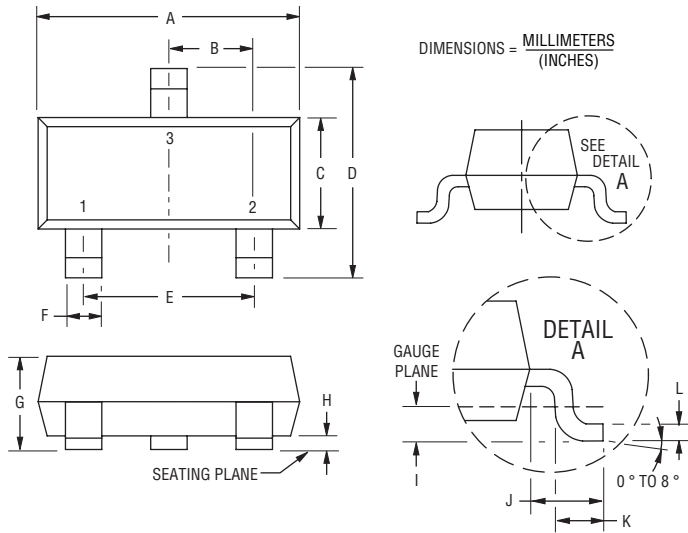
1. See Peak Pulse Power vs. Pulse Time.

# CDSOT23-SM712 — Surface Mount TVS Diode



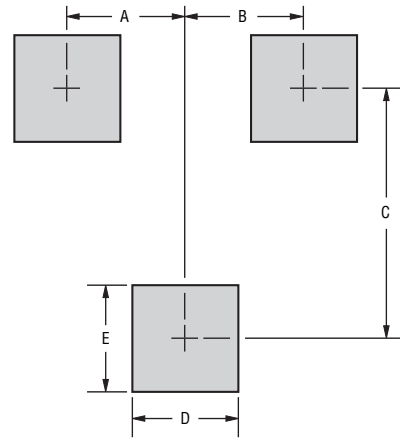
## Product Dimensions

This is a molded JEDEC SOT-23 package with 100 % Matte Sn plating on the lead frame. It weighs approximately 8 mg and has a flammability rating of UL 94V-0.



Dimensions	
A	$\frac{2.80 - 3.00}{(0.110 - 0.118)}$
B	$\frac{0.95}{(0.037)}$ BSC
C	$\frac{1.20 - 1.40}{(0.047 - 0.055)}$
D	$\frac{2.10 - 2.49}{(0.083 - 0.098)}$
E	$\frac{1.90}{(0.075)}$ BSC
F	$\frac{0.30 - 0.50}{(0.012 - 0.019)}$
G	$\frac{0.89 - 1.17}{(0.035 - 0.046)}$
H	$\frac{0.05 - 0.015}{(0.002 - 0.006)}$
I	$\frac{0.25}{(0.010)}$ BSC
J	$\frac{0.46 - 0.64}{(0.018 - 0.025)}$
K	$\frac{0.40 - 0.58}{(0.016 - 0.023)}$
L	$\frac{0.08 - 0.20}{(0.003 - 0.008)}$

## Recommended Footprint



DIMENSIONS = MILLIMETERS (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 SOT23 - SM 712**

Chip Diode

Package \_\_\_\_\_

- SOT23 = SOT23 Package

Model \_\_\_\_\_

SM = Special Model

Working Peak Reverse Voltage \_\_\_\_\_

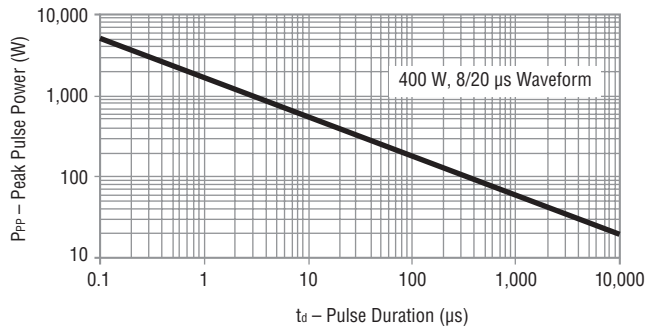
712 = 7 V<sub>RWM</sub> & 12 V<sub>RWM</sub> (Volts)

## Typical Part Marking

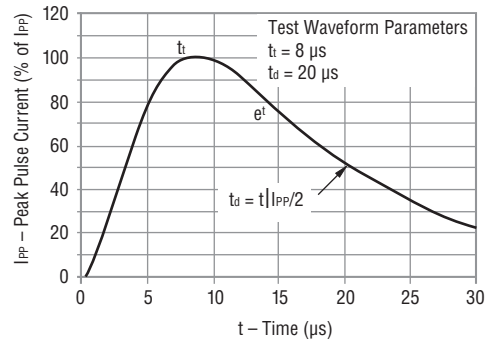
CDSOT23-SM712 ..... **712**

Performance Graphs

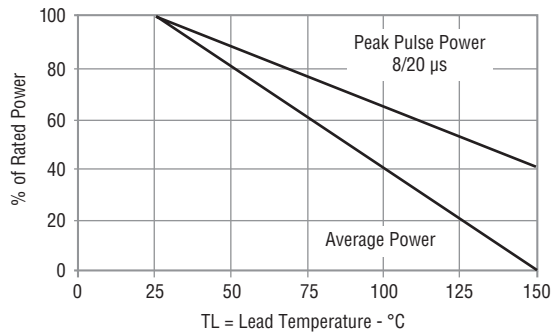
Peak Pulse Power vs Pulse Time



Pulse Waveform



Power Derating Curve



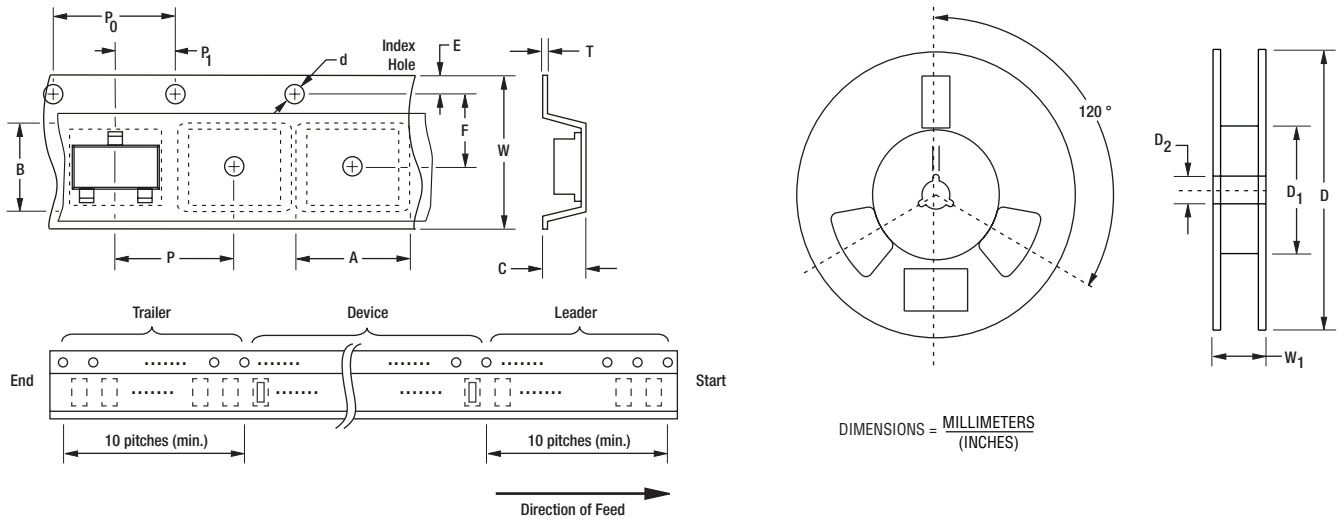


# CDSOT23-SM712 — Surface Mount TVS Diode

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## Packaging Information

The product is packaged in an 8 mm x 4 mm tape and reel format per EIA-481-A standard.



Item	Symbol	SOT23
Carrier Width	A	$\frac{2.25 \pm 0.10}{(0.088 \pm 0.004)}$
Carrier Length	B	$\frac{2.34 \pm 0.10}{(0.092 \pm 0.004)}$
Carrier Depth	C	$\frac{1.22 \pm 0.10}{(0.048 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{50.0}{(1.969)}$ Min.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 \pm 0.008)}$
Reel Width	W <sub>1</sub>	$\frac{14.4}{(0.567)}$ Max.
Quantity per Reel	—	3,000

**BOURNS®**

**Asia-Pacific:**  
Tel: +886-2 2562-4117 • Fax: +886-2 2562-4116

**Europe:**  
Tel: +41-41 768 5555 • Fax: +41-41 768 5510

**The Americas:**  
Tel: +1-951 781-5500 • Fax: +1-951 781-5700  
[www.bourns.com](http://www.bourns.com)

REV. 07/12

Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications.