Features

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

Applications

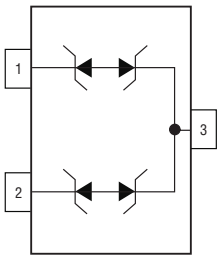
- Wireless systems
- Network protection
- Portable electronics
- RS-485 port protection

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 two TVS diodes with a Working Peak Reverse Voltage of 7 V or 12 V and 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.



Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power (t_p= 8/20 μs)[1]	P_{PK}	400	W
Peak Pulse Current (8/20 μs)	I_{PP}	17	A
Storage Temperature	T_{STG}	-55 to +150	°C
Operating Temperature	T_{OPR}	-55 to +150	°C

Electrical Characteristics (@ T_A = 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_{BR}	 7.5 13.3	V
Maximum Working Peak Voltage Pin 3-1 and Pin 3-2 Pin 1-3 and Pin 2-3	V_{WM}	 7.0 12.0	V
Maximum Leakage Current @ V_{WM} Pin 3-1 and Pin 3-2 Pin 1-3 and Pin 2-3	I_D	 20.0 1.0	μA
Maximum Clamping Voltage @ I_P = 1 A Pin 3-1 and Pin 3-2 Pin 1-3 and Pin 2-3	V_C	 11 19	V
Maximum Clamping Voltage @ I_P = 5 A Pin 3-1 and Pin 3-2 Pin 1-3 and Pin 2-3	V_C	 12 20	V
Maximum Clamping Voltage @ I_{PP} = 17 A Pin 3-1 and Pin 3-2 Pin 1-3 and Pin 2-3	V_C	 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_D	75	pF
ESD Protection (per IEC 61000-4-2) Contact - Min. Contact - Max. Air - Min. Air - Max.	ESD	 ±8 ±30 ±15 ±30	kV

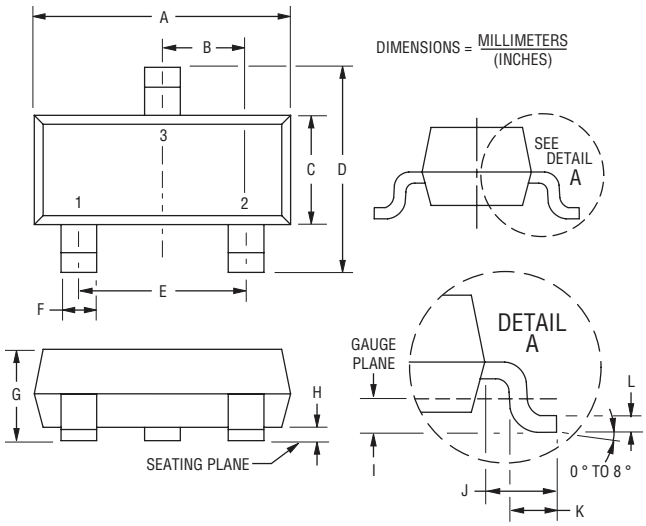
Note: 1. See Peak Pulse Power vs. Pulse Time.

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.
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

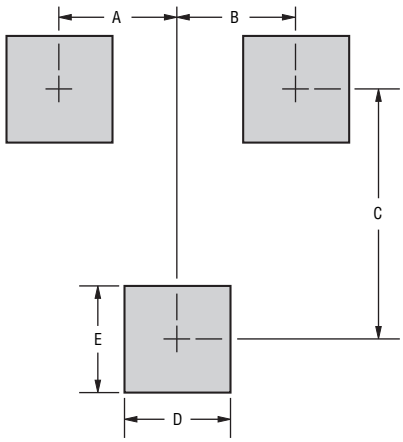
Product Dimensions

This is a molded JEDEC SOT23 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	2.80 - 3.00 (0.110 - 0.118)
B	0.95 (0.037) BSC
C	1.20 - 1.40 (0.047 - 0.055)
D	2.10 - 2.49 (0.083 - 0.098)
E	1.90 (0.075) BSC
F	0.30 - 0.50 (0.012 - 0.019)
G	0.89 - 1.17 (0.035 - 0.046)
H	0.05 - 0.015 (0.002 - 0.006)
I	0.25 (0.010) BSC
J	0.46 - 0.64 (0.018 - 0.025)
K	0.40 - 0.58 (0.016 - 0.023)
L	0.08 - 0.20 (0.003 - 0.008)

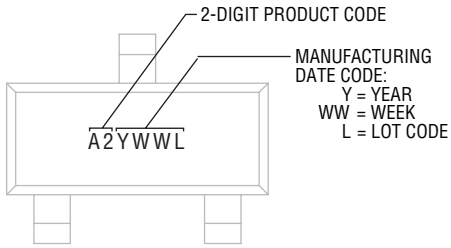
Recommended Footprint



DIMENSIONS = MILLIMETERS (INCHES)

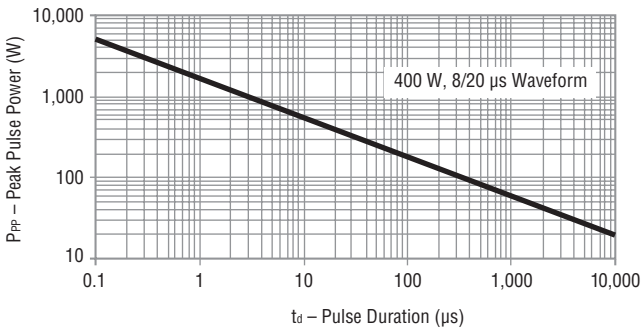
Dimensions	
A	0.95 (0.037)
B	0.95 (0.037)
C	2.00 (0.079)
D	0.85 (0.033)
E	0.85 (0.033)

Typical Part Marking

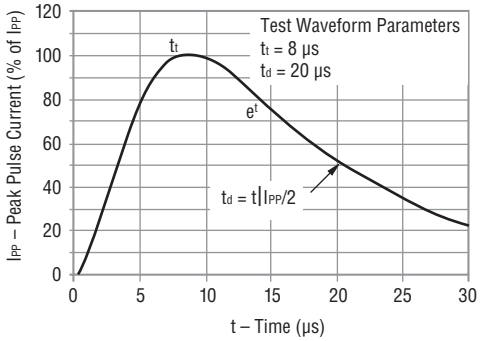


Performance Graphs

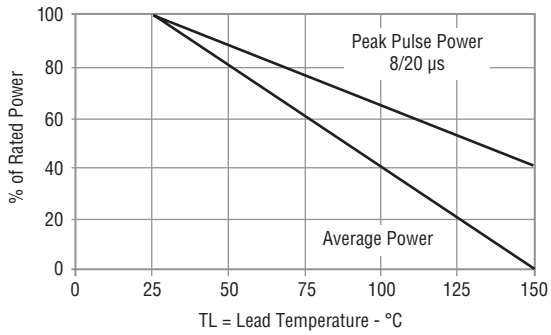
Peak Pulse Power vs. Pulse Time



Pulse Waveform



Power Derating Curve



How to Order

CD SOT23 - SM 712

Common Code
Chip Diode

Package
• SOT23 = SOT23 Package

Model
SM = Special Model

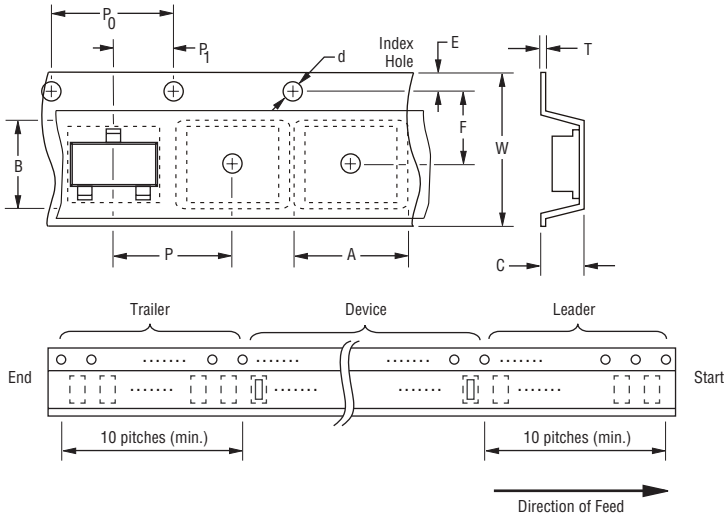
Working Peak Reverse Voltage
712 = 7 V_{RWM} & 12 V_{RWM} (Volts)

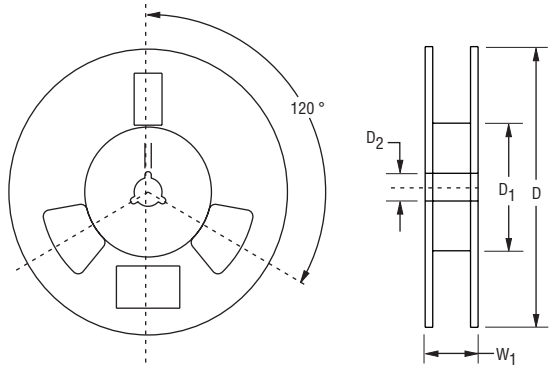
Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 3B

Packaging Information

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





DIMENSIONS: MM / (INCHES)

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

Item	Symbol	SOT23
Carrier Width	A	2.25 ± 0.10 (0.088 ± 0.004)
Carrier Length	B	2.34 ± 0.10 (0.092 ± 0.004)
Carrier Depth	C	1.22 ± 0.10 (0.048 ± 0.004)
Sprocket Hole	d	1.55 ± 0.05 (0.061 ± 0.002)
Reel Outside Diameter	D	178 (7.008)
Reel Inner Diameter	D_1	50.0 (1.969) 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	4.00 ± 0.10 (0.157 ± 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	8.00 ± 0.20 (0.315 ± 0.008)
Reel Width	W_1	14.4 (0.567) MAX.
Quantity per Reel	--	3,000

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