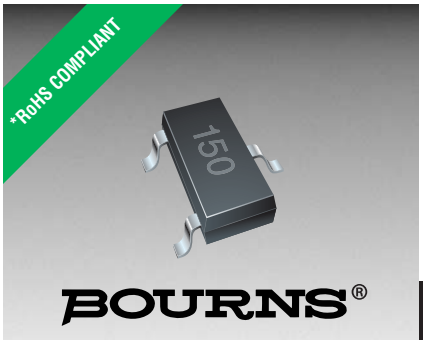


Features

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

Applications

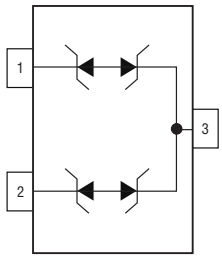
- Wireless systems
- Network protection
- Portable electronics
- RS485 port protection

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_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)

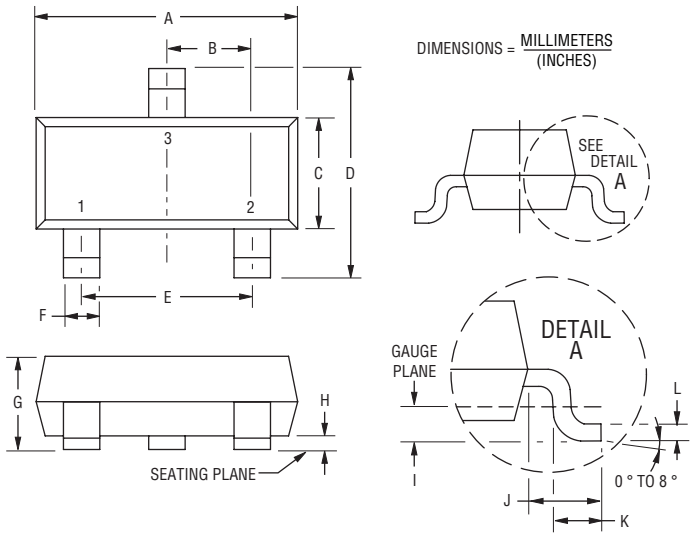
Parameter	Symbol	Value	Unit
Minimum Breakdown Voltage @ 1 mA Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V_{BR}	 7.5 13.3	V
Maximum Working Peak Voltage Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 3	V_{WM}	 7.0 12.0	V
Maximum Leakage Current @ V_{WM} Pin 3 - 1 and Pin 3 - 2 Pin 1 - 3 and Pin 2 - 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.

*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
Specifications are subject to change without notice.
Customers should verify actual device performance in their specific applications.

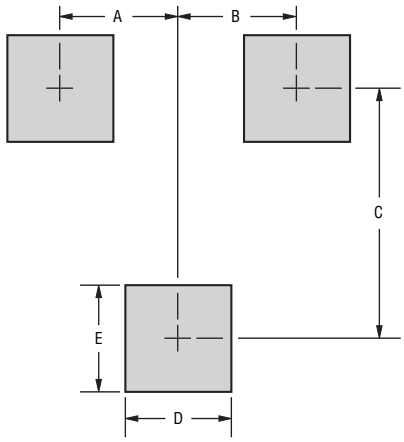
Product Dimensions

This is a molded JEDEC SOT-23 package with 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	
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 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)

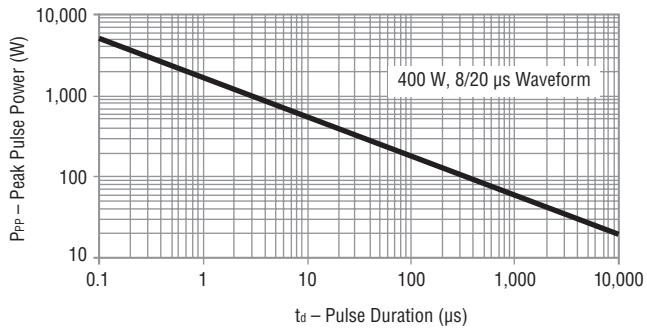
Typical Part Marking

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

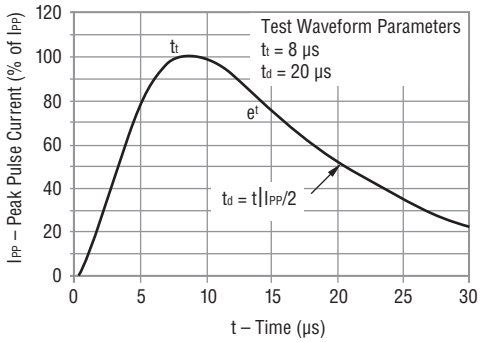
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Customers should verify actual device performance in their specific applications.

Performance Graphs

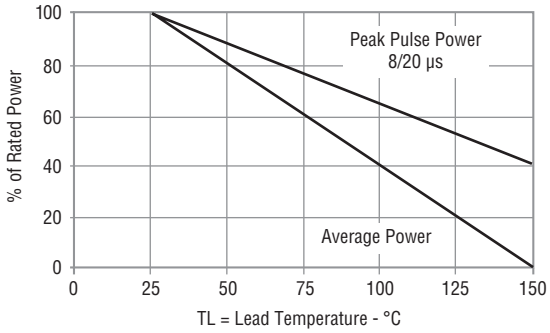
Peak Pulse Power vs Pulse Time



Pulse Waveform



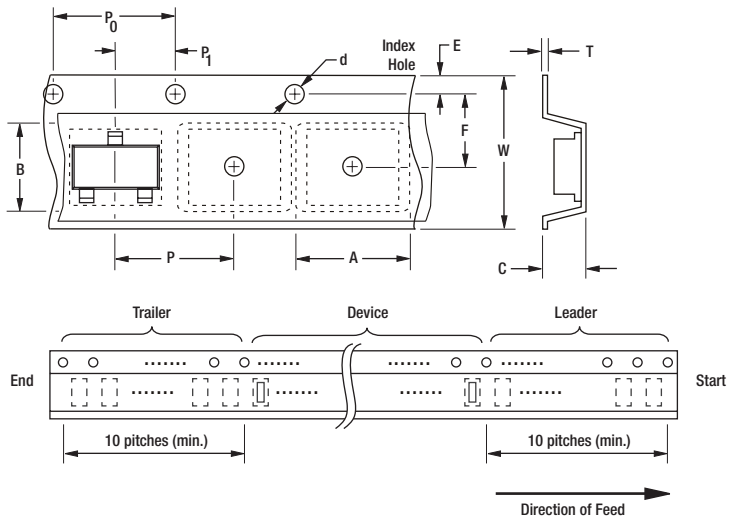
Power Derating Curve

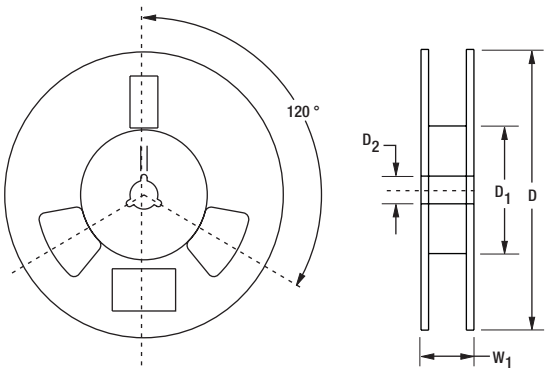


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Customers should verify actual device performance in their specific applications.

Packaging Information

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





DIMENSIONS = MILLIMETERS / (INCHES)

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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