

Features

- Protects one line or one I/O port
- Bidirectional configuration
- ESD protection 30 kV max.
- Low capacitance ~ 3 pF typ.
- Replaces 0805 MLV devices
- RoHS compliant*
- Halogen free**

Applications

- VDSL lines
- Modems
- Routers

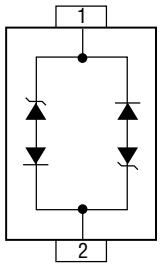
CDSOD323-TxxC-DSL - TVS Diode Series

General Information

Portable communications and telecom equipment manufacturers are challenging the semiconductor industry to develop increasingly smaller electronic components for high-speed communication rates.

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications in SOD323 package size format. The Transient Voltage Suppressor Diode series offers a choice of voltage types ranging from 12 V to 24 V in a bidirectional configuration. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.

BIDIRECTIONAL



The Bourns® device will assist compliance with IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and will assist in meeting IEC 61000-4-5 (Surge) requirements.

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	CDSOD323-		Unit
		T12C-DSL	T24C-DSL	
Peak Pulse Current (t_p = 8/20 μs)	I_{PPM}	11	6	A
Peak Pulse Power (t_p = 8/20 μs)	P_{PP}	350		W
Operating Temperature	T_J	-55 to +150		°C
Storage Temperature	T_{STG}	-55 to +150		°C
ESD Protection (per IEC 61000-4-2)				
Contact Discharge				
Minimum	ESD	±8		kV
Maximum	ESD	±30		kV
Air Discharge				
Minimum	ESD	±15		kV
Maximum	ESD	±30		kV

Electrical & Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDSOD323-		Unit
		T12C-DSL	T24C-DSL	
Min. Breakdown Voltage @ 1 mA	V_{BR}	13.3	26.7	V
Working Peak Voltage	V_{wm}	12.0	24.0	V
Maximum Clamping Voltage @ I_P = 1 A	V_C	19.0	43.0	V
Typical Clamping Voltage @ 8/20 μs @ I_{PP}	V_C	28.3 V @ 11 A	56.0 V @ 6 A	V
Maximum Leakage Current @ V_{WM}	I_D	1		nA
Typical Capacitance @ 0 V, 1 MHz	C_J	3		pF

Note: The electrical specifications apply in both polarities.

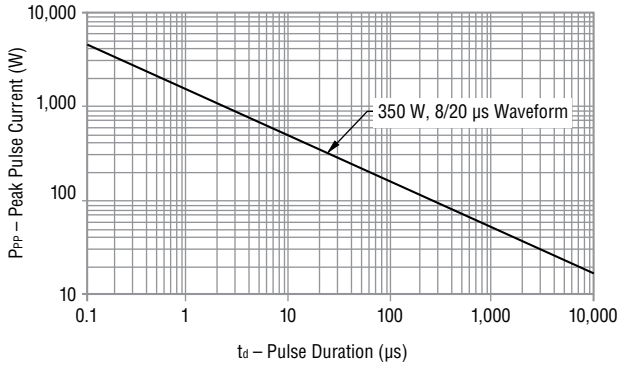
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
** Bourns considers a product to be "halogen free" if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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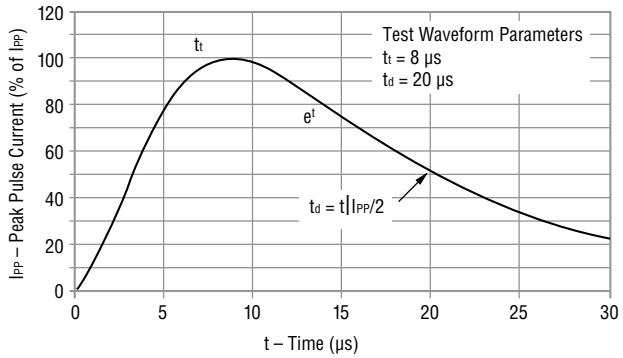
WARNING
Cancer and Reproductive Harm
www.P65Warnings.ca.gov

Performance Graphs

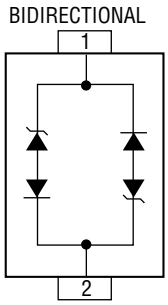
Peak Pulse Power vs. Pulse Time



Pulse Waveform



Block Diagram



How to Order

CD SOD323 - T 12 C - DSL

Common Code
Chip Diode

Package
- SOD323 = SOD-323 Package

Model
T = Transient Voltage Suppressor

Working Peak Reverse Voltage
12 = 12 V_{RWM} (Volts)
24 = 24 V_{RWM} (Volts)

Suffix
C = Bidirectional Diode
-DSL = For use in VDSL applications

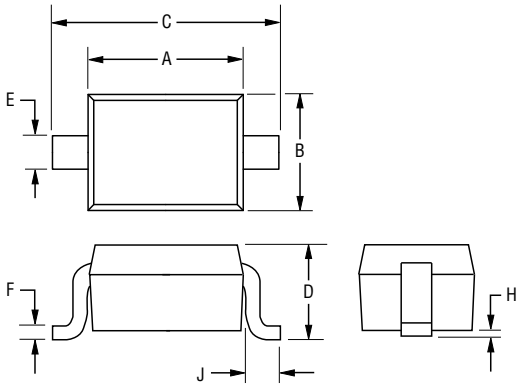
Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 3B

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Product Dimensions

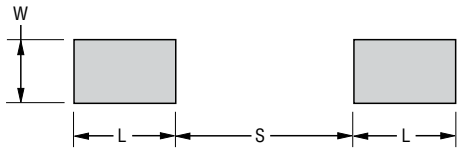
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



Dimensions	
A	1.60 - 1.90 (0.063 - 0.075)
B	1.15 - 1.45 (0.045 - 0.057)
C	2.39 - 2.70 (0.094 - 0.106)
D	0.92 - 1.14 (0.036 - 0.045)
E	0.25 - 0.40 (0.010 - 0.016)
F	0.08 - 0.20 (0.003 - 0.008)
H	0.13 (0.005) MAX.
J	0.30 - 0.45 (0.012 - 0.018)

DIMENSIONS: MM (INCHES)

Recommended Footprint



Dimensions (Nominal)	
L	0.80 (0.031)
S	1.40 (0.055)
W	0.50 (0.020)

DIMENSIONS: MM (INCHES)

Typical Part Marking

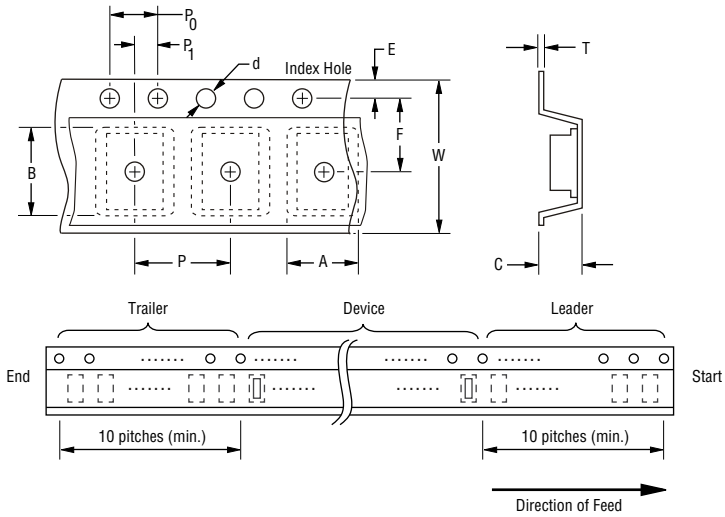
Each device has device marking outlined below.

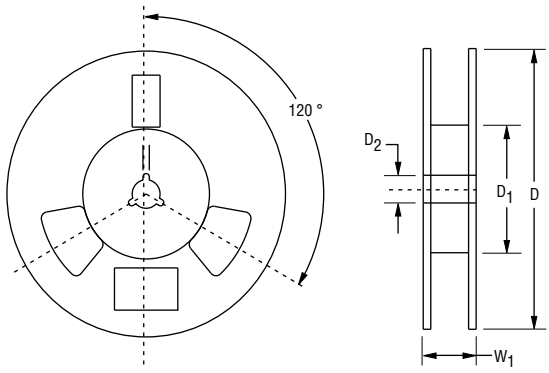
CDSOD323-T12C-DSL 2D
CDSOD323-T24C-DSL 4D

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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)

Item	Symbol	SOD-323
Carrier Width	A	1.55 ± 0.10 (0.061 ± 0.004)
Carrier Length	B	2.90 ± 0.10 (0.114 ± 0.004)
Carrier Depth	C	1.35 ± 0.10 (0.053 ± 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	80.0 (3.150) 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	13.5 (0.531) Max.
Quantity per Reel	--	3,000

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