

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

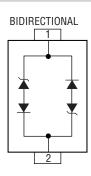
CDSOD323-TxxC-DSL - TVS Diode Series

General Information

The markets of portable communications and telecom equipment 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.

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



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

		CDSOD323-		
Parameter	Symbol	T12C-DSL	T24C-DSL	Unit
Peak Pulse Current ($t_p = 8/20 \mu s$)	I _{PPM}	11	6	Α
Peak Pulse Power ($t_p = 8/20 \mu s$)	P _{PP}	350		W
Operating Temperature	TJ	-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)

	CDSOD323-		D323-	
Parameter	Symbol	T12C-DSL	T24C-DSL	Unit
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	CJ	3		pF

Note: The electrical specifications apply in both polarities.

^{*} RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.

^{**} Bourns follows the prevailing definition of "halogen free" in the industry. 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.

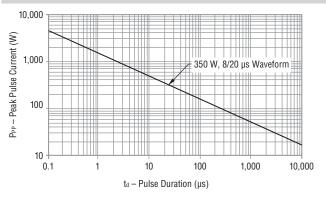
Specifications are subject to change without notice.

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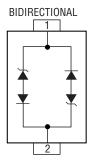
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Performance Graphs

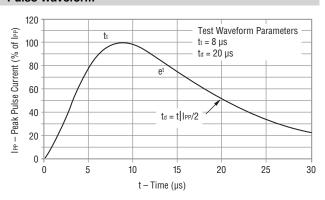
Peak Pulse Power vs. Pulse Time



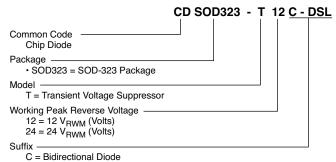
Block Diagram



Pulse Waveform



How to Order

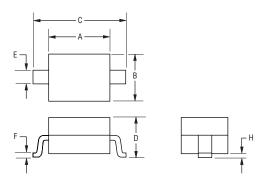


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Product Dimensions

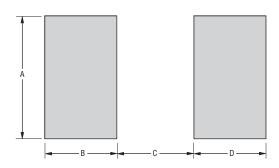
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



Dimensions		
А	1.60 - 1.90 (0.063 - 0.075)	
В	1.15 - 1.45 (0.045 - 0.057)	
С	2.39 - 2.70 (0.094 - 0.106)	
D	0.92 - 1.10 (0.036 - 0.043)	
E	<u>0.25 - 0.40</u> (0.010 - 0.016)	
F	<u>0.10 - 0.20</u> (0.004 - 0.008)	
Н	$\frac{0.10}{(0.004)}$ MAX.	

DIMENSIONS: $\frac{MM}{(INCHES)}$

Recommended Footprint



Dimensions (Nominal)		
Α	0.80 (0.031)	
В	0.80 (0.031)	
С	1.40 (0.055)	
D	<u>0.80</u> (0.031)	

DIMENSIONS: $\frac{MM}{(INCHES)}$

Typical Part Marking

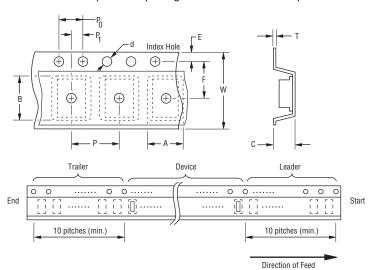
Each device has device marking outlined below.

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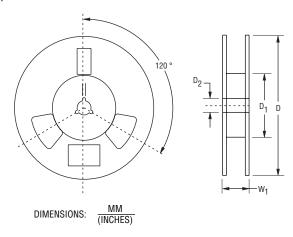
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Packaging Information

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



Item	Symbol	SOD-323
Carrier Width	A	$\frac{1.55 \pm 0.10}{(0.061 \pm 0.004)}$
Carrier Length	В	$\frac{2.90 \pm 0.10}{(0.114 \pm 0.004)}$
Carrier Depth	С	$\frac{1.35 \pm 0.10}{(0.053 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	<u>178</u> (7.008)
Reel Inner Diameter	D ₁	80.0 (3.150) Min.
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
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	Р	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	Т	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 \pm 0.008)}$
Reel Width	W ₁	13.5 (0.531) Max.
Quantity per Reel		3,000



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