

Features

- Lead free as standard*
- ESD protection 30 kV max.
- Ultra-low capacitance - 1.0 pF
- Protects 1 line
- Bidirectional configuration
- RoHS compliant**
- AEC-Q101 compliant***

Applications

- HDMI 1.4
- Digital Visual Interface (DVI)
- USB 3.0 / USB OTG
- Memory protection
- SIM card ports

Sustainability

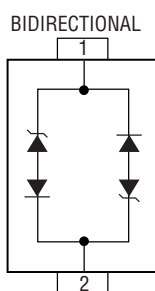
- Small size reduces material use
- Recyclable ESD-safe packaging
- ISO 14001, low-impact energy

Product Overview

Portable communications, computing and video equipment manufacturers are challenging the semiconductor industry to develop increasingly smaller electronic components.

Bourns offers AEC-Q101 compliant Transient Voltage Suppressor Diodes for surge and ESD protection applications, in SOD323 package size format. This Transient Voltage Suppressor Diode offers voltage protection of 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 meets IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.



Note: For 24 V VDSL applications, the CDSOD323-T24C-DSLQ is recommended.

Contact Information

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (t _p = 8/20 μs)	P _{PP}	350	W
Operating Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C
ESD Protection per IEC 61000-4-2 Contact Discharge	ESD	±30	kV

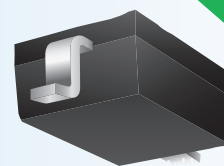
Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Minimum Breakdown Voltage @ 1 mA	V _{BR}	26.7	V
Working Peak Voltage	V _{WM}	24.0	V
Maximum Clamping Voltage @ I _p = 1 A	V _C	43.0	V
Maximum Clamping Voltage @ 8/20 μs @ I _{pp}	V _C	56.0 V @ 6 A	V
Maximum Leakage Current @ V _{WM}	I _D	1	μA
Typical Capacitance @ 0 V, 1 MHz	C _p	1.0	pF

Note: The electrical specifications apply in both polarities.

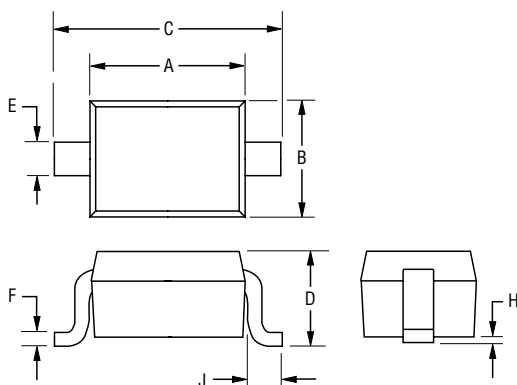
* No lead detected in standard tests of homogeneous materials.
 ** RoHS Directive 2015/863, Mar 31, 2015 and Annex.
 *** "Q" part number suffix indicates AEC-Q101 compliance.
 Specifications are subject to change without notice.

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

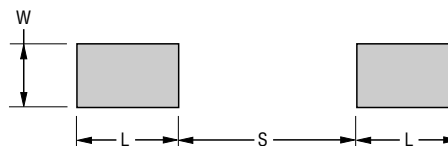
This is an RoHS compliant molded JEDEC SOD-323 package with 100 % Sn plating on the terminations. It weighs approximately 6 mg and has a flammability rating of UL 94V-0.



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

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

Recommended Footprint



Dimensions (Nominal)	
L	$\frac{0.80}{(0.031)}$
S	$\frac{1.40}{(0.055)}$
W	$\frac{0.50}{(0.020)}$

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

Environmental Specifications

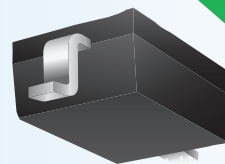
Moisture Sensitivity Level..... 1
ESD Classification (HBM)3B

How to Order

Common Code CD SOD323-T 24 LC - Q
 CD = Chip Diode
 Package SOD323 = SOD-323 Package
 Model T = Transient Voltage Suppressor
 Working Peak Reverse Voltage (Volts) 24 = 24 V_{RWM}
 Suffix LC = Ultra-low Capacitance Bidirectional Diode
 AEC-Q101 Suffix Q = AEC-Q101 Compliant

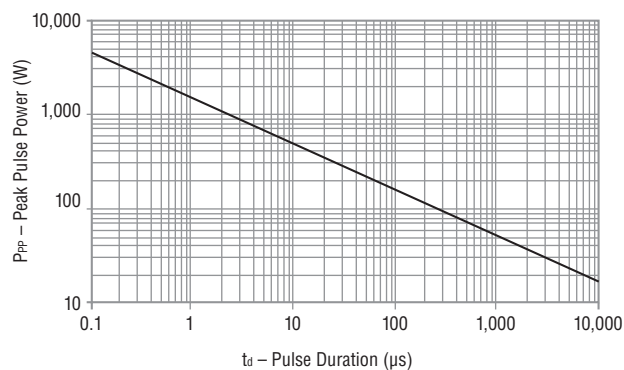
Typical Part Marking

CDSOD323-T24LC-Q.....S24
 (Underline denotes AEC-Q101 compliancy)

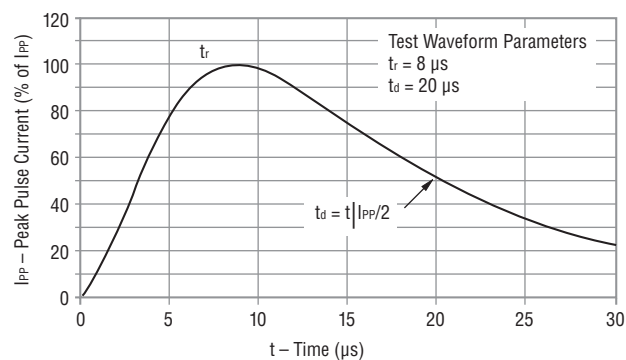


Performance Graphs

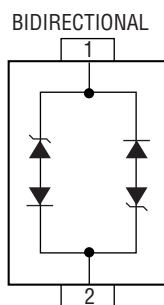
Typical Peak Pulse Power vs Pulse Time



Pulse Waveform

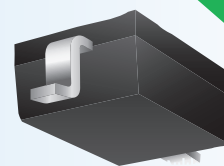


Block Diagram



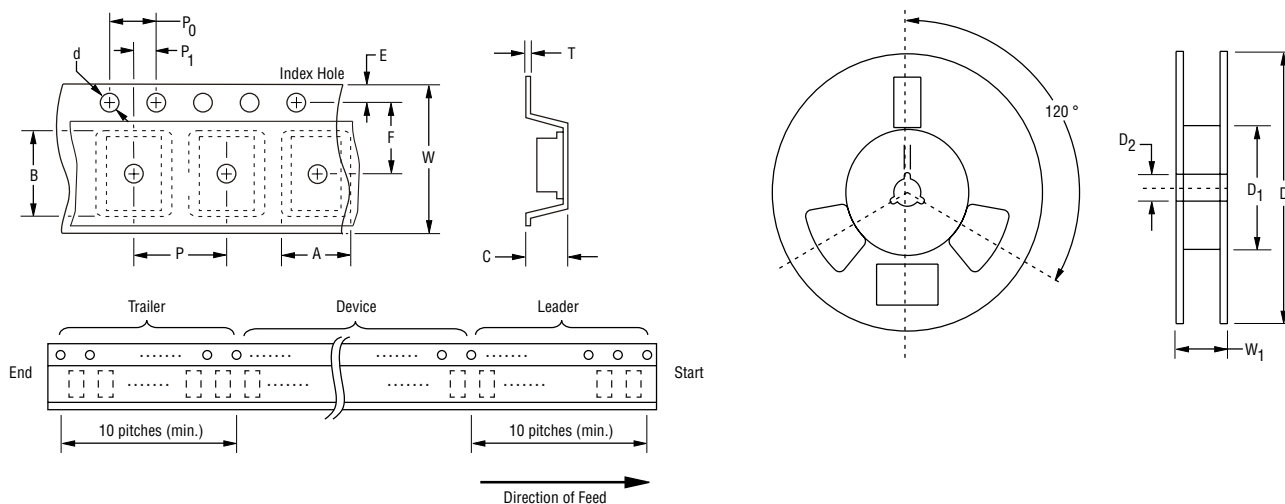
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Packaging Specifications

The product is packaged in 8 mm tape width 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	B	$\frac{2.90 \pm 0.10}{(0.114 \pm 0.004)}$
Carrier Depth	C	$\frac{1.35 \pm 0.10}{(0.053 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{80.0}{(3.150)} \text{ MIN.}$
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	P	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$

Item	Symbol	SOD-323
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 ₁	$\frac{13.5}{(0.531)} \text{ MAX.}$
Quantity per Reel	--	3000

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

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