



Features

- ESD protection 30 kV max.
- Surge protection >24 A
- Protects 1 line
- Unidirectional configuration
- RoHS compliant*
- AEC-Q101 compliant**

Applications

- Protection of power buses
- Protection of I/O interfaces
- Overvoltage transient protection
- Telecom, computer, industrial and consumer electronics applications

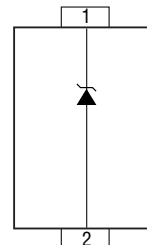
CDSOD323-T05S-Q - TVS Diode Series

General Information

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

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications in SOD323 package size format.

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 assist in meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.



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

Parameter	Symbol	Value	Unit
Unidirectional Peak Pulse Power (t _p = 8/20 μs)	P _{PP}	500	W
Ambient Temperature	T _A	-55 to +150	°C
Storage Temperature	T _{STG}	-55 to +150	°C
ESD Protection (per IEC 61000-4-2) Contact - Max. Air - Max.	ESD	±30 ±30	kV

Parameter	Symbol	Value	Unit
Working Peak Voltage	V _{WM}	5.0	V
Min. Breakdown Voltage @ 1 mA	V _{BR}	6.0	V
Maximum Clamping Voltage @ I _P = 1 A	V _C	9.8	V
Typical Clamping Voltage @ 8/20 μs @ I _{PP}	V _C	13.5 V @ 42 A	V
Maximum Leakage Current @ V _{WM}	I _D	10	μA
Typical Capacitance @ 0 V, 1 MHz	C _P	350	pF

Typical Part Marking

Each device has device marking outlined below. Unidirectional devices have an additional Polarity Band indicating the cathode.

CDSOD323-T05S-Q B

Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 3A



WARNING Cancer and Reproductive Harm
www.P65Warnings.ca.gov

*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.

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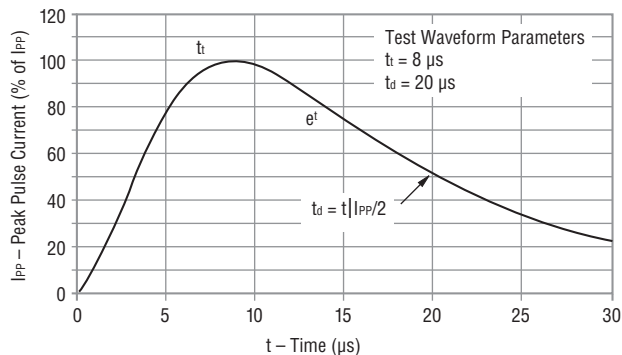
How to Order

Common Code	CD SOD323 - T 05 S - Q
Chip Diode	
Package	SOD323 = SOD-323 Package
Model	T = Transient Voltage Suppressor
Working Peak Reverse Voltage	05 = 5 V _{RWM} (Volts)
Suffix	S = Standard Capacitance Unidirectional Diode
AEC-Q101 Suffix	Q = AEC-Q101 Compliant

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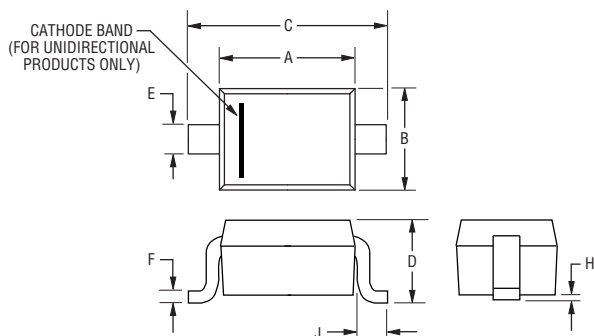
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Performance Graph - Pulse Waveform



Product Dimensions

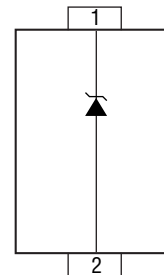
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



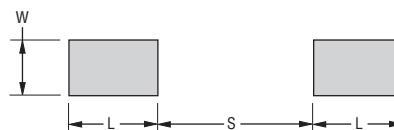
Dimensions	
A	$\frac{1.60 - 1.90}{(0.063 - 0.075)}$
B	$\frac{1.15 - 1.45}{(0.045 - 0.057)}$
C	$\frac{2.39 - 2.70}{(0.094 - 0.106)}$
D	$\frac{0.92 - 1.14}{(0.036 - 0.045)}$
E	$\frac{0.25 - 0.40}{(0.010 - 0.016)}$
F	$\frac{0.08 - 0.20}{(0.003 - 0.008)}$
H	$\frac{0.13}{(0.005)}$ MAX.
J	$\frac{0.30 - 0.45}{(0.012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

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

Block Diagram



Recommended Footprint



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

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

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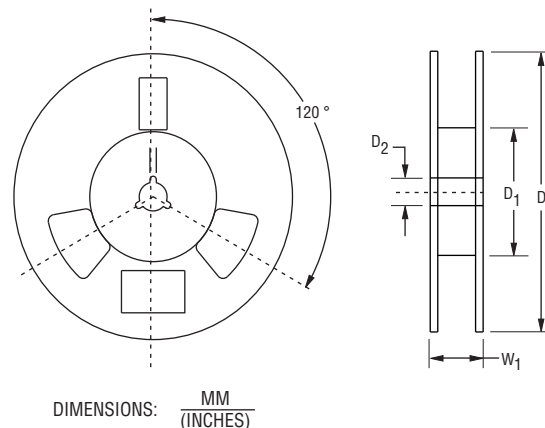
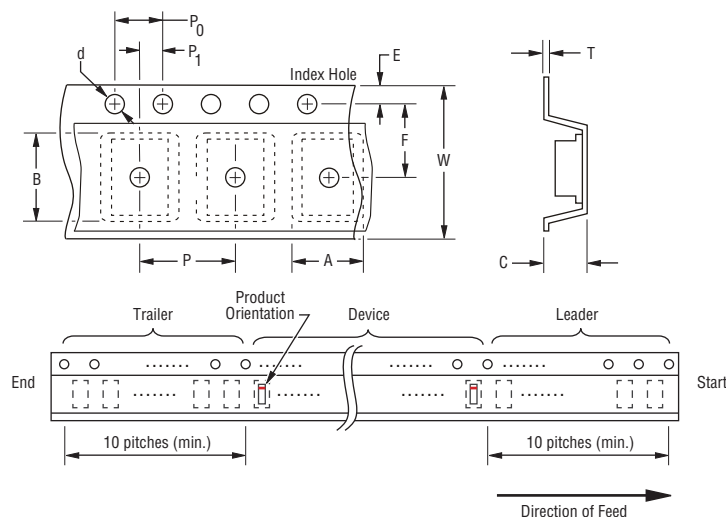
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Packaging Information

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



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

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	$\frac{80.0}{(3.150)}$ 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	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
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	$\frac{13.5}{(0.531)}$ Max.
Quantity per Reel	--	3,000

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