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

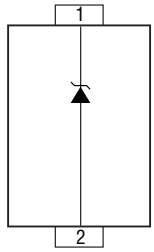
CDSOD323-T05S-Q - TVS Diode Series

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

How to Order

CD SOD323 - T 05 S - Q

Common Code
Chip Diode

Package
• SOD323 = SOD-323 Package

Model
T = Transient Voltage Suppressor

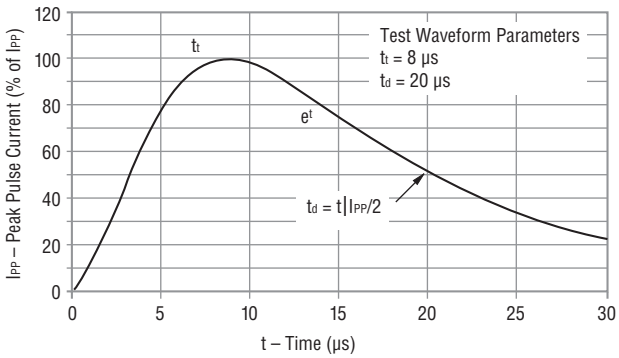
Working Peak Reverse Voltage
05 = 5 V_{RWM} (Volts)

Suffix
S = Standard Capacitance Unidirectional Diode

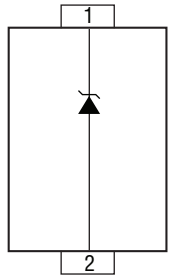
AEC-Q101 Suffix
Q = AEC-Q101 Compliant

* RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011.
** "Q" part number suffix indicates AEC-Q101 compliance.

Performance Graph - Pulse Waveform

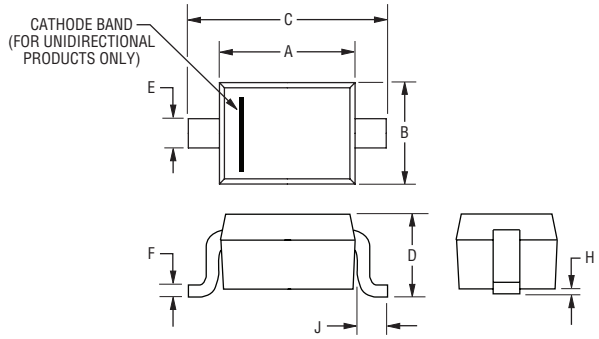


Block Diagram



Product Dimensions

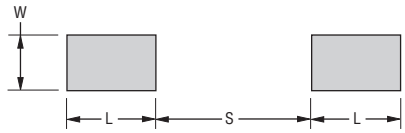
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



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

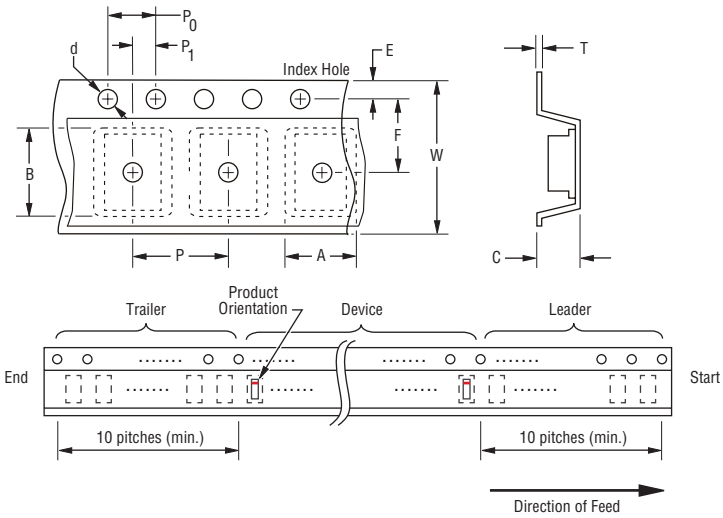


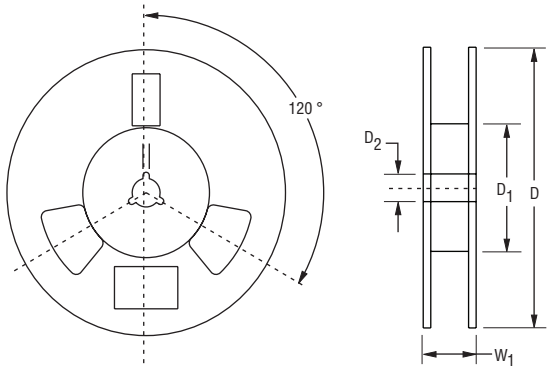
Dimensions (Nominal)	
L	0.80 (0.031)
S	1.40 (0.055)
W	0.50 (0.020)

DIMENSIONS: MM (INCHES)

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)

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

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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