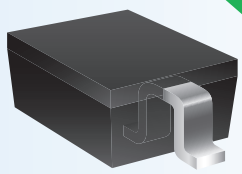
BOURNS®

AUTOMOTIVE GRADE

CDSOD323-TxxC-Q

TVS Diode Series



*RoHS and **AEC-Q101 COMPLIANT

Features

- Protects one line or one I/O port
- Bidirectional configuration
- ESD protection 30 kV max.
- Low capacitance: ~3 pF typical
- Replaces 0805 MLV devices
- RoHS compliant*
- AEC-Q101 compliant**

Applications

- Cellular phones
- PDAs and notebooks
- Digital cameras
- MP3 players and GPS
- USB interfaces
- Automotive

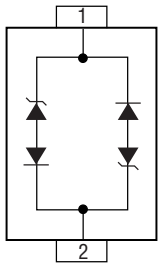
Sustainability

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

Product Overview

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

BIDIRECTIONAL



Bourns offers AEC-Q101 compliant Transient Voltage Suppressor Diodes for surge and ESD protection applications, in SOD323 package size format. This automotive grade Transient Voltage Supressor series offers a choice of voltage types of 5 V and 12 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 assist compliance with IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements.

Contact Information

www.bourns.com	Phone	Email
Asia-Pacific	+886-2 2562-4117	asiacus@bourns.com
Europe	+36 88 885 877	eurocus@bourns.com
Mexico	+52 614 478 0400	mexicus@bourns.com
The Americas	+1-951 781-5500	americus@bourns.com

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	CDSOD323-T05C-Q	CDSOD323-T12C-Q	Unit
Minimum Breakdown Voltage @ 1 mA	V_{BR}	6.0	13.3	V
Working Peak Voltage	V_{WM}	5.0	12.0	V
Maximum Clamping Voltage @ I_p = 1 A	V_C	9.8	19.0	V
Typical Clamping Voltage @ 8/20 µs @ I_{pp}	V_C	18.3 V @ 17 A	28.3 V @ 11 A	V
Maximum Leakage Current @ V_{WM}	I_D	5	1	µA
Typical Capacitance @ 0 V, 1 MHz	C_P	3	3	pF

* 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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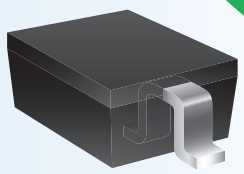
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AUTOMOTIVE GRADE

CDSOD323-TxxC-Q

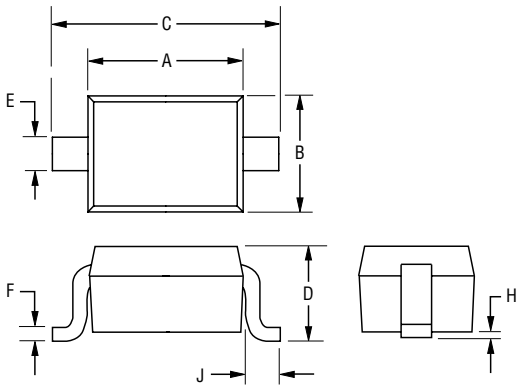
TVS Diode Series



*RoHS and **AEC-Q101 COMPLIANT

Product Dimensions

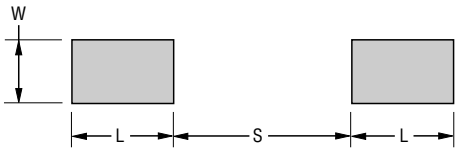
This is an RoHS compliant molded JEDEC SOD-323 package with 100 % Sn plating on the terminations. It weighs approximately 6 mg and has a flammability rating of UL 94V-0.



Dimensions	
A	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)

Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 3B

How to Order

CD SOD323-T 05 C - Q

Common Code
CD = Chip Diode
Package
SOD323 = SOD-323 Package
Model
T = Transient Voltage Suppressor
Working Peak Reverse Voltage (Volts)
05 = 5 V_{WM}
12 = 12 V_{WM}
Suffix
C = Bidirectional Diode
AEC-Q101 Suffix
Q = AEC-Q101 Compliant

Typical Part Marking

CDSOD323-T05C-Q 5C
CDSOD323-T12C-Q 2C

(Underline denotes AEC-Q101 compliancy)

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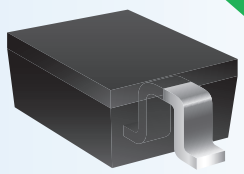
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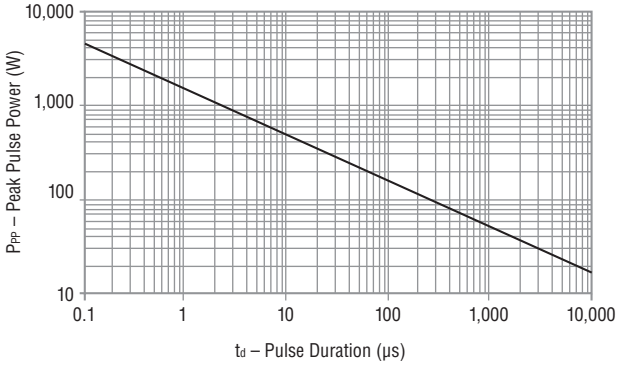
TVS Diode Series



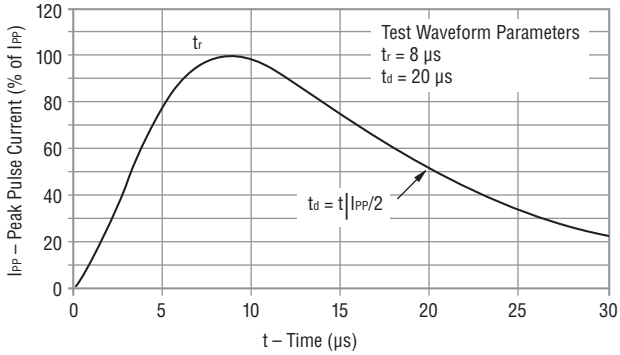
*RoHS and **AEC-Q101 COMPLIANT

Performance Graphs

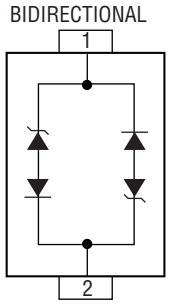
Typical Peak Pulse Power vs Pulse Time



Pulse Waveform



Block Diagram



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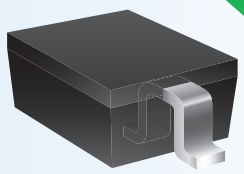
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AUTOMOTIVE GRADE

CDSOD323-TxxC-Q

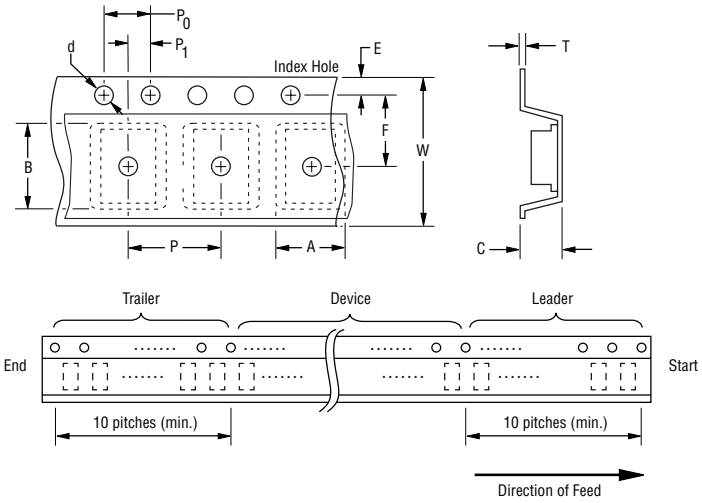
TVS Diode Series

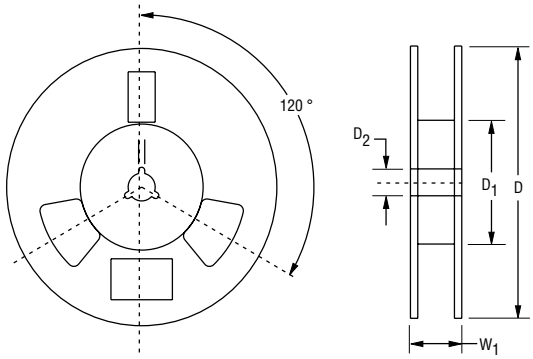


*RoHS and **AEC-Q101 COMPLIANT

Packaging Specifications

The product is packaged in 8 mm tape width format per EIA-481 standard.





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)

Item	Symbol	SOD-323
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	--	3000

DIMENSIONS: MM / (INCHES)

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