Features

- Low leakage current: 1 nA
- Bidirectional configuration
- ESD protection 30 kV max.
- Low capacitance: 3 pF typ.
- Replaces 0805 MLV devices
- RoHS compliant* and halogen free**
- Automotive grade AEC-Q101 compliant product***

Applications

- Automotive
  - Entertainment applications
  - Comfort applications
- Communication lines
- Portable electronics

CDSOD323-T12C-DSLQ - TVS Diode Series

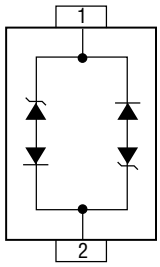
General Information

Portable communications and telecom equipment manufacturers 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. 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.

BIDIRECTIONAL



Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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

Parameter	Symbol	CDSOD323-T12C-DSLQ	Unit
Peak Pulse Current (t_p = 8/20 μs)	I_{PPM}	11	A
Peak Pulse Power (t_p = 8/20 μs)	P_{PP}	350	W
Operating Temperature	T_J	-55 to +150	ºC
Storage Temperature	T_{STG}	-55 to +150	ºC
ESD Protection (per IEC 61000-4-2) Contact Discharge	ESD	±30	kV

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

Parameter	Symbol	CDSOD323-T12C-DSLQ	Unit
Min. Breakdown Voltage @ 1 mA	V_{BR}	13.3	V
Working Peak Voltage	V_{wm}	12.0	V
Maximum Clamping Voltage @ I_P = 1 A	V_C	19.0	V
Typical Clamping Voltage @ 8/20 μs @ I_{PP}	V_C	28.3 V @ 11 A	V
Maximum Leakage Current @ V_{WM}	I_D	1	nA
Typical Capacitance @ 0 V, 1 MHz	C_J	3	pF

Note: The electrical specifications apply in both polarities.

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

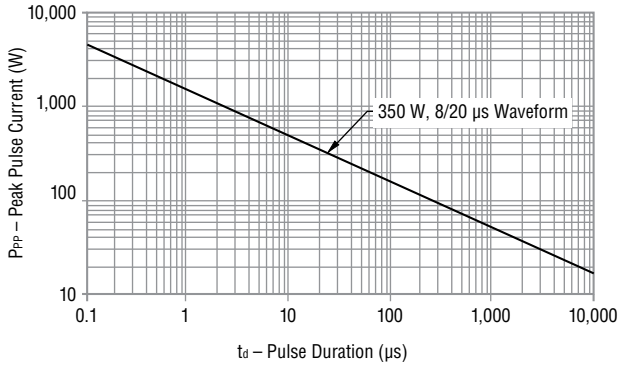
* RoHS Directive 2015/863, Mar 31, 2015 and Annex.

** 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.

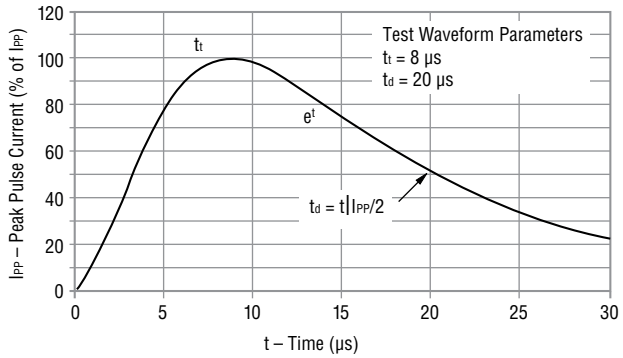
*** Q suffix for applications requiring appropriate AEC-Q101 compliance for electronic limiters.

Performance Graphs

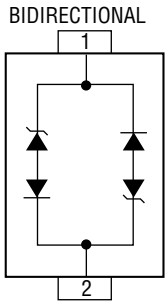
Typical Peak Pulse Power vs. Pulse Time



Pulse Waveform



Block Diagram



How to Order

CD SOD323 - T 12 C - DSL Q

Common Code
Chip Diode

Package
• SOD323 = SOD-323 Package

Model
T = Transient Voltage Suppressor

Working Peak Reverse Voltage
12 = 12 V_{RWM} (Volts)

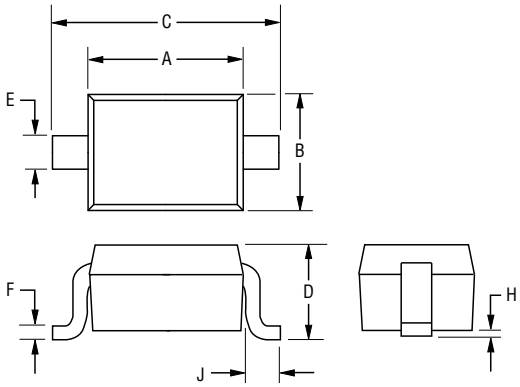
Suffix
C = Bidirectional Diode
-DSL = Low Leakage Current
Q = AEC-Q101 compliant

Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) 3B

Product Dimensions

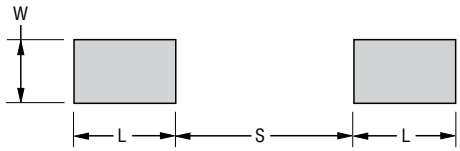
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



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 - 0.13 (0.000 - 0.005)
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)

Typical Part Marking

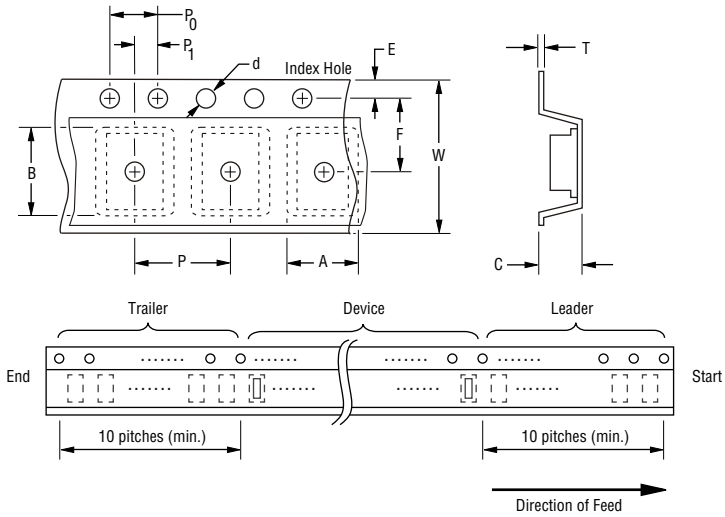
Each device has device marking outlined below.

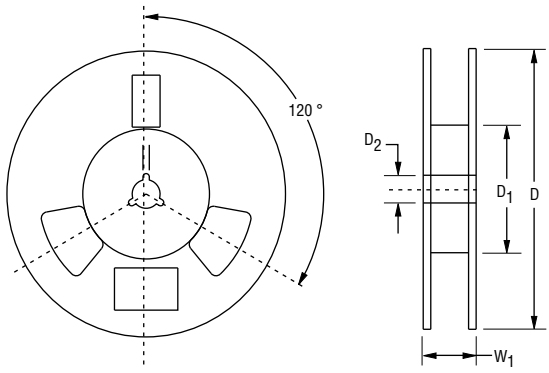
CDSOD323-T12C-DSLQ.....2D

(Underline denotes AEC-Q101 compliancy)

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)

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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