



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

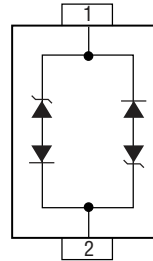
General Information

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:



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
Operating Temperature	T _J	-55 to +150	°C
Storage Temperature	T _{STG}	-55 to +150	°C
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
Typical Peak Pulse Power (t _p = 8/20 μs)	P _{PP}	350	W
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.

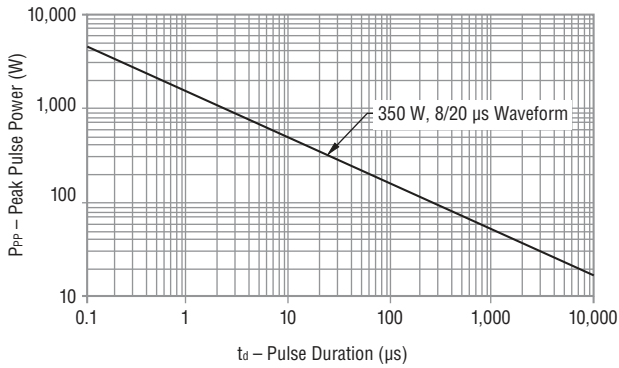
Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

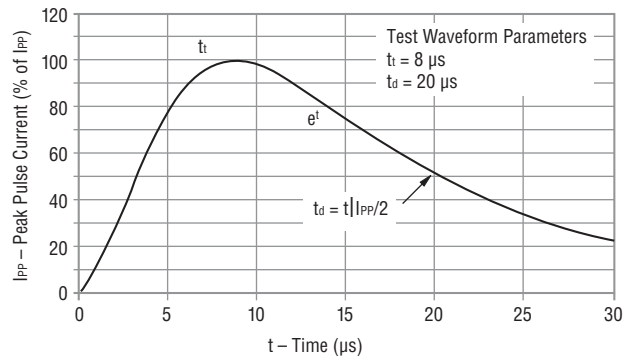
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Performance Graphs

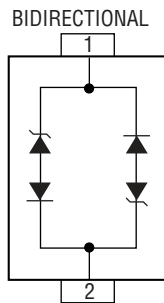
Typical Peak Pulse Power vs. Pulse Time



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

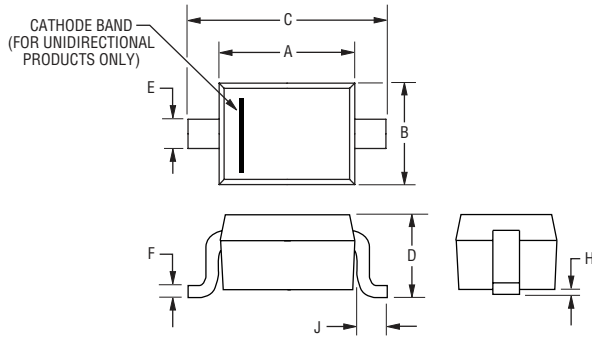
Moisture Sensitivity Level 1
 ESD Classification (HBM) 3B

CDSOD323-T12C-DSLQ - TVS Diode Series



Product Dimensions

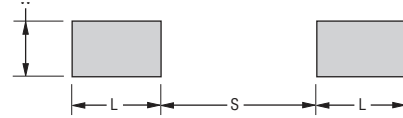
This is a molded JEDEC SOD-323 package with lead free 100 % Sn plating on the terminations. It weighs approximately 30 mg and has a flammability rating of UL 94V-0.



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	$\frac{0 - 0.13}{(0.000 - 0.005)}$
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: $\frac{\text{MM}}{\text{(INCHES)}}$

Typical Part Marking

Each device has device marking outlined below.

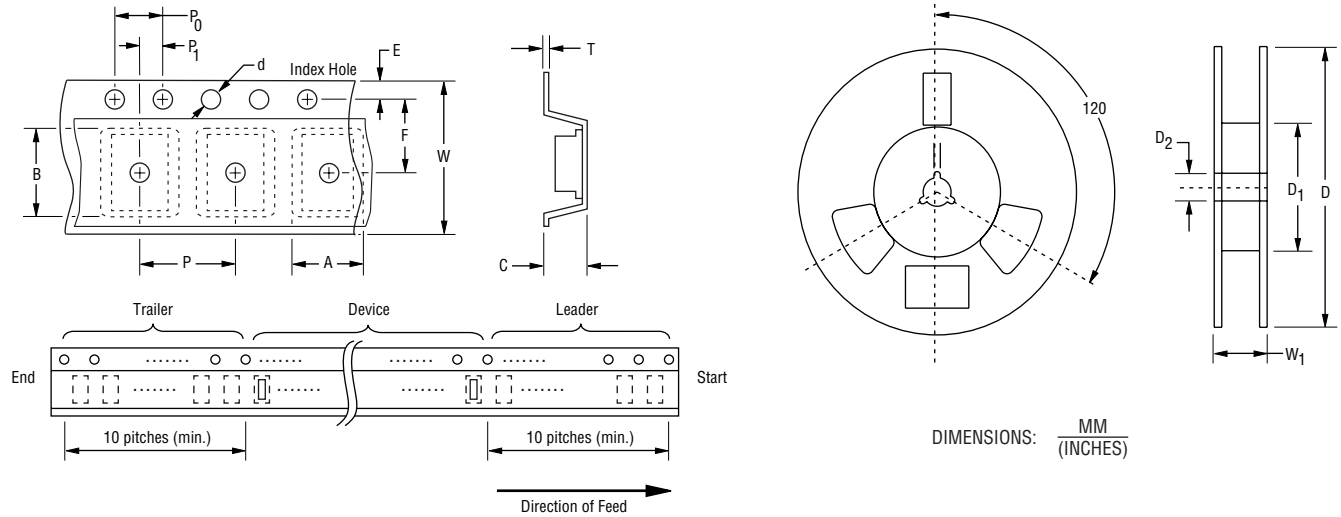
CDSOD323-T12C-DSLQ.....2D
 (Underline denotes AEC-Q101 compliancy)

CDSOD323-T12C-DSLQ - TVS Diode Series

BOURNS®

Packaging Information

The surface mount product is packaged in an 8 mm x 4 mm tape and reel 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	$\frac{80.0}{(3.150)}$ 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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REV. 04/23

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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