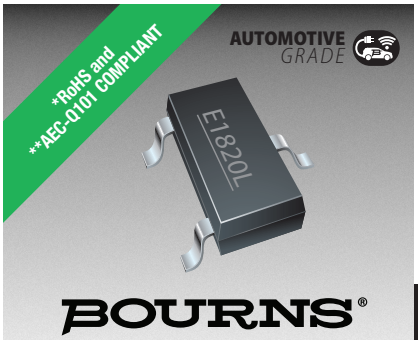


Features

- Protects one or two lines
- Unidirectional and bidirectional configurations
- ESD protection 30 kV max.
- RoHS compliant*
- AEC-Q101 compliant**

Applications

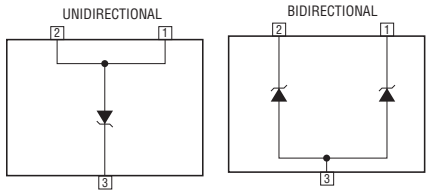
- Protection of power buses
- Protection of I/O interfaces
- Overvoltage transient protection
- Telecom, computer, industrial and consumer electronics applications

CDSOT23-T03-Q~T15C-Q - TVS Diode Array 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 Array diodes for surge and ESD protection applications, in compact chip package SOT23 size format. The TransientVoltage Supressor Array series offers a choice of voltage types as listed below. 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.

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

Parameter	Symbol	Value	Unit
Ambient Temperature	T_A	-55 to +150	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Additional Information

Click these links for more information:

PRODUCT SELECTOR | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

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

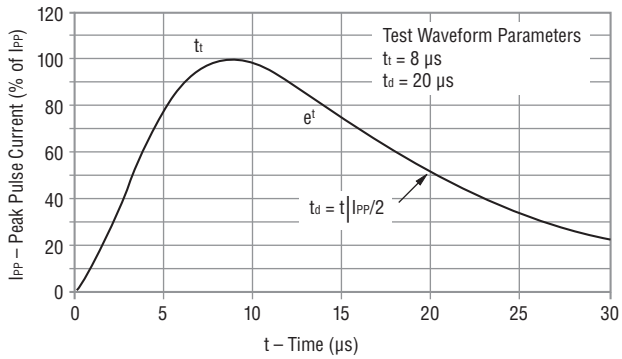
Parameter	Symbol	CDSOT23-			Unit
		Unidirectional	Bidirectional	Bidirectional	
		T03-Q	T08C-Q	T15C-Q	
Maximum Working Peak Voltage	V_{WM}	3.3	8.0	15.0	V
Minimum Breakdown Voltage @ 1 mA	V_{BR}	4.0	8.5	16.7	V
Maximum Clamping Voltage V_C @ I_P = 1 A (1)	V_C	7.0	13.4	24.0	V
Typical Clamping Voltage @ 8/20 μs V_C = I_{PP} (1)	V_C	10.9 V @ 43 A	16.9 V @ 34 A	25.0 V @ 15 A	V
Typical Peak Pulse Power (t_p @ 8/20 μs) (1)	P_{PP}	500			W
Maximum Leakage Current @ V_{WM}	I_D	125	10	1	μA
Typical Capacitance @ 0 V, 1 MHz	$C_{j(SD)}$	500	150	60	pF
ESD Protection (per IEC 61000-4-2) Contact - Max. Air - Max.	ESD	±30 ±30			kV

Notes: (1) See Pulse Wave Form.
Part numbers with a “C” suffix are bidirectional devices, i.e., CDSOT23-T08C-Q & CDSOT23-T15C-Q.

CALIFORNIA WARNING: Can expose you to lead, a carcinogen and reproductive toxicant.
See 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.
The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.

Performance Graph - Pulse Waveform



How to Order

CD SOT23 - T 03 C - Q

Common Code
Chip Diode

Package
SOT23 = SOT-23 Package

Model
T = Transient Voltage Suppressor

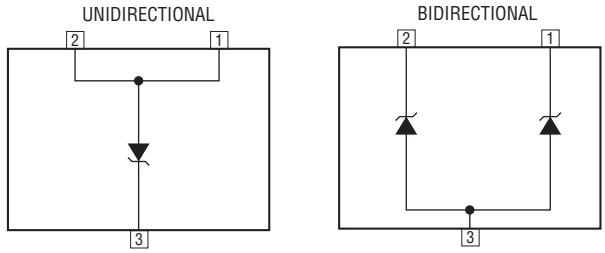
Working Peak Voltage
03 = 3.3 V_{WM} (Volts)
08 = 8 V_{WM} (Volts)
15 = 15 V_{WM} (Volts)

Suffix
C = Bidirectional Diode

AEC-Q101 Suffix
Q = AEC-Q101 Compliant

Block Diagram

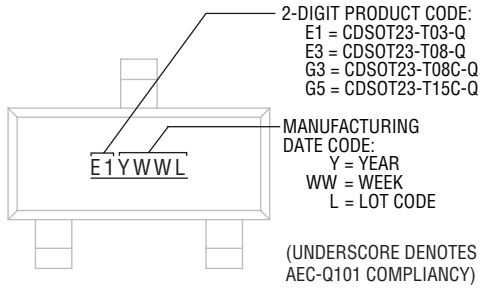
The device block diagrams below include the pin names and basic electrical connections associated with each channel.



Environmental Specifications

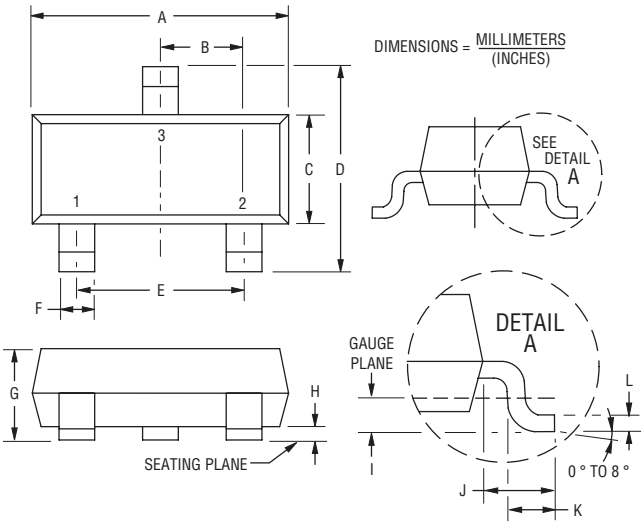
Moisture Sensitivity Level 1
ESD Classification (HBM) 3A

Typical Part Marking



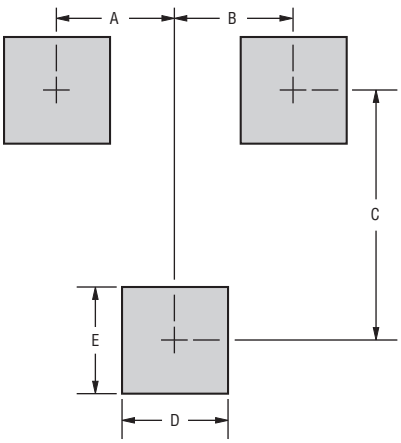
Product Dimensions

This is a molded JEDEC SOT-23 package with 100 % Matte Sn plating on the lead frame. It weighs approximately 0.6 g and has a flammability rating of UL 94V-0.



Dimensions	
A	2.80 - 3.00 (0.110 - 0.118)
B	0.95 (0.037) BSC
C	1.20 - 1.40 (0.047 - 0.055)
D	2.10 - 2.49 (0.083 - 0.098)
E	1.90 (0.075) BSC
F	0.30 - 0.50 (0.012 - 0.019)
G	0.89 - 1.17 (0.035 - 0.046)
H	0.05 - 0.015 (0.002 - 0.006)
I	0.25 (0.010) BSC
J	0.46 - 0.64 (0.018 - 0.025)
K	0.40 - 0.58 (0.016 - 0.023)
L	0.08 - 0.20 (0.003 - 0.008)

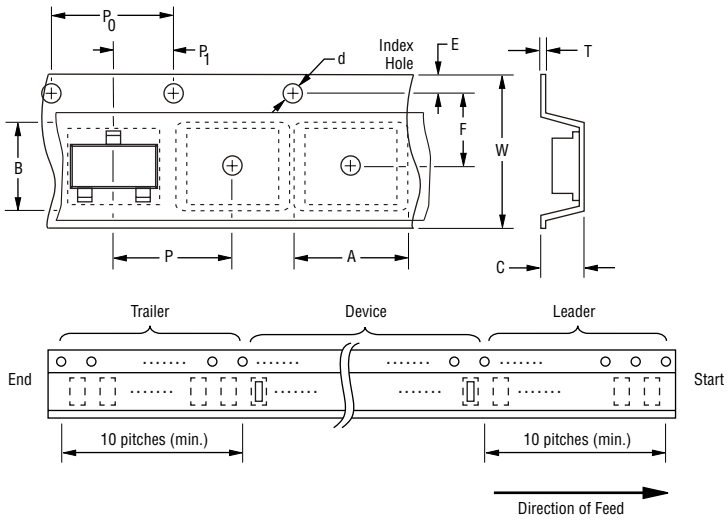
Recommended Footprint

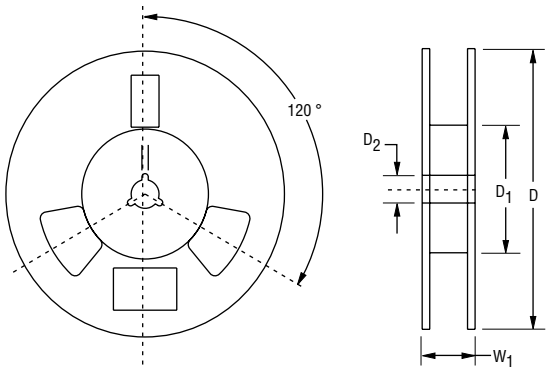


Dimensions	
A	0.95 (0.037)
B	0.95 (0.037)
C	2.00 (0.079)
D	0.85 (0.033)
E	0.85 (0.033)

Packaging Information

The surface mount product is packaged in an 12 mm x 8 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	SOT-23
Carrier Width	A	2.25 ± 0.10 (0.088 ± 0.004)
Carrier Length	B	2.34 ± 0.10 (0.092 ± 0.004)
Carrier Depth	C	1.22 ± 0.10 (0.048 ± 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	50.0 (1.969) 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	14.4 (0.567) MAX.
Quantity per Reel	--	3,000

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REV. 02/26

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