



Features

- Surface Mount SOD-123FL package
- Standoff Voltage: 28 or 36 volts
- Power Dissipation: 400 watts
- 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

SMF4L-Q Transient Voltage Suppressor Diode Series

General Information

Bourns offers Transient Voltage Suppressor Diodes for surge and ESD protection applications, in compact chip package SOD-123FL size format. The Transient Voltage Suppressor series offers a choice of Working Peak Reverse Voltage of 28 or 36 V. Typical fast response times are less than 1.0 picosecond from 0 V to Breakdown Voltage.

Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.

Additional Information

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Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Maximum Peak Pulse Power Dissipation (10/1000 μs) ¹	P_{PPM}	400	W
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	50	A
Operating Temperature Range	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

¹ Non-repetitive current pulse, per Pulse Waveform graph and derated above $T_A = 25^\circ\text{C}$.

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Unidirectional Device		Breakdown Voltage V_{BR} (Volts)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Voltage @ I_{RSM}	Maximum Reverse Surge Current
Part No.	Marking	Min.	Max.	@ I_T (mA)	V_{RWM} (V)	I_R (μA)	V_{RSM} (V)	I_{RSM} (A)
SMF4L28A-Q	MGQ	31.1	34.4	1.0	28	1.0	45.4	8.8
SMF4L36A-Q	MPQ	40.0	44.2	1.0	36	1.0	58.1	6.9

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

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

***Q" part number suffix for automotive and other applications requiring appropriate AEC-Q101 compliance.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

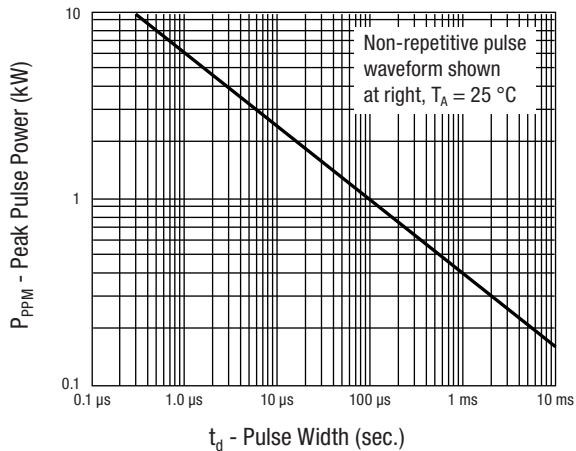
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SMF4L-Q Transient Voltage Suppressor Diode Series

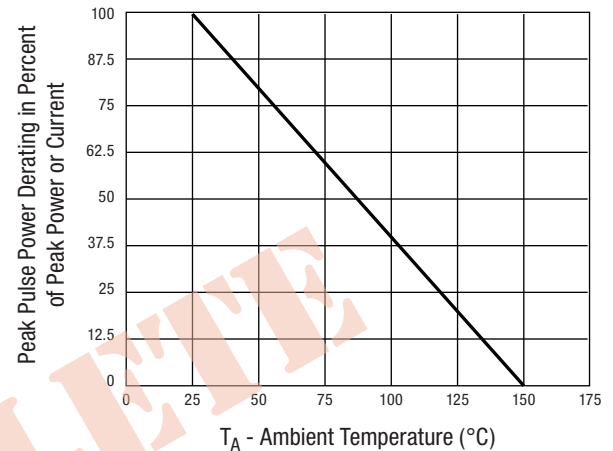
BOURNS®

Performance Graphs

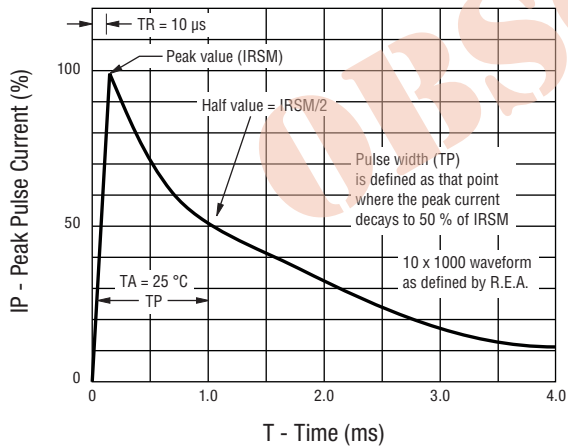
Peak Pulse Power Derating Curve



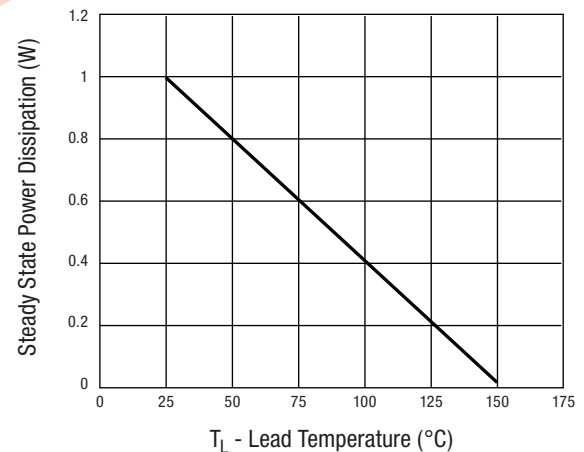
Maximum Non-Repetitive Surge Current



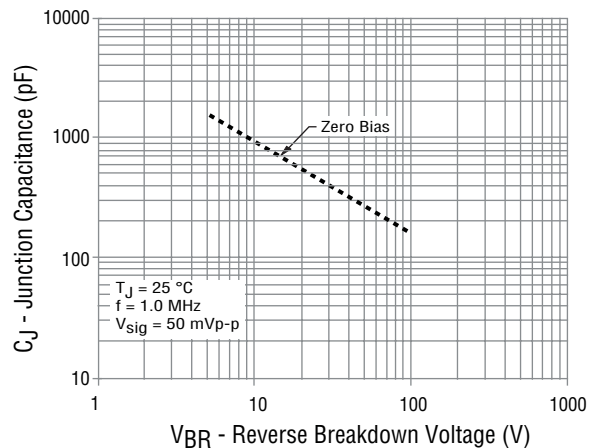
Pulse Waveform



Steady State Power Derating Curve



Typ. Junction Capacitance vs. Reverse Breakdown Voltage

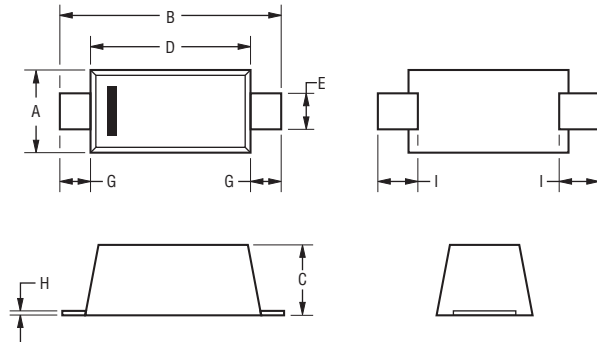


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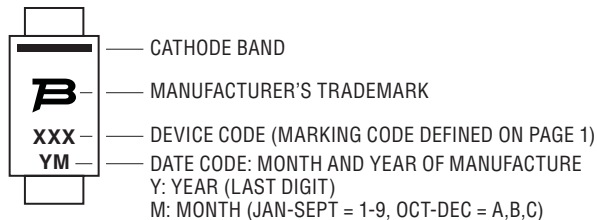
Product Dimensions



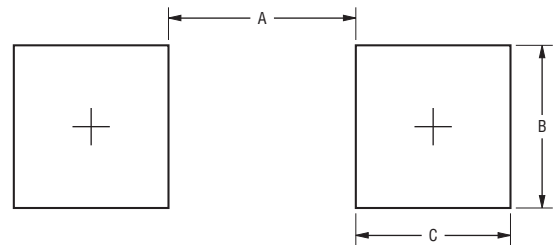
Dimension	SMF (SOD-123FL)
A	1.65 ± 0.25 (0.065 ± 0.01)
B	3.70 ± 0.15 (0.146 ± 0.006)
C	1.125 ± 0.225 (0.044 ± 0.009)
D	2.825 ± 0.275 (0.111 ± 0.011)
E	0.775 ± 0.275 (0.031 ± 0.011)
G	0.400 ± 0.15 (0.016 ± 0.006)
H	0.175 ± 0.075 (0.007 ± 0.003)
I	0.550 ± 0.15 (0.022 ± 0.006)

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Typical Part Marking



Recommended Footprint



Dimension	SMF (SOD-123FL)
A (Max.)	2.36 (0.093)
B (Min.)	1.22 (0.048)
C (Min.)	0.91 (0.036)

DIMENSIONS: $\frac{\text{MM}}{(\text{INCHES})}$

Physical Specifications

Case Molded plastic per UL Class 94V-0
Polarity.....Cathode band indicates unidirectional device

How to Order

Package **SMF4L 28 A - Q**
SMF4L = 400W SMF/SOD-123FL Package
Working Peak Reverse Voltage
28 = 28 V_{RWM} (Volts)
Suffix
A = 5 % Tolerance Unidirectional Device
AEC-Q101 Suffix
Q = AEC-Q101 Compliant

Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM).....3B

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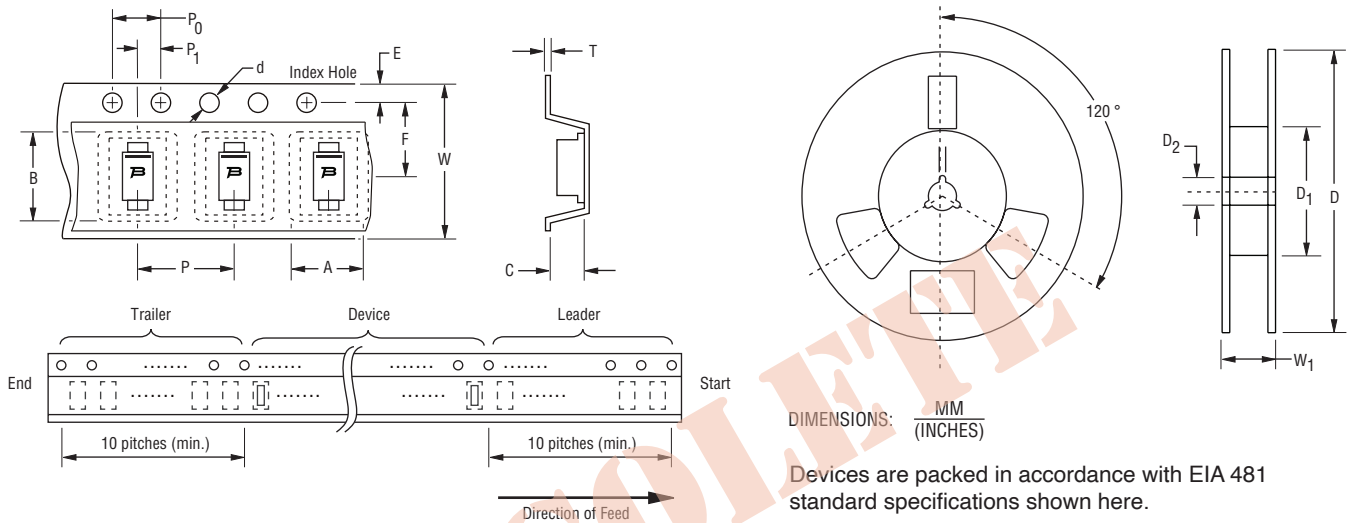
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SMF4L-Q Transient Voltage Suppressor Diode Series

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Packaging Information

The product will be dispensed in tape and reel format (see diagram below).



Item	Symbol	SMF4L-Q Series
Carrier Width	A	1.9 ± 0.20 (0.075 ± 0.008)
Carrier Length	B	4.01 ± 0.20 (0.158 ± 0.008)
Carrier Depth	C	1.32 ± 0.20 (0.052 ± 0.008)
Sprocket Hole	d	$1.50 + 0.10 / - 0.00$ (0.059 + 0.004 / - 0.00)
Reel Outside Diameter	D	178 (7.008)
Reel Inner Diameter	D ₁	50.0 (1.969) MIN.
Feed Hole Diameter	D ₂	$13.0 + 0.50 / - 0.20$ (0.512 + 0.020 / - 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	0.40 (0.016) MAX.
Tape Width	W	8.00 ± 0.30 (0.315 ± 0.012)
Reel Width	W ₁	14.4 (5.669) MAX.
Quantity per Reel	--	2,500

REV. 10/22

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