



Features

- Power Dissipation: 200 watts
- RoHS compliant
- Response Time is < 1 ns
- Low Leakage
- Low Clamping Voltage

Applications

- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks, Desktops, Servers
- Portable Instrumentation

VP2SMFxxA Series ----- SURFACE MOUNT TVS Diodes

General Information

Vic 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 from 5 V up to 58 V and Breakdown Voltage up to 550 V. Typical fast response times are less than 1.0 picoseconds for unidirectional devices and less than 5.0 picoseconds for bidirectional devices from 0 V to Minimum Breakdown Voltage.



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 10/1000μs waveform	P _{PK}	200	W
Peak pulse power dissipation at 8/20μs waveform	P _{PK}	1000	W
Maximum Operating temperature	T _{OPER}	-40 to +90	°C
Maximum Storage temperature	T _{STG}	-55 to +125	°C
Maximum lead temperature for soldering during 10s	T _L	260	°C

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

Parameter	V _{RWM}	I _L	V _{BR} @I _T		I _T	V _C	I _{PP}
Uni-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
VP2SMF5.0A	5	150	6.4	7	10	9.2	21.7
VP2SMF6.0A	6	100	6.67	7.37	10	10.3	19.4
VP2SMF6.5A	6.5	100	7.22	7.98	10	11.2	17.9
VP2SMF7.0A	7	50	7.78	8.6	10	12	16.7
VP2SMF7.5A	7.5	50	8.33	9.21	1	12.9	15.5

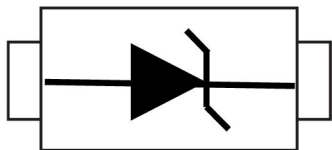


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Electrical Characteristics (@ $T_A = 25\text{ }^{\circ}\text{C}$ Unless Otherwise Noted)

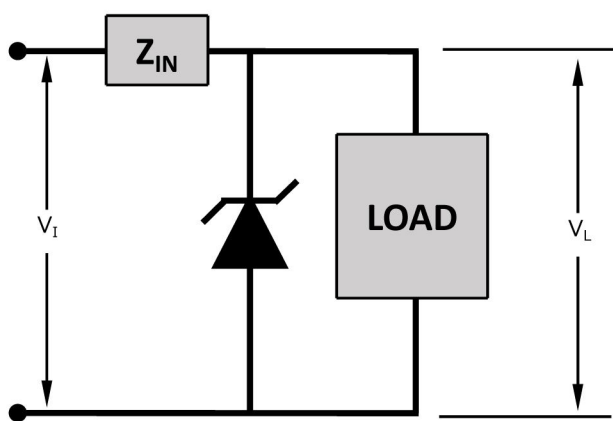
Parameter	V_{RWM}	I_L	$V_{BR}@I_T$		I_T	V_C	I_{PP}
Uni-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
VP2SMF8.0A	8	20	8.89	9.83	1	13.6	14.7
VP2SMF9.0A	9	5	10	11.1	1	15.4	13
VP2SMF10A	10	2	11.1	12.3	1	17	11.8
VP2SMF11A	11	1	12.2	13.5	1	18.2	11
VP2SMF12A	12	1	13.3	14.7	1	19.9	10.1
VP2SMF13A	13	1	14.4	15.9	1	21.5	9.3
VP2SMF14A	14	1	15.6	17.2	1	23.2	8.6
VP2SMF15A	15	1	16.7	18.5	1	24.4	8.2
VP2SMF18A	18	1	20	22.1	1	29.2	6.8
VP2SMF20A	20	1	22.2	24.5	1	32.4	6.2
VP2SMF22A	22	1	24.4	26.9	1	35.5	5.6
VP2SMF24A	24	1	26.7	29.5	1	38.9	5.1
VP2SMF26A	26	1	28.9	31.9	1	42.1	4.8
VP2SMF28A	28	1	31.1	34.4	1	45.4	4.4
VP2SMF30A	30	1	33.3	36.8	1	48.4	4.1
VP2SMF33A	33	1	36.7	40.6	1	53.3	3.8
VP2SMF36A	36	1	40	44.2	1	58.1	3.4
VP2SMF48A	48	1	53.3	58.9	1	77.4	2.6
VP2SMF51A	51	1	56.7	62.7	1	82.4	2.4
VP2SMF58A	58	1	64.4	71.2	1	93.6	2.1

Block Diagram

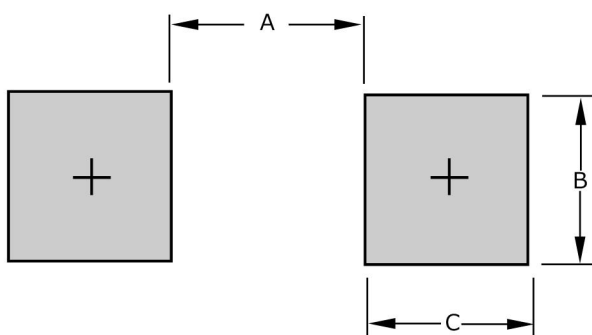


Uni-directional

Typical Protection Circuit



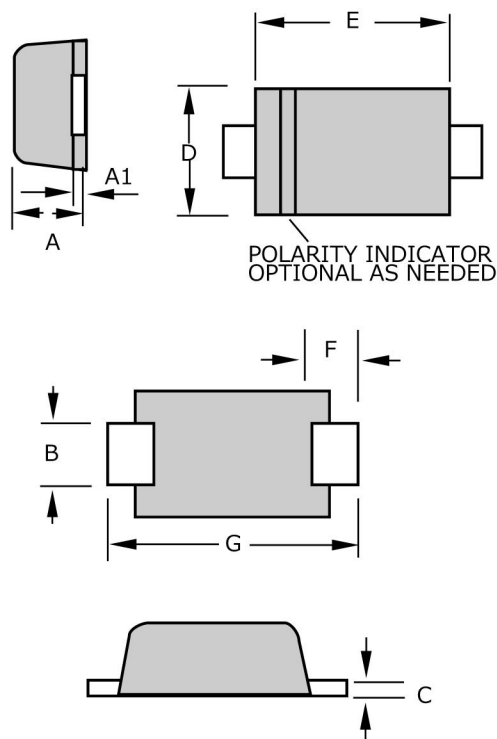
Recommended PCB Footprint



Dimension	SOD-123FL
A	$\frac{2.36}{(0.093)}$
B	$\frac{1.12}{(0.048)}$
C	$\frac{0.91}{(0.036)}$

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

Product Dimensions



Dimension	SOD-123FL
A	$\frac{0.90-1.00}{(0.035-0.039)}$
A1	$\frac{0.05-0.10}{(0.002-0.004)}$
b	$\frac{0.70-1.10}{(0.028-0.043)}$
C	$\frac{0.10-0.20}{(0.004-0.008)}$
D	$\frac{1.50-1.80}{(0.059-0.071)}$
E	$\frac{2.50-2.90}{(0.098-0.114)}$
F	$\frac{0.55-0.95}{(0.022-0.037)}$
G	$\frac{3.40-3.80}{(0.134-0.150)}$

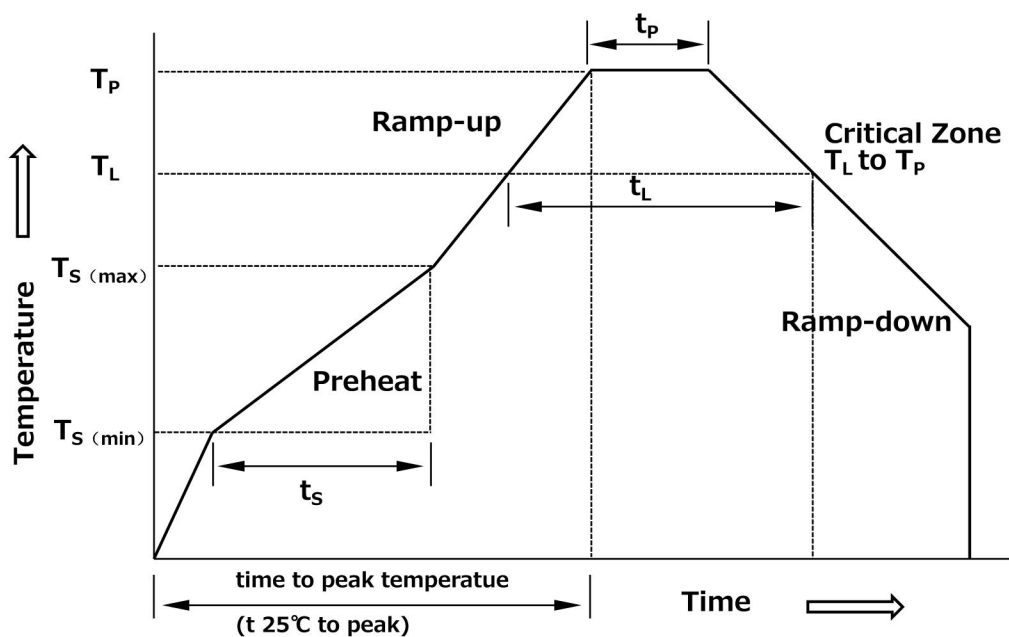
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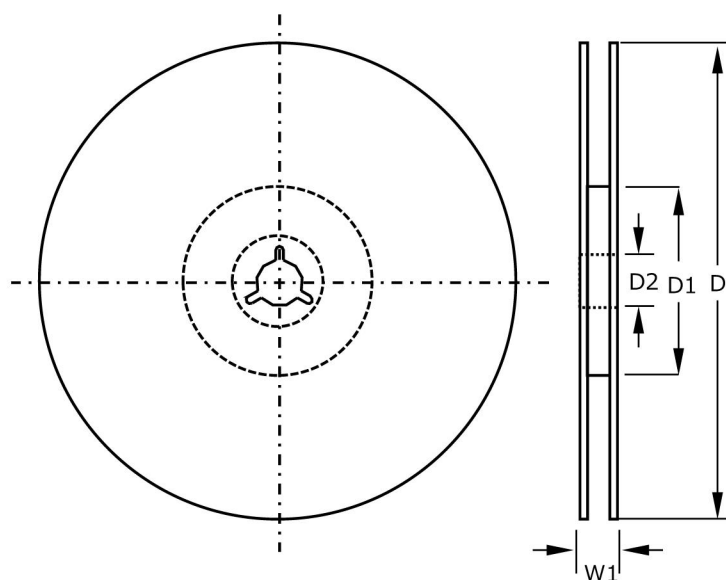
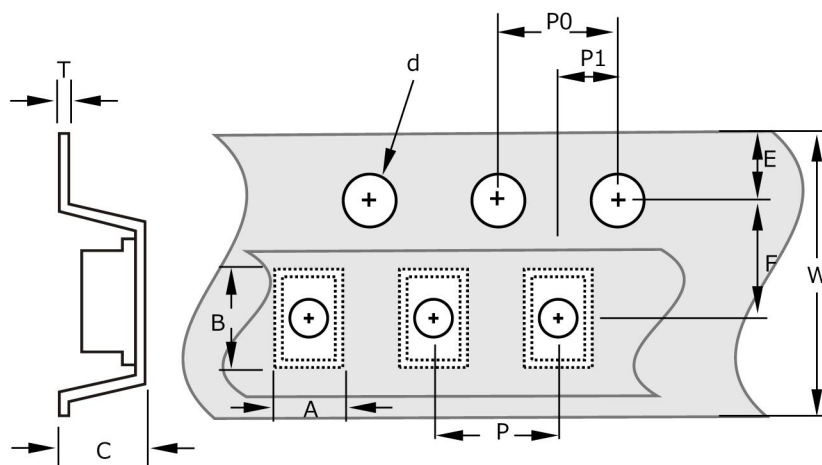
Recommendable reflow soldering

Profile Feature	Pb-Free Assembly
Average Ramp-UP Rate (T _{smax} to T _p)	3 °C/secondmax.
Preheat -Temperature Min(T _{smin}) -Temperature Max(T _{smax}) -Time(T _{smin} to T _{smax})	150 °C 200 °C 60-180seconds
Time maintained above: -Temperature(T _L) -Time(t _L)	217 °C 60-150 seconds
Peak/Classification Temperature(T _p)	260°C
Time within 5°C of actual Peak Temperature(t _p)	20-40 seconds
Ramp-Down Rate	6°C/secondmax.
Time 25°C to Peak Temperature	8 minutes max.



Packaging Information

Symbol	SOD-123FL
A	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
B	$\frac{4.00 \pm 0.05}{(0.157 \pm 0.002)}$
C	$\frac{0.75 \pm 0.05}{(0.029 \pm 0.002)}$
d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
D	$\frac{180.00 \pm 2.00}{(7.087 \pm 0.079)}$
D1	$\frac{60.0 \pm 1.00}{(2.362 \pm 0.039)}$
D2	$\frac{13.0 \pm 0.20}{(0.516 \pm 0.008)}$
E	$\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$
F	$\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$
P	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
P0	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
P1	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
T	$\frac{0.20 \pm 0.05}{(0.008 \pm 0.002)}$
W	$\frac{8.00 \pm 0.10}{(0.315 \pm 0.004)}$
W1	$\frac{11.6 \pm 1.00}{(0.457 \pm 0.039)}$



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

Quantity of products in the taping package

- (1) Standard quantity : 3000pcs/Reel for the Series.
- (2) Shipping quantity is a multiple of standard quantity.
- (3) For more information, please contact our local agents.