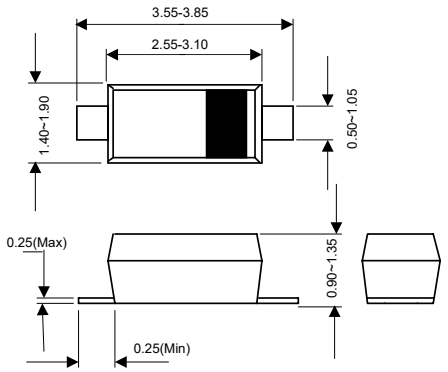
SM4F5.0A~SM4F170A

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 5 to 170 Volt **POWER** 400 Watt

SOD-123FL Unit:mm



FEATURES

- For surface mounted applications in order to optimize board space.
- Ultra Thin Profile Package for Space Constrained Utilization
- Package suitable for Automated Handling
- Low inductance
- High temperature soldering : 260°C/10 seconds at terminals
- ESD IEC-61000-4-2 Air + 30kV, Contact + 30kV
- Lead free in compliance with EU RoHS 2.0

MECHANICAL DATA

- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0
- Polarity: Color band denotes cathode end

Uni-directional

Cathode Anode

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on T_A = 25°C (Notes 1,2,5, Fig.1)	P_{PP}	400	Watts
Steady State Power Dissipation	$P_{M(AV)}$	1.0	W
Peak Forward Surge Current per Fig.5 (Notes 3)	I_{FSM}	30	Amps
Peak Pulse Current on tp=10/1000μs waveform (Notes 1)Fig.2	I_{PPM}	see Table 1	Amps
Typical Thermal Resistance Junction to Air (Notes 2)	$R_{\theta JA}$	180	°C / W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to +150	°C

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2.
2. Mounted on 5mm² copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at 75°C = T_L.
5. Peak pulse power waveform is 10/1000μs.
6. A transient suppressor is selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.

SM4F5.0A~SM4F170A

ELECTRICAL CHARACTERISTICS @25°C

Part Number (Uni)	Device Marking Code	Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
	Uni	Min (V)	Max (V)	I_T (mA)				
SM4F5.0A	F5.0	6.40	7.00	10	800	5.0	43.50	9.20
SM4F6.0A	F6.0	6.67	7.37	10	800	6.0	38.80	10.3
SM4F6.5A	F6.5	7.22	7.98	10	500	6.5	35.70	11.2
SM4F7.0A	F7.0	7.78	8.60	10	200	7.0	33.30	12.0
SM4F7.5A	F7.5	8.33	9.21	1	100	7.5	31.00	12.9
SM4F8.0A	F8.0	8.89	9.83	1	50	8.0	29.40	13.6
SM4F8.5A	F8.5	9.44	10.40	1	20	8.5	27.70	14.4
SM4F9.0A	F9.0	10.00	11.10	1	10	9.0	26.00	15.4
SM4F10A	F10	11.10	12.30	1	5	10.0	23.50	17.0
SM4F11A	F11	12.20	13.50	1	1	11.0	21.98	18.2
SM4F12A	F12	13.30	14.70	1	1	12.0	20.10	19.9
SM4F13A	F13	14.40	15.90	1	1	13.0	18.60	21.5
SM4F14A	F14	15.60	17.20	1	1	14.0	17.24	23.2
SM4F15A	F15	16.70	18.50	1	1	15.0	16.39	24.4
SM4F16A	F16	17.80	19.70	1	1	16.0	15.38	26.0
SM4F17A	F17	18.90	20.90	1	1	17.0	14.49	27.6
SM4F18A	F18	20.00	22.10	1	1	18.0	13.70	29.2
SM4F19A	F19	21.10	23.30	1	1	19.0	13.00	30.8
SM4F20A	F20	22.20	24.50	1	1	20.0	12.35	32.4
SM4F22A	F22	24.40	26.90	1	1	22.0	11.27	35.5
SM4F24A	F24	26.70	29.50	1	1	24.0	10.28	38.9
SM4F26A	F26	28.90	31.90	1	1	26.0	9.50	42.1
SM4F28A	F28	31.10	34.40	1	1	28.0	8.81	45.4
SM4F30A	F30	33.30	36.80	1	1	30.0	8.26	48.4
SM4F33A	F33	36.70	40.60	1	1	33.0	7.50	53.3
SM4F36A	F36	40.00	44.20	1	1	36.0	6.88	58.1
SM4F40A	F40	44.40	49.10	1	1	40.0	6.20	64.5
SM4F43A	F43	47.80	52.80	1	1	43.0	5.70	69.4
SM4F45A	F45	50.00	55.30	1	1	45.0	5.50	72.7
SM4F48A	F48	53.30	58.90	1	1	48.0	5.20	77.4
SM4F51A	F51	56.70	62.70	1	1	51.0	4.90	82.4
SM4F54A	F54	60.00	66.30	1	1	54.0	4.60	87.1
SM4F58A	F58	64.40	71.20	1	1	58.0	4.30	93.6
SM4F60A	F60	66.70	73.70	1	1	60.0	4.10	96.8
SM4F64A	F64	71.10	78.60	1	1	64.0	3.90	103
SM4F70A	F70	77.80	86.00	1	1	70.0	3.50	113
SM4F75A	F75	83.30	92.10	1	1	75.0	3.30	121
SM4F78A	F78	86.70	95.80	1	1	78.0	2.20	126
SM4F85A	F85	94.40	104	1	1	85.0	2.90	137
SM4F90A	F90	100	111	1	1	90.0	2.70	146
SM4F100A	F100	111	123	1	1	100	2.50	162
SM4F110A	F110	122	135	1	1	110	2.30	177
SM4F120A	F120	133	147	1	1	120	2.10	193
SM4F130A	F130	144	159	1	1	130	1.90	209
SM4F150A	F150	167	185	1	1	150	1.60	243
SM4F160A	F160	178	197	1	1	160	1.50	259
SM4F170A	F170	189	209	1	1	170	1.50	275

Electrical Characteristics

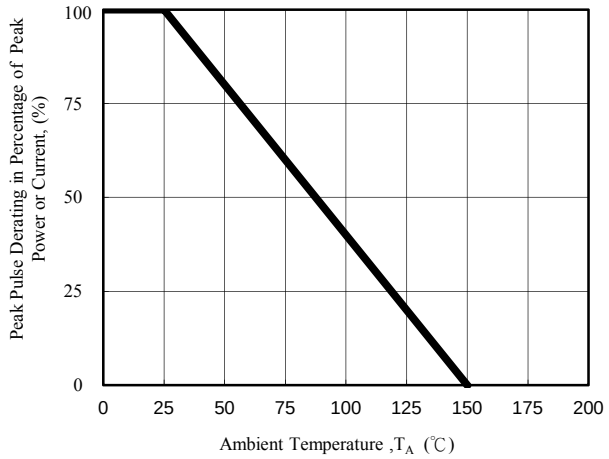


Fig. 1 - Pulse Derating Curve

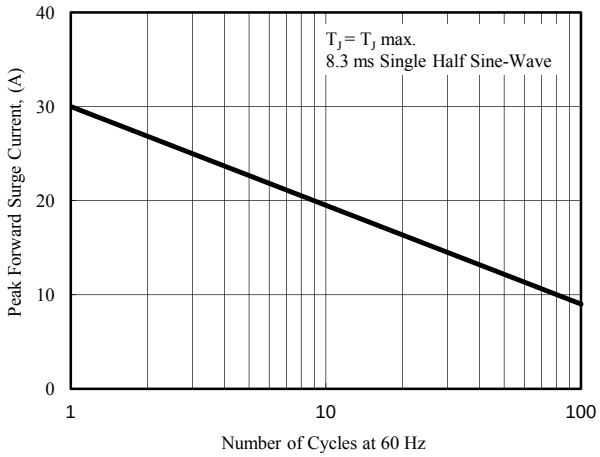


Fig. 2 - Maximum Non-Repetitive Surge Current

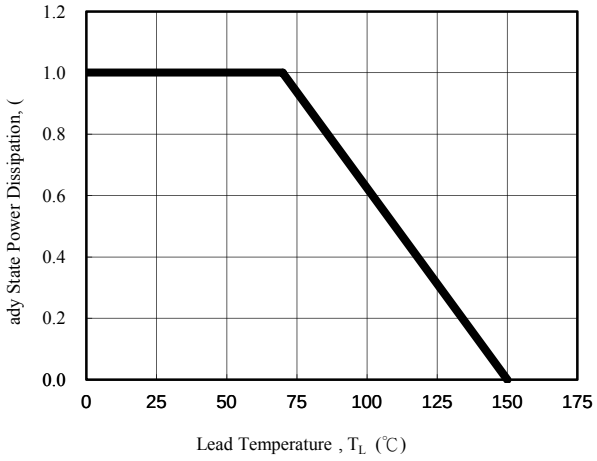


Fig. 3 - Steady State Power Derating Curve

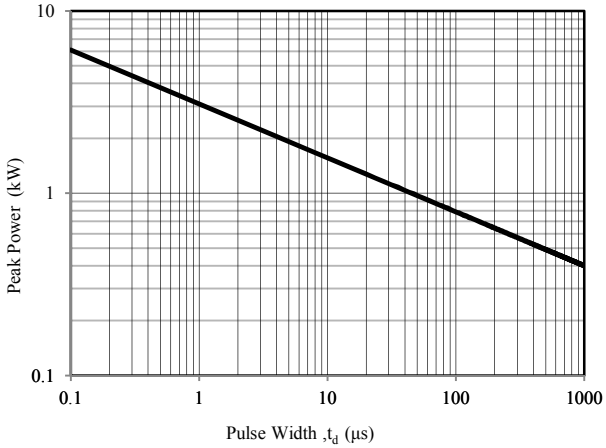


Fig. 4 - Peak Pulse Power Rating Curve

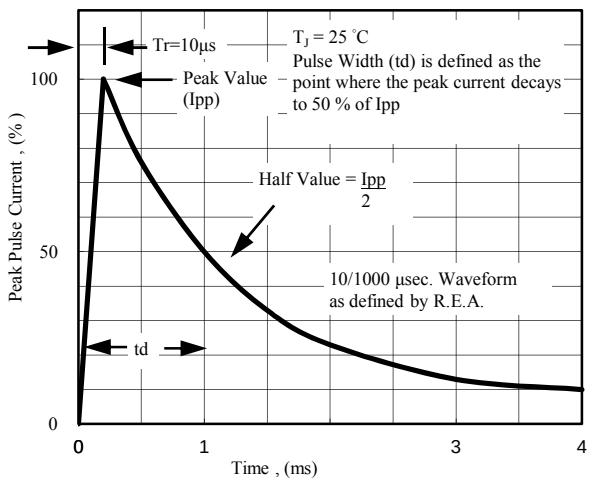


Fig. 5 - Pulse Waveform

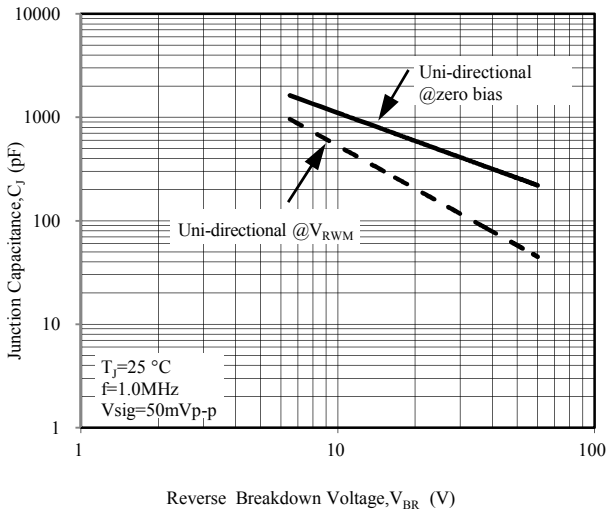


Fig. 6 - Typical Junction Capacitance

ORDER INFORMATION

• Packing information

Part Number	Case	Reel Size	QUANTITY
SM4F5.0A~SM4F170A	SOD-123FL	7 Inch	2500