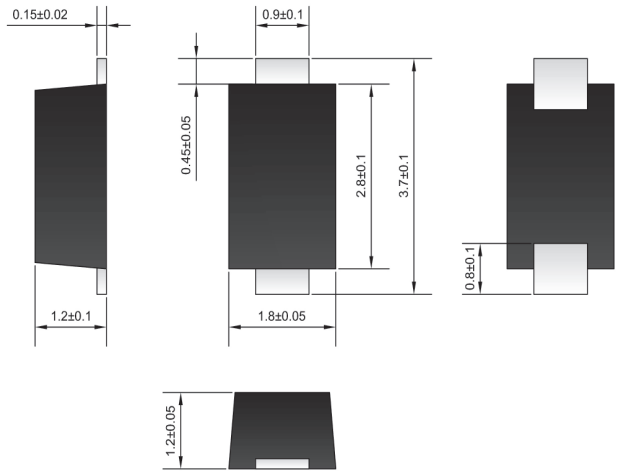
P4SMFL3.3A THRU P4SMFL64A

400W Surface Mount Transient Voltage Suppressors Ultra Low IR Type

■ Features

- Ultra Low leakage current.
- Very fast response time.
- Excellent clamping capability.
- 400W peak pulse power capility with a 10/1000us waveform, repetitive rate(duty cycle):0.01%.
- Uni and bidirectional unit.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Outline SOD-123FL

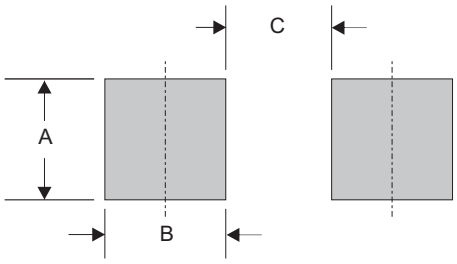


Dimensions in millimeters

■ Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-123FL
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : Approximated 0.010 gram

■ SOD-123FL foot print



A	B	C
0.028 (0.70)	0.028 (0.70)	0.091 (2.30)

Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	P4SMF Series	UNIT
Peak power dissipation	with a 10/1000 us waveform	P_{PP}	400	W
Power dissipation on infinite heatsonk	at T_L=75°C	P_D	0.8	W
Peak pulse current	with a 10/1000 us waveform	I_{PP}	See next table	A
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}	30	A
Maximum instantaneous forward voltage	at 25A for unidirectional only	V_F	2.5	V
Operating and Storage temperature		T_J, T_{STG}	-55 ~ +150	°C

Note 1. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

DEVICE TYPE	DEVICE MARKING CODE	BREAKDOWN VOLTAGE V_{BR} AT I_T (1) (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (µA) (3)	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} (A) (2)	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
		MIN.	MAX.					
P4SMFL3.3A	LAD	5.23	5.97	10	3.3	50	47	8.5
P4SMFL5.0A	LAE	6.43	6.97	10	5.0	20	43.5	9.2
P4SMFL6.0A	LAG	6.70	7.34	10	6.0	20	38.8	10.3
P4SMFL6.5A	LAK	7.25	7.95	10	6.5	15	35.7	11.2
P4SMFL7.0A	LAM	7.81	8.57	10	7.0	15	33.3	12
P4SMFL7.5A	LAN	8.36	9.18	1	7.5	10	31	12.9
P4SMFL8.0A	LAR	8.92	9.80	1	8.0	2	29.4	13.6
P4SMFL8.5A	LAS	9.47	10.37	1	8.5	2	27.8	14.4
P4SMFL9.0A	LAT	10.03	11.07	1	9.0	0.2	26	15.4
P4SMFL10A	LAU	11.13	12.27	1	10.0	0.2	23.5	17
P4SMFL11A	LAZ	12.23	13.47	1	11.0	0.2	22	18.2
P4SMFL12A	LBE	13.33	14.67	1	12.0	0.2	18.6	21.5
P4SMFL13A	LBG	14.43	15.87	1	13.0	0.1	43.5	9.2
P4SMFL14A	LBK	15.63	17.17	1	14.0	0.1	17.2	23.2
P4SMFL15A	LBM	16.73	18.29	1	15.0	0.1	13.4	24.4
P4SMFL16A	LBP	17.83	19.67	1	16.0	0.1	15.4	26
P4SMFL17A	LBR	18.93	20.87	1	17.0	0.1	14.5	27.6
P4SMFL18A	LBT	20.03	22.07	1	18.0	0.1	13.7	29.2
P4SMFL20A	LBV	22.23	24.47	1	20.0	0.1	12.3	32.4
P4SMFL22A	LBX	24.43	26.87	1	22.0	0.1	11.3	35.5
P4SMFL24A	LBZ	26.73	29.47	1	24.0	0.1	10.3	38.9
P4SMFL26A	LCE	28.93	31.87	1	26.0	0.1	9.5	42.1
P4SMFL28A	LCG	31.13	34.37	1	28.0	0.1	8.8	45.4
P4SMFL30A	LCK	33.33	36.77	1	30.0	0.1	8.3	48.4
P4SMFL33A	LCM	36.73	40.57	1	33.0	0.1	7.5	53.3
P4SMFLI36A	LCP	40.03	44.17	1	36.0	0.1	6.9	58.1
P4SMFL40A	LCR	44.4	49.1	1	40.0	0.1	6.2	64.5
P4SMFL43A	LCT	47.8	52.8	1	43.0	0.1	5.7	69.4
P4SMFL45A	LCV	50	55.3	1	45.0	0.1	5.5	72.7
P4SMFL48A	LCX	53.3	58.9	1	48.0	0.1	5.2	77.4
P4SMFL51A	LCZ	56.7	62.7	1	51.0	0.1	4.9	82.4
P4SMFL54A	LRE	60	66.3	1	54.0	0.1	4.6	87.1
P4SMFL58A	LRG	64.4	71.2	1	58.0	0.1	4.3	93.6
P4SMFL60A	LRK	66.7	73.7	1	60.0	0.1	4.1	96.8
P4SMFL64A	LRM	71.1	78.6	1	64.0	0.1	3.9	103

Notes

(1) V_{BR} measured after I_T applied for 300 µs, I_T = square wave pulse or equivalent

(2) Surge current waveform per fig. 3 and derate per fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE C62.35

■ Rating and characteristic curves

Fig.1 - Pulse Derating Curve

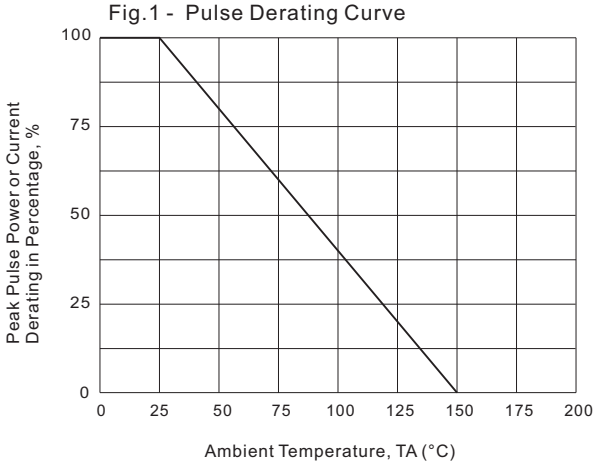


Fig.2 - Pulse Derating Curve

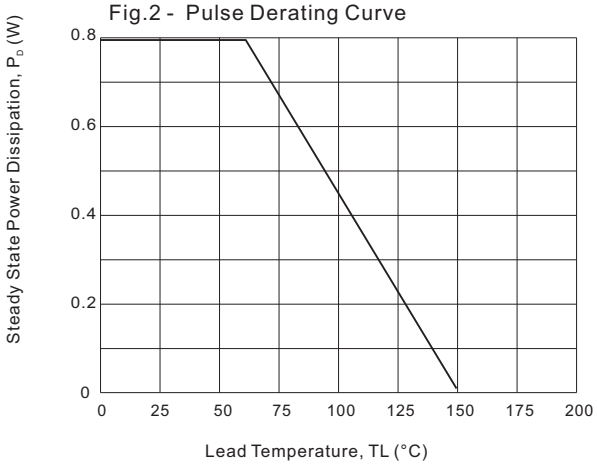


Fig.3 - Pulse Waveform

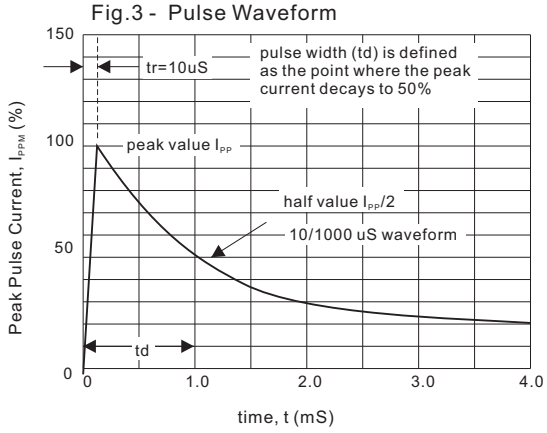


Fig.4 - Peak Pulse Power Rating Curve

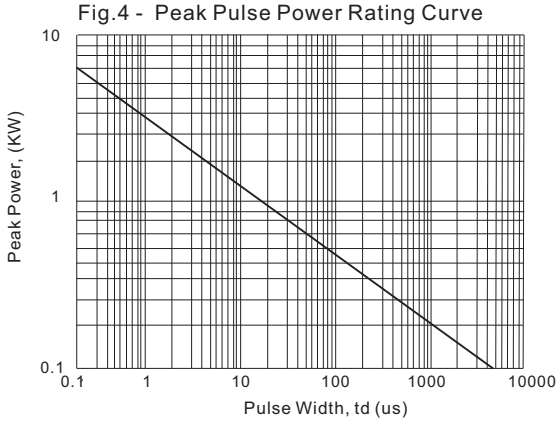


Fig.5 - Maximum Non-Repetitive
Forward Surge Current