



P4FL SERIES

Surface Mount Transient Voltage Suppressor

Features

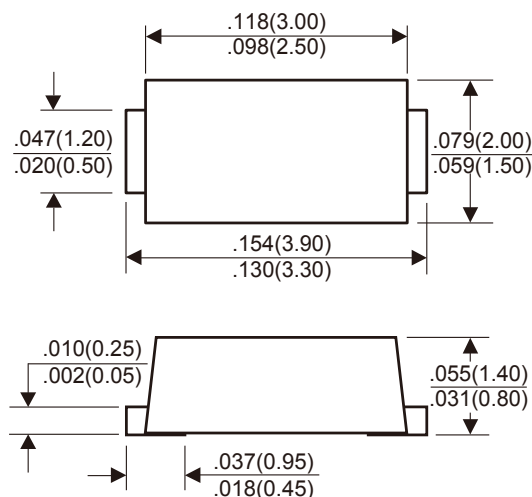
- ★ High reliability application and automotive grade AEC-Q101 qualified
- ★ 400W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycles):0.01%
- ★ Low leakage
- ★ Excellent clamping capability
- ★ Very fast response time
- ★ RoHS compliant
- ★ IEC 61000-4-2 ESD 30kV(Air), 30kV(Contact)
- ★ ESD protection of data lines in accordance with IEC 61000-4-2
- ★ EFT protection of data lines in accordance with IEC 61000-4-4

Mechanical Data

- ★ Case: Molded plastic, SOD-123FL
- ★ Epoxy: UL 94V-0 rate flame retardant
- ★ Terminals: Solderable per MIL-STD-750, method 2026
- ★ Polarity: Color band denotes cathode end
- ★ Part no. with suffix "-A" means AEC-Q101 qualified

Working Voltage 5.0 to 85 V
Peak Pulse Power 400W

SOD-123FL



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$ unless otherwise noted

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μ s waveform (Note 1,2)	P_{PPM}	400	W
Peak forward surge current, 8.3 ms single half sine-wave (Note 3)	I_{FSM}	30	A
Power dissipation on infinite heatsink at $T_L=50^\circ\text{C}$	P_D	1.0	W
Maximum instantaneous forward voltage at 25A for unidirectional only	V_F	3.5	V
Typical thermal resistance junction to ambient	$R_{\theta JA}$	220	$^\circ\text{C/W}$
Typical thermal resistance junction to lead	$R_{\theta JL}$	110	$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

NOTES : (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2
 (2) P4FL5.0A(CA)~P4FL9.0A(CA) Peak Pulse Power Dissipation is 370W min, 400W typical @10/1000 μ s
 (3) Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

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Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	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	Bi	Min (V)	Max (V)	I_T (mA)				
P4FL5.0A	P4FL5.0CA	AE	WE	6.40	7.00	10	800	5	40.1	9.2
P4FL6.0A	P4FL6.0CA	AG	WG	6.67	7.37	10	800	6	35.9	10.3
P4FL6.5A	P4FL6.5CA	AK	WK	7.22	7.98	10	500	6.5	33.1	11.2
P4FL7.0A	P4FL7.0CA	AM	WM	7.78	8.60	10	200	7	30.9	12.0
P4FL7.5A	P4FL7.5CA	AP	WP	8.33	9.21	1	100	7.5	28.7	12.9
P4FL8.0A	P4FL8.0CA	AR	WR	8.89	9.83	1	50	8	27.2	13.6
P4FL9.0A	P4FL9.0CA	AV	WV	10.0	11.1	1	5	9	26.4	15.4
P4FL10A	P4FL10CA	AX	WX	11.1	12.3	1	5	10	23.5	17.0
P4FL11A	P4FL11CA	AZ	WZ	12.2	13.5	1	1	11	22.0	18.2
P4FL12A	P4FL12CA	BE	XE	13.3	14.7	1	1	12	20.1	19.9
P4FL13A	P4FL13CA	BG	XG	14.4	15.9	1	1	13	18.6	21.5
P4FL14A	P4FL14CA	BK	XK	15.6	17.2	1	1	14	17.2	23.2
P4FL15A	P4FL15CA	BM	XM	16.7	18.5	1	1	15	16.4	24.4
P4FL16A		BP		17.8	19.7	1	1	16	15.4	26.0
P4FL17A		BR		18.9	20.9	1	1	17	14.5	27.6
P4FL18A	P4FL18CA	BT	XT	20.0	22.1	1	1	18	13.7	29.2
P4FL20A	P4FL20CA	BV	XV	22.2	24.5	1	1	20	12.3	32.4
P4FL22A	P4FL22CA	BX	XX	24.4	26.9	1	1	22	11.3	35.5
P4FL24A	P4FL24CA	BZ	XZ	26.7	29.5	1	1	24	10.3	38.9
P4FL26A	P4FL26CA	CE	YE	28.9	31.9	1	1	26	9.5	42.1
P4FL28A	P4FL28CA	CG	YG	31.1	34.4	1	1	28	8.8	45.4
P4FL30A	P4FL30CA	CK	YK	33.3	36.8	1	1	30	8.3	48.4
P4FL33A	P4FL33CA	CM	YM	36.7	40.6	1	1	33	7.5	53.3
P4FL36A	P4FL36CA	CP	YP	40.0	44.2	1	1	36	6.9	58.1
P4FL40A	P4FL40CA	CR	YR	44.4	49.1	1	1	40	6.2	64.5
P4FL43A	P4FL43CA	CT	YT	47.8	52.8	1	1	43	5.8	69.4
P4FL45A	P4FL45CA	CV	YV	50.0	55.3	1	1	45	5.5	72.7
P4FL48A	P4FL48CA	CX	YX	53.3	58.9	1	1	48	5.2	77.4
P4FL51A		CZ		56.7	62.7	1	1	51	4.9	82.4
P4FL54A		RE		60.0	66.3	1	1	54	4.6	87.1
P4FL58A		RG		64.4	71.2	1	1	58	4.3	93.6
P4FL60A		RK		66.7	73.7	1	1	60	4.1	96.8
P4FL64A		RM		71.1	78.6	1	1	64	3.9	103
P4FL70A		RP		77.8	86.0	1	1	70	3.5	113
P4FL75A		RR		83.3	92.1	1	1	75	3.3	121
P4FL78A		RT		86.7	95.8	1	1	78	3.2	126
P4FL85A		RV		94.4	104.0	1	1	85	2.9	137

For Bi-directional type having V_R of 10 volts and less, the I_R limit is double.

RATINGS AND CHARACTERISTICS CURVES P4FL SERIES

Fig.1 - Peak Pulse Power Rating Curve

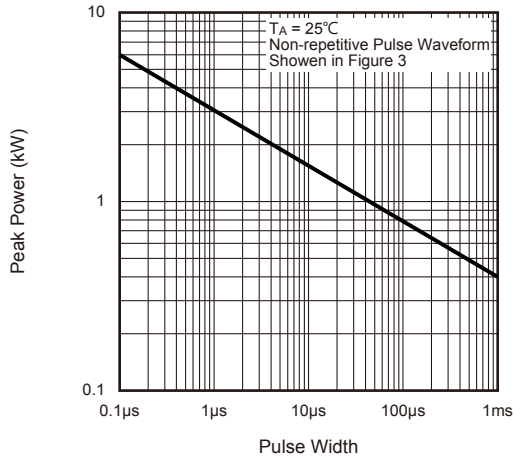


Fig.2 - Pulse Derating Curve

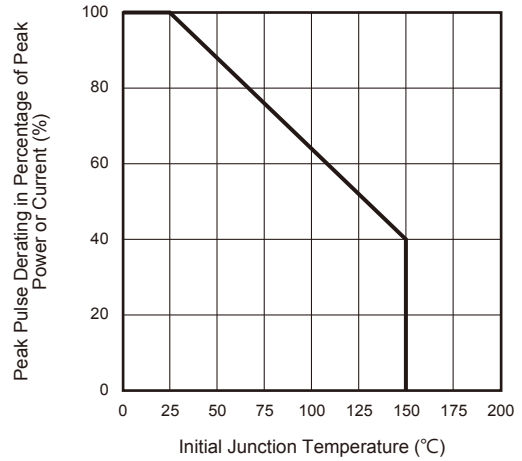


Fig.3 - Pulse Waveform

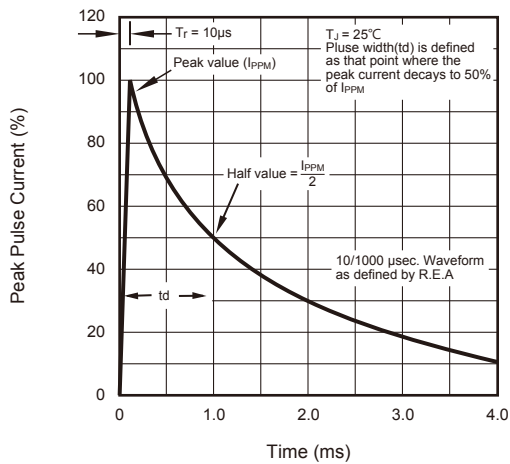


Fig.4 - Typical Junction Capacitance

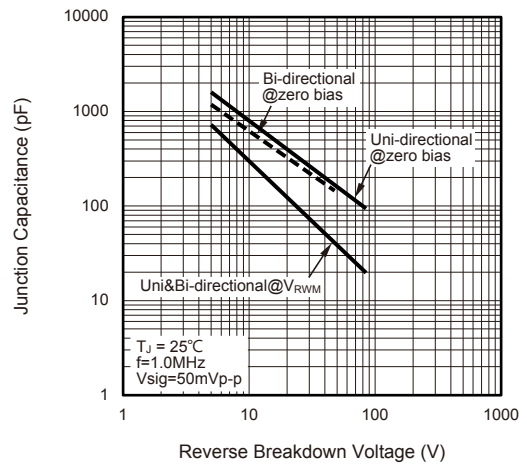


Fig.5 - Steady State Power Derating Curve

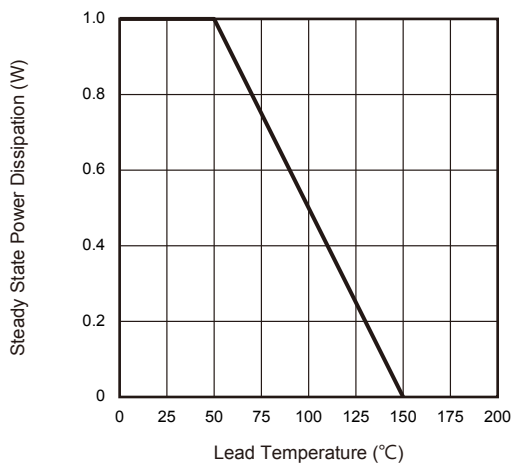


Fig.6 - Maximum Non-Repetitive Surge Current

