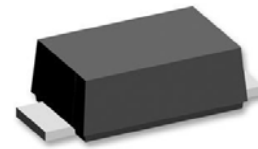


## Features

- Glass passivated chip
- 400 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard



SMF  
SOD-123FL



## Mechanical Data

- Case: SOD-123FL Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

## Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

## Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	PPP	400	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	IPP	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	P <sub>D</sub>	3.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only <sup>(2)</sup>	I <sub>FSM</sub>	40	A
Maximum instantaneous forward voltage at 15 A for unidirectional only <sup>(3)</sup>	V <sub>F</sub>	3.5/6.5	V
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

1) Non-repetitive current pulse per Fig.5 and derated above TA= 25 °C per Fig.1 ;

2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

3) VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR>201V.

## Electrical Characteristics

Part Number		Device Marking Code		Reverse Stand-off Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ @ $I_T$		Test Current $I_T$ (mA)	Max. Clamping Voltage @ $I_{PP}$ $V_C$ MAX (V)	Max. Peak Pulse Current $I_{PP}$ (A)	Max. Reverse Leakage @ $V_{RWM}$ $I_R$ (uA)
UNI-POLAR	BI-POLAR	UNI	BI		Min. (V)	Max. (V)				
P4SMFL5.0A	P4SMFL5.0CA	AE	WE	5.0	6.40	7.00	10	9.2	43.5	800
P4SMFL6.0A	P4SMFL6.0CA	AG	WG	6.0	6.67	7.37	10	10.3	38.8	800
P4SMFL6.5A	P4SMFL6.5CA	AK	WK	6.5	7.22	7.98	10	11.2	35.7	500
P4SMFL7.0A	P4SMFL7.0CA	AM	WM	7.0	7.78	8.60	10	12.0	33.3	200
P4SMFL7.5A	P4SMFL7.5CA	AP	WP	7.5	8.33	9.21	1	12.9	31.0	100
P4SMFL8.0A	P4SMFL8.0CA	AR	WR	8.0	8.89	9.83	1	13.6	29.4	50
P4SMFL8.5A	P4SMFL8.5CA	AT	WT	8.5	9.44	10.40	1	14.4	27.8	20
P4SMFL9.0A	P4SMFL9.0CA	AV	WV	9.0	10.00	11.10	1	15.4	26.0	10
P4SMFL10A	P4SMFL10CA	AX	WX	10.0	11.10	12.30	1	17.0	23.5	5
P4SMFL11A	P4SMFL11CA	AZ	WZ	11.0	12.20	13.50	1	18.2	22.0	1
P4SMFL12A	P4SMFL12CA	BE	XE	12.0	13.30	14.70	1	19.9	20.1	1
P4SMFL13A	P4SMFL13CA	BG	XG	13.0	14.40	15.90	1	21.5	18.6	1
P4SMFL14A	P4SMFL14CA	BK	XK	14.0	15.60	17.20	1	23.2	17.2	1
P4SMFL15A	P4SMFL15CA	BM	XM	15.0	16.70	18.50	1	24.4	16.4	1
P4SMFL16A	P4SMFL16CA	BP	XP	16.0	17.80	19.70	1	26.0	15.4	1
P4SMFL17A	P4SMFL17CA	BR	XR	17.0	18.90	20.90	1	27.6	14.5	1
P4SMFL18A	P4SMFL18CA	BT	XT	18.0	20.00	22.10	1	29.2	13.7	1
P4SMFL20A	P4SMFL20CA	BV	XV	20.0	22.20	24.50	1	32.4	12.3	1
P4SMFL22A	P4SMFL22CA	BX	XX	22.0	24.40	26.90	1	35.5	11.3	1
P4SMFL24A	P4SMFL24CA	BZ	XZ	24.0	26.70	29.50	1	38.9	10.3	1
P4SMFL26A	P4SMFL26CA	CE	YE	26.0	28.90	31.90	1	42.1	9.5	1
P4SMFL28A	P4SMFL28CA	CG	YG	28.0	31.10	34.40	1	45.4	8.8	1
P4SMFL30A	P4SMFL30CA	CK	YK	30.0	33.50	36.80	1	48.4	8.3	1
P4SMFL33A	P4SMFL33CA	CM	YM	33.0	36.70	40.60	1	53.3	7.5	1
P4SMFL36A	P4SMFL36CA	CP	YP	36.0	40.00	44.20	1	58.1	6.9	1
P4SMFL40A	P4SMFL40CA	CR	YR	40.0	44.40	49.10	1	64.5	6.2	1
P4SMFL43A	P4SMFL43CA	CT	YT	43.0	47.80	52.80	1	69.4	5.8	1
P4SMFL45A	P4SMFL45CA	CV	YV	45.0	50.00	55.30	1	72.7	5.5	1
P4SMFL48A	P4SMFL48CA	CX	YX	48.0	53.30	58.90	1	77.4	5.2	1
P4SMFL51A	P4SMFL51CA	CZ	YZ	51.0	56.70	62.70	1	82.4	4.9	1
P4SMFL54A	P4SMFL54CA	RE	ZE	54.0	60.00	66.30	1	87.1	4.6	1
P4SMFL58A	P4SMFL58CA	RG	ZG	58.0	64.40	71.20	1	93.6	4.3	1
P4SMFL60A	P4SMFL60CA	RK	ZK	60.0	66.70	73.70	1	96.8	4.1	1
P4SMFL64A	P4SMFL64CA	RM	ZM	64.0	71.10	78.60	1	103.0	3.9	1
P4SMFL70A	P4SMFL70CA	RP	ZP	70.0	77.80	86.00	1	113.0	3.5	1
P4SMFL75A	P4SMFL75CA	RR	ZR	75.0	83.30	92.10	1	121.0	3.3	1
P4SMFL78A	P4SMFL78CA	RT	ZT	78.0	86.70	95.80	1	126.0	3.2	1
P4SMFL85A	P4SMFL85CA	RV	ZV	85.0	94.40	104.0	1	137.0	2.9	1
P4SMFL90A	P4SMFL90CA	RX	ZX	90.0	100.00	111.0	1	146.0	2.7	1
P4SMFL100A	P4SMFL100CA	RZ	ZZ	100.0	111.00	123.0	1	162.0	2.5	1
P4SMFL110A	P4SMFL110CA	SE	VE	110.0	122.00	135.0	1	177.0	2.3	1
P4SMFL120A	P4SMFL120CA	SG	VG	120.0	133.00	147.0	1	193.0	2.1	1
P4SMFL130A	P4SMFL130CA	SK	VK	130.0	144.00	159.0	1	209.0	1.9	1
P4SMFL150A	P4SMFL150CA	SM	VM	150.0	167.00	185.0	1	243.0	1.6	1
P4SMFL160A	P4SMFL160CA	SP	VP	160.0	178.00	197.0	1	259.0	1.5	1
P4SMFL170A	P4SMFL170CA	SR	VR	170.0	189.00	209.0	1	275.0	1.5	1
P4SMFL180A		ST		180.0	201.00	222.0	1	292.0	1.4	1
P4SMFL190A		SU		190.0	209.00	243.0	1	308.0	1.3	1
P4SMFL200A		SV		200.0	224.00	247.0	1	324.0	1.2	1
P4SMFL210A		SW		210.0	231.00	268.0	1	340.0	1.2	1
P4SMFL220A		GX		220.0	246.00	272.0	1	356.0	1.1	1

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)

Fig. 1 - Pulse Derating Curve

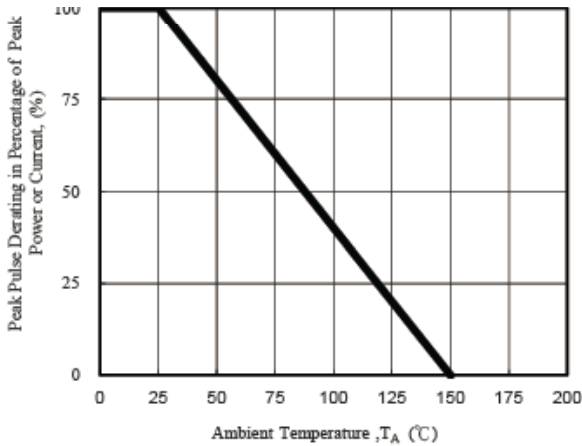


Fig. 2 - Maximum Non-Repetitive Surge Current

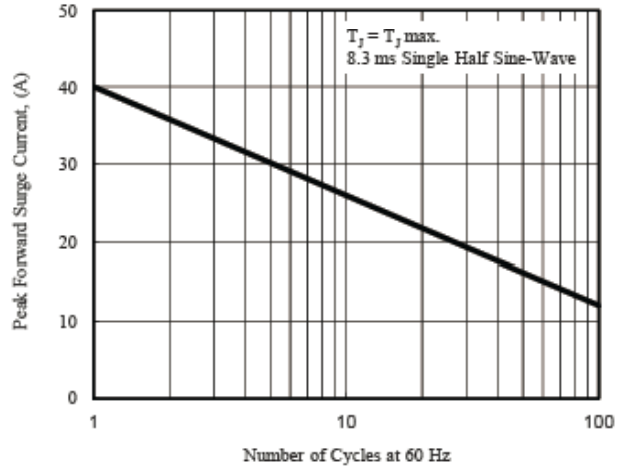


Fig. 3 - Steady State Power Derating Curve

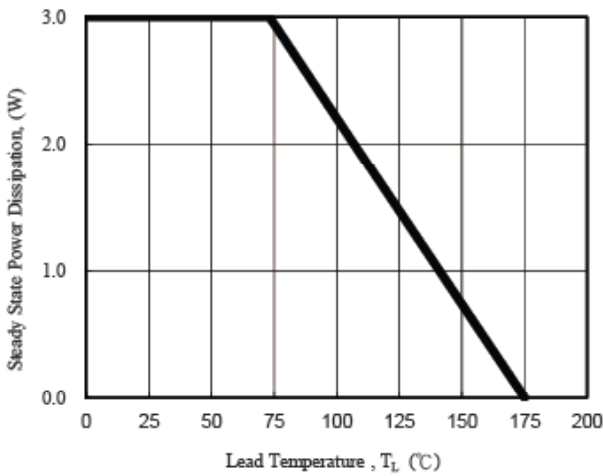


Fig. 4 - Peak Pulse Power Rating Curve

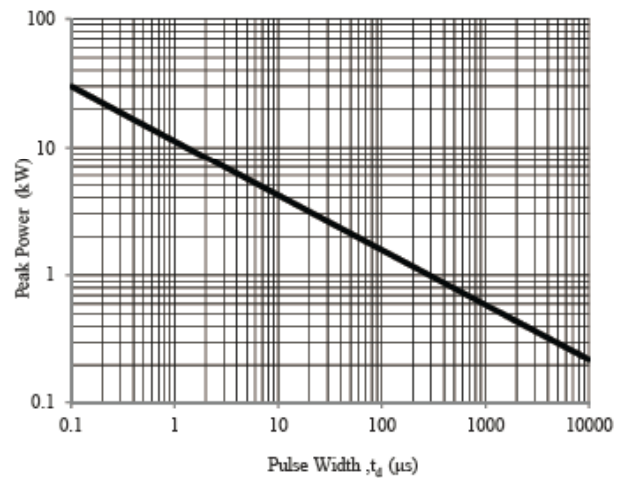


Fig. 5 - Pulse Waveform

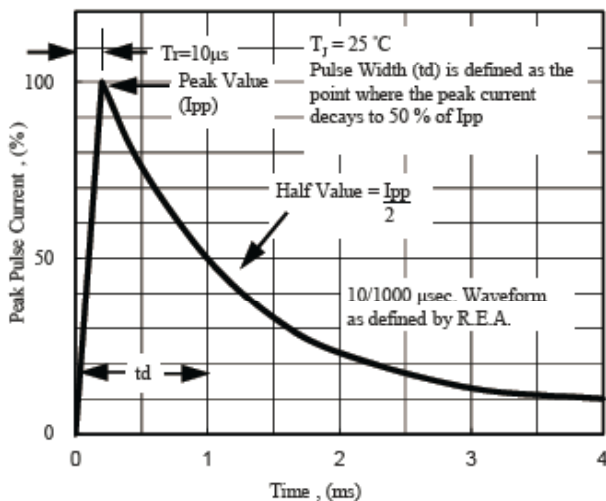
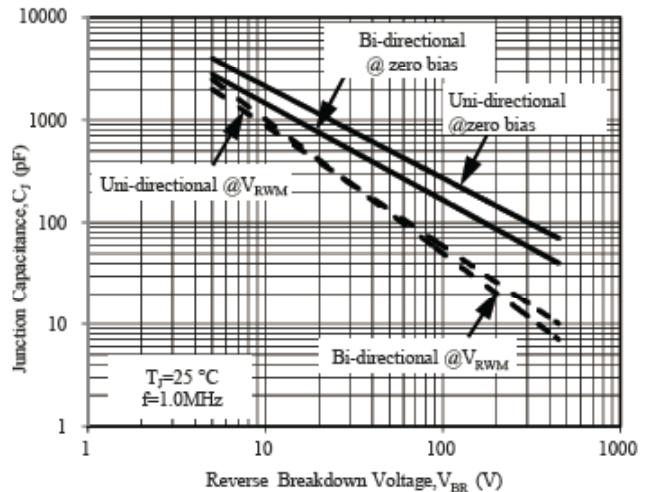
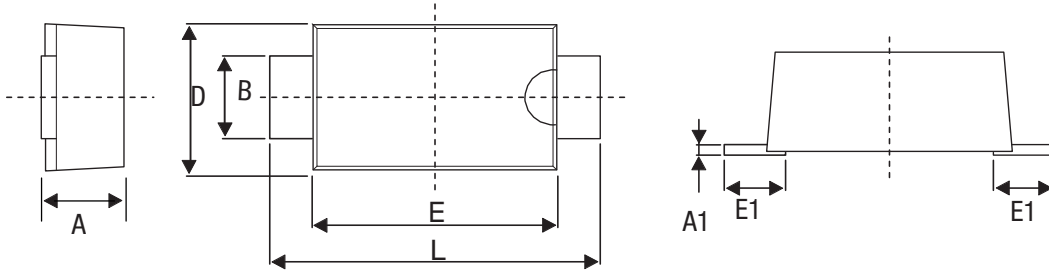


Fig. 6 - Typical Junction Capacitance



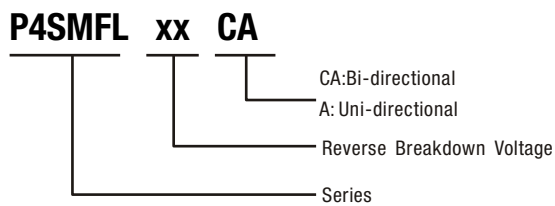
**Dimension** (Unit: mm)



A		A1		B		E		E1		D		L	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1.200	1.400	0.150	0.250	0.800	1.100	2.700	2.900	0.350	0.850	1.750	1.950	3.500	3.900

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