Working Voltage: 5.0 to 190 V

Peak Pulse Power: 200 W

Features

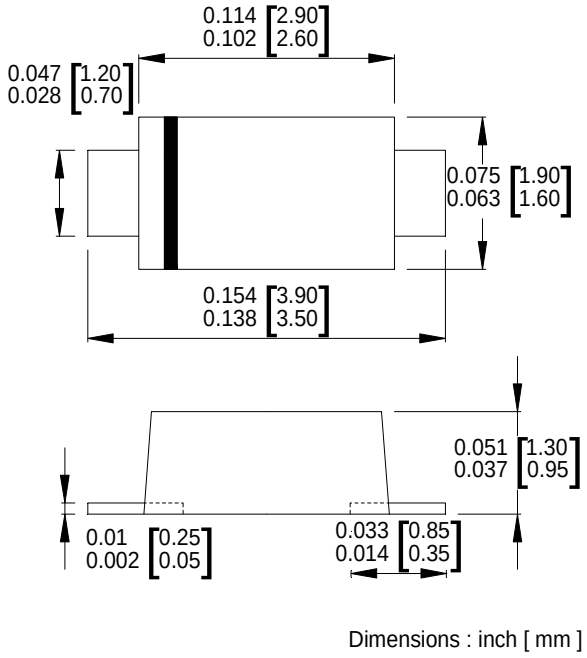
- Glass passivated chip
- 200 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Mechanical Data

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

Surface Mount

SOD-123



Dimensions : inch [mm]

Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	UNIT
Peak power dissipation with a 10/1000μs waveform(1)	P_{PP}	200	W
Peak power dissipation with a 8/20μs waveform(1)	P_{PP}	1000	W
Peak pulse current wih a 10/1000μs waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at T_L = 75 °C	P_D	0.4	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(2)	I_{FSM}	20	A
Maximum instantaneous forward voltage at 25 A for unidirectional only	V_F	3.5	V
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +150	°C

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above T_A= 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

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

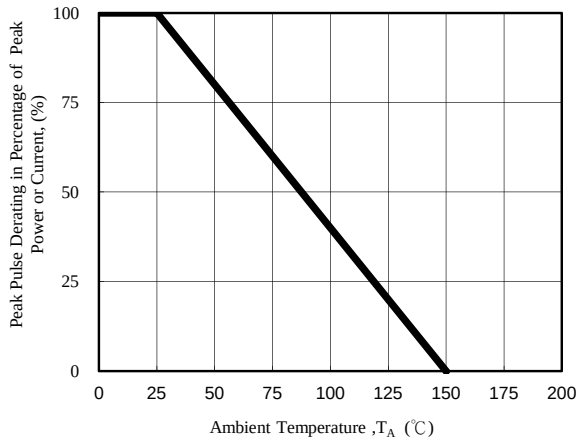


Fig. 1 - Pulse Derating Curve

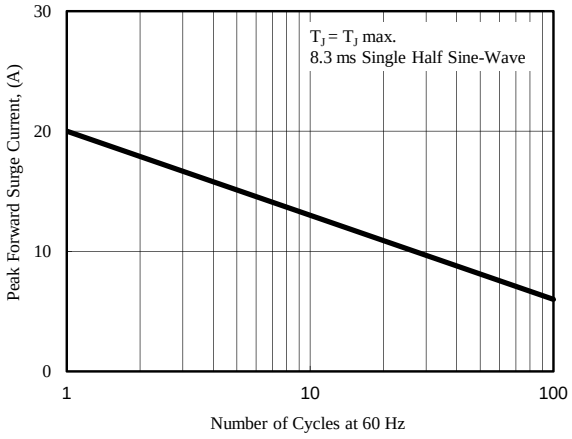


Fig. 2 - Maximum Non-Repetitive Surge Current

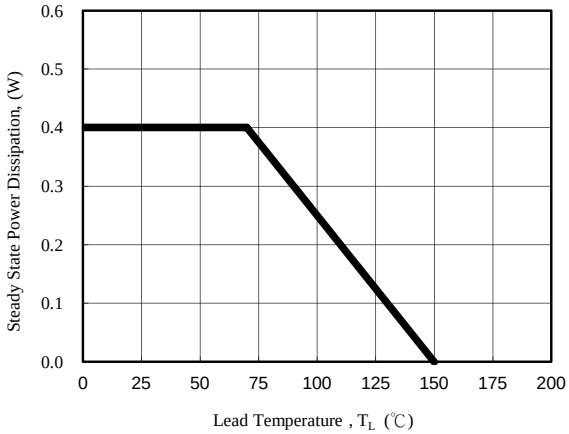


Fig. 3 - Steady State Power Derating Curve

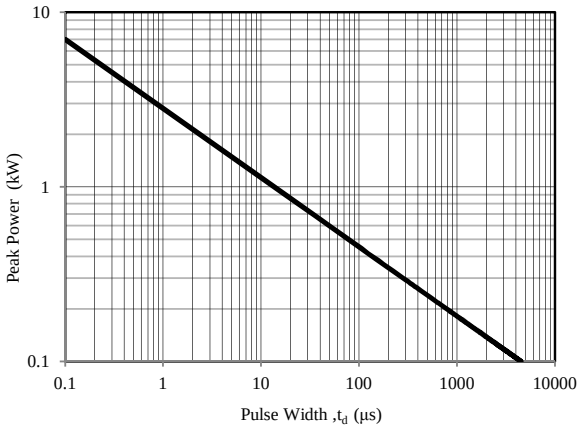


Fig. 4 - Peak Pulse Power Rating Curve

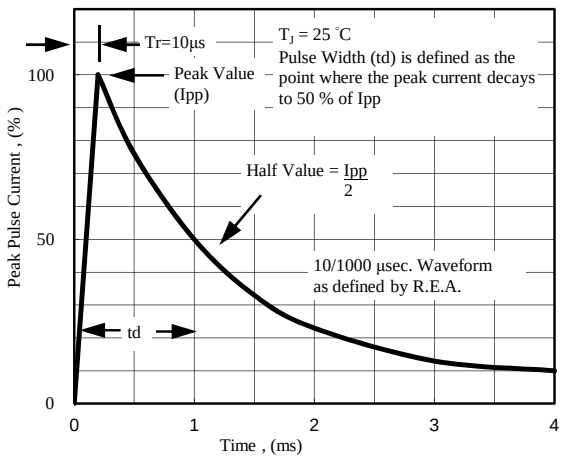


Fig. 5 - Pulse Waveform

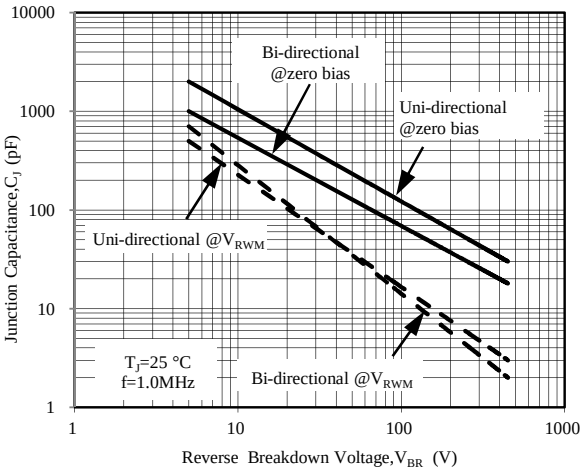


Fig. 6 - Typical Junction Capacitance

Electrical Characteristics(T_A=25℃ 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} (uA)	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)				
TSMF5.0A	TSMF5.0CA	FE	KE	6.40	7.00	10	400	5.0	21.74	9.2
TSMF6.0A	TSMF6.0CA	FG	KG	6.67	7.37	10	400	6.0	19.42	10.3
TSMF6.5A	TSMF6.5CA	FK	KK	7.22	7.98	10	250	6.5	17.86	11.2
TSMF7.0A	TSMF7.0CA	FM	KM	7.78	8.60	10	100	7.0	16.67	12.0
TSMF7.5A	TSMF7.5CA	FP	KP	8.33	9.21	1	50	7.5	15.50	12.9
TSMF8.0A	TSMF8.0CA	FR	KR	8.89	9.83	1	25	8.0	14.71	13.6
TSMF8.5A	TSMF8.5CA	FT	KT	9.44	10.40	1	10	8.5	13.89	14.4
TSMF9.0A	TSMF9.0CA	FV	KV	10.00	11.10	1	5	9.0	12.99	15.4
TSMF10A	TSMF10CA	FX	KX	11.10	12.30	1	2.5	10.0	11.76	17.0
TSMF11A	TSMF11CA	FZ	KZ	12.20	13.50	1	2.5	11.0	10.99	18.2
TSMF12A	TSMF12CA	HE	LE	13.30	14.70	1	2.5	12.0	10.05	19.9
TSMF13A	TSMF13CA	HG	LG	14.40	15.90	1	1	13.0	9.30	21.5
TSMF14A	TSMF14CA	HK	LK	15.60	17.20	1	1	14.0	8.62	23.2
TSMF15A	TSMF15CA	HM	LM	16.70	18.50	1	1	15.0	8.20	24.4
TSMF16A	TSMF16CA	HP	LP	17.80	19.70	1	1	16.0	7.69	26.0
TSMF17A	TSMF17CA	HR	LR	18.90	20.90	1	1	17.0	7.25	27.6
TSMF18A	TSMF18CA	HT	LT	20.00	22.10	1	1	18.0	6.85	29.2
TSMF19A	TSMF19CA	HB	LB	21.10	23.30	1	1	19.0	6.54	30.6
TSMF20A	TSMF20CA	HV	LV	22.20	24.50	1	1	20.0	6.17	32.4
TSMF22A	TSMF22CA	HX	LX	24.40	26.90	1	1	22.0	5.63	35.5
TSMF24A	TSMF24CA	HZ	LZ	26.70	29.50	1	1	24.0	5.14	38.9
TSMF26A	TSMF26CA	JE	ME	28.90	31.90	1	1	26.0	4.75	42.1
TSMF28A	TSMF28CA	JG	MG	31.10	34.40	1	1	28.0	4.41	45.4
TSMF30A	TSMF30CA	JK	MK	33.30	36.80	1	1	30.0	4.13	48.4
TSMF33A	TSMF33CA	JM	MM	36.70	40.60	1	1	33.0	3.75	53.3
TSMF36A	TSMF36CA	JP	MP	40.00	44.20	1	1	36.0	3.44	58.1
TSMF40A	TSMF40CA	JR	MR	44.40	49.10	1	1	40.0	3.10	64.5
TSMF43A	TSMF43CA	JT	MT	47.80	52.80	1	1	43.0	2.88	69.4
TSMF45A	TSMF45CA	JV	MV	50.00	55.30	1	1	45.0	2.75	72.7
TSMF48A	TSMF48CA	JX	MX	53.30	58.90	1	1	48.0	2.58	77.4
TSMF51A	TSMF51CA	JZ	MZ	56.70	62.70	1	1	51.0	2.43	82.4
TSMF54A	TSMF54CA	XE	NE	60.00	66.30	1	1	54.0	2.30	87.1
TSMF58A	TSMF58CA	XG	NG	64.40	71.20	1	1	58.0	2.14	93.6
TSMF60A	TSMF60CA	XK	NK	66.70	73.70	1	1	60.0	2.07	96.8
TSMF64A	TSMF64CA	XM	NM	71.10	78.60	1	1	64.0	1.94	103.0
TSMF70A	TSMF70CA	XP	NP	77.80	86.00	1	1	70.0	1.77	113.0
TSMF75A	TSMF75CA	XR	NR	83.30	92.10	1	1	75.0	1.65	121.0
TSMF78A	TSMF78CA	XT	NT	86.70	95.80	1	1	78.0	1.59	126.0
TSMF80A	TSMF80CA	XB	NB	88.80	97.60	1	1	80.0	1.55	129.0
TSMF85A	TSMF85CA	XV	NV	94.40	104.00	1	1	85.0	1.46	137.0
TSMF90A	TSMF90CA	XX	NX	100.00	111.00	1	1	90.0	1.37	146.0
TSMF100A	TSMF100CA	XZ	NZ	111.00	123.00	1	1	100.0	1.23	162.0
TSMF110A	TSMF110CA	TE	PE	122.00	135.00	1	1	110.0	1.13	177.0
TSMF120A	TSMF120CA	TG	PG	133.00	147.00	1	1	120.0	1.04	193.0
TSMF130A	TSMF130CA	TK	PK	144.00	159.00	1	1	130.0	0.96	209.0
TSMF140A	TSMF140CA	TB	PB	155.00	171.00	1	1	140.0	0.89	224.0
TSMF150A	TSMF150CA	TM	PM	167.00	185.00	1	1	150.0	0.82	243.0
TSMF160A	TSMF160CA	TP	PP	178.00	197.00	1	1	160.0	0.77	259.0
TSMF170A	TSMF170CA	TR	PR	189.00	209.00	1	1	170.0	0.73	275.0
TSMF180A	TSMF180CA	TT	PT	200.00	220.00	1	1	180.0	0.68	292.0
TSMF190A	TSMF190CA	TV	PV	211.00	232.00	1	1	190.0	0.65	308.0
TSMF200A	TSMF200CA	TX	PX	224.00	247.00	1	1	200.0	0.62	324.0
TSMF220A	TSMF220CA	TZ	PZ	246.00	272.00	1	1	220.0	0.56	356.0

Note:

1. The available parts are "A" type only,the parts without A(V_{BR} is ±10%) is not available
2. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices
3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double