

Surface Mount Transient Voltage Suppressor Rectifiers

Reverse Voltage 5.0 ~ 440 V

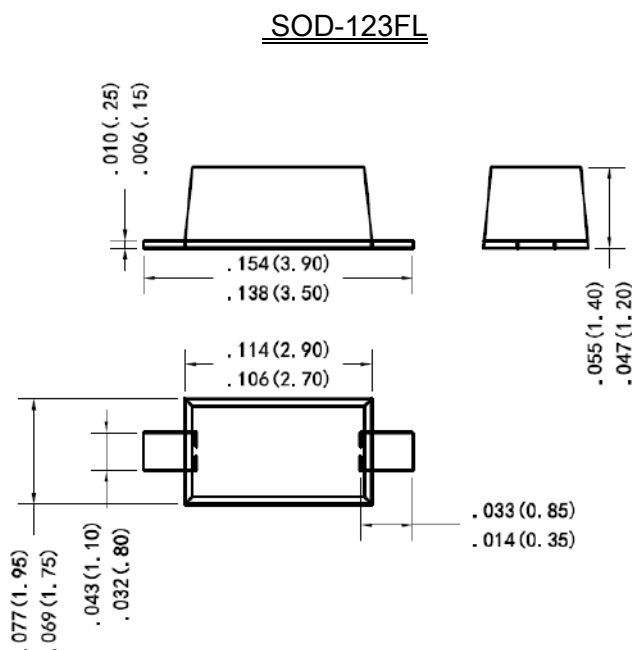
200 Watt Peak Pulse Power

Features

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

Mechanical Data

- Case: SOD-123FL Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- System: Accreditation through IATF16949 System
- High reliability grade (AEC Q101 qualified)
- Mounting position: Any



Unit: inch (mm)

Maximum Ratings & Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform ⁽¹⁾	P _{PP}	200	W
Peak pulse current with a 10/1000 us waveform ⁽¹⁾	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at TL = 75 °C	P _D	1.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only ⁽²⁾	I _{FSM}	30	A
Maximum instantaneous forward voltage at 10 A for unidirectional only ⁽³⁾	V _F	3.5/6.5	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 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)V_F<3.5V for devices of VBR<200V and V_F<6.5V for devices of VBR>201V.

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage $V_{BR} @ I_T$		Test Current	Max. Clamping Voltage @ I_{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V_{RWM}
UNI-POLAR	BI-POLAR	UNI	BI	$V_{RWM}(V)$	Min.(V)	Max.(V)	$I_T(mA)$	$V_{C MAX.}(V)$	$I_{PP}(A)$	$I_R(\mu A)$
TSMF5.0A	TSMF5.0CA	KE	AE	5.0	6.40	7.00	10	9.2	21.74	800
TSMF6.0A	TSMF6.0CA	KG	AG	6.0	6.67	7.37	10	10.3	19.42	800
TSMF6.5A	TSMF6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	17.86	500
TSMF7.0A	TSMF7.0CA	KM	AM	7.0	7.78	8.60	10	12.0	16.67	200
TSMF7.5A	TSMF7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	15.50	100
TSMF8.0A	TSMF8.0CA	KR	AR	8.0	8.89	9.83	1	13.6	14.71	50
TSMF8.5A	TSMF8.5CA	KT	AT	8.5	9.44	10.40	1	14.4	13.89	20
TSMF9.0A	TSMF9.0CA	KV	AV	9.0	10.00	11.10	1	15.4	12.99	10
TSMF10A	TSMF10CA	KX	AX	10.0	11.10	12.30	1	17.0	11.76	5
TSMF11A	TSMF11CA	KZ	AZ	11.0	12.20	13.50	1	18.2	10.99	1
TSMF12A	TSMF12CA	LE	BE	12.0	13.30	14.70	1	19.9	10.05	1
TSMF13A	TSMF13CA	LG	BG	13.0	14.40	15.90	1	21.5	9.30	1
TSMF14A	TSMF14CA	LK	BK	14.0	15.60	17.20	1	23.2	8.62	1
TSMF15A	TSMF15CA	LM	BM	15.0	16.70	18.50	1	24.4	8.20	1
TSMF16A	TSMF16CA	LP	BP	16.0	17.80	19.70	1	26.0	7.69	1
TSMF17A	TSMF17CA	LR	BR	17.0	18.90	20.90	1	27.6	7.25	1
TSMF18A	TSMF18CA	LT	BT	18.0	20.00	22.10	1	29.2	6.85	1
TSMF20A	TSMF20CA	LV	BV	20.0	22.20	24.50	1	32.4	6.17	1
TSMF22A	TSMF22CA	LX	BX	22.0	24.40	26.90	1	35.5	5.63	1
TSMF24A	TSMF24CA	LZ	BZ	24.0	26.70	29.50	1	38.9	5.14	1
TSMF26A	TSMF26CA	ME	CE	26.0	28.90	31.90	1	42.1	4.75	1
TSMF28A	TSMF28CA	MG	CG	28.0	31.10	34.40	1	45.4	4.41	1
TSMF30A	TSMF30CA	MK	CK	30.0	33.50	36.80	1	48.4	4.13	1
TSMF33A	TSMF33CA	MM	CM	33.0	36.70	40.60	1	53.3	3.75	1
TSMF36A	TSMF36CA	MP	CP	36.0	40.00	44.20	1	58.1	3.44	1
TSMF40A	TSMF40CA	MR	CR	40.0	44.40	49.10	1	64.5	3.10	1
TSMF43A	TSMF43CA	MT	CT	43.0	47.80	52.80	1	69.4	2.88	1
TSMF45A	TSMF45CA	MV	CV	45.0	50.00	55.30	1	72.7	2.75	1
TSMF48A	TSMF48CA	MX	CX	48.0	53.30	58.90	1	77.4	2.58	1
TSMF51A	TSMF51CA	MZ	CZ	51.0	56.70	62.70	1	82.4	2.43	1
TSMF54A	TSMF54CA	NE	DE	54.0	60.00	66.30	1	87.1	2.30	1
TSMF58A	TSMF58CA	NG	DG	58.0	64.40	71.20	1	93.6	2.14	1
TSMF60A	TSMF60CA	NK	DK	60.0	66.70	73.70	1	96.8	2.07	1
TSMF64A	TSMF64CA	NM	DM	64.0	71.10	78.60	1	103.0	1.94	1
TSMF70A	TSMF70CA	NP	DP	70.0	77.80	86.00	1	113.0	1.77	1
TSMF75A	TSMF75CA	NR	DR	75.0	83.30	92.10	1	121.0	1.65	1
TSMF78A	TSMF78CA	NT	DT	78.0	86.70	95.80	1	126.0	1.59	1
TSMF85A	TSMF85CA	NV	DV	85.0	94.4	104.0	1	137.0	1.46	1
TSMF90A	TSMF90CA	NX	DX	90.0	100.0	111.0	1	146.0	1.37	1
TSMF100A	TSMF100CA	NZ	DZ	100.0	111.0	123.0	1	162.0	1.23	1
TSMF110A	TSMF110CA	PE	EE	110.0	122.0	135.0	1	177.0	1.13	1
TSMF120A	TSMF120CA	PG	EG	120.0	133.0	147.0	1	193.0	1.04	1
TSMF130A	TSMF130CA	PK	EK	130.0	144.0	159.0	1	209.0	0.96	1
TSMF150A	TSMF150CA	PM	EM	150.0	167.0	185.0	1	243.0	0.82	1
TSMF160A	TSMF160CA	PP	EP	160.0	178.0	197.0	1	259.0	0.77	1
TSMF170A	TSMF170CA	PR	ER	170.0	189.0	209.0	1	275.0	0.73	1
TSMF180A	TSMF180CA	PT	ET	180.0	201.0	222.0	1	292.0	0.68	1
TSMF190A	TSMF190CA	PV	EV	190.0	209.0	243.0	1	308.0	0.65	1
TSMF200A	TSMF200CA	PX	EX	200.0	224.0	247.0	1	324.0	0.62	1
TSMF210A	TSMF210CA	PZ	EZ	210.0	231.0	268.0	1	340.0	0.59	1
TSMF220A	TSMF220CA	QE	FE	220.0	246.0	272.0	1	356.0	0.56	1
TSMF250A	TSMF250CA	QG	FG	250.0	279.0	309.0	1	405.0	0.49	1
TSMF300A		QK		300.0	335.0	371.0	1	486.0	0.41	1
TSMF350A		QM		350.0	391.0	432.0	1	567.0	0.35	1
TSMF400A		QP		400.0	447.0	494.0	1	648.0	0.31	1
TSMF440A		QR		440.0	492.0	543.0	1	713.0	0.28	1

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

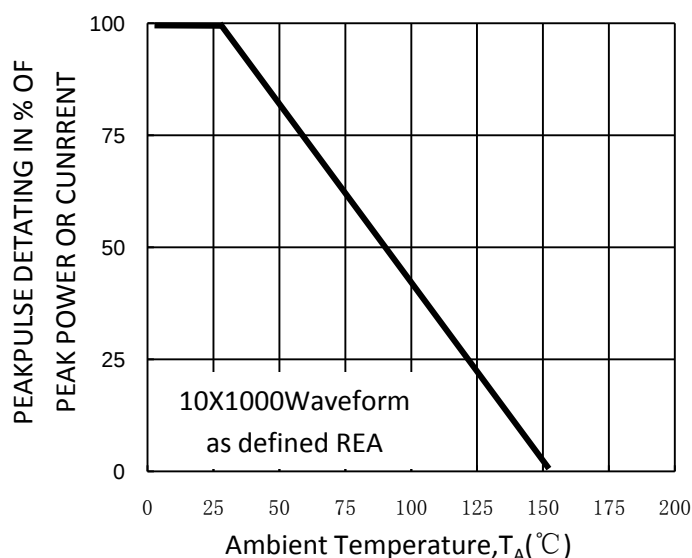


Fig. 1-Pulse Derating Curve

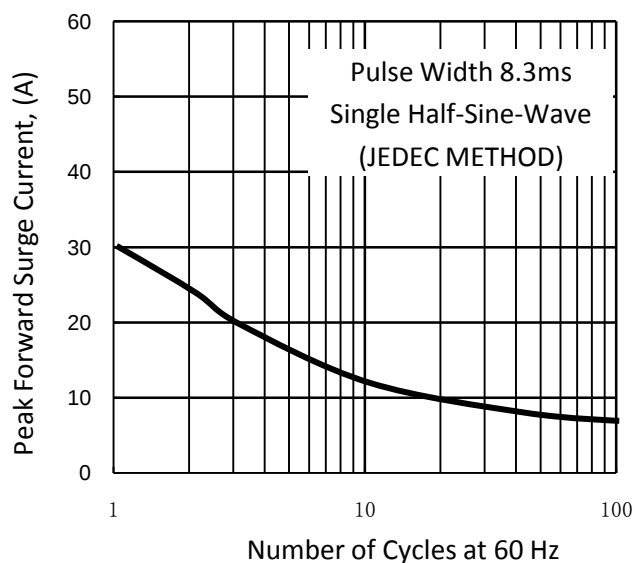


Fig. 2-Maximum Non-Repetitive Surge Current

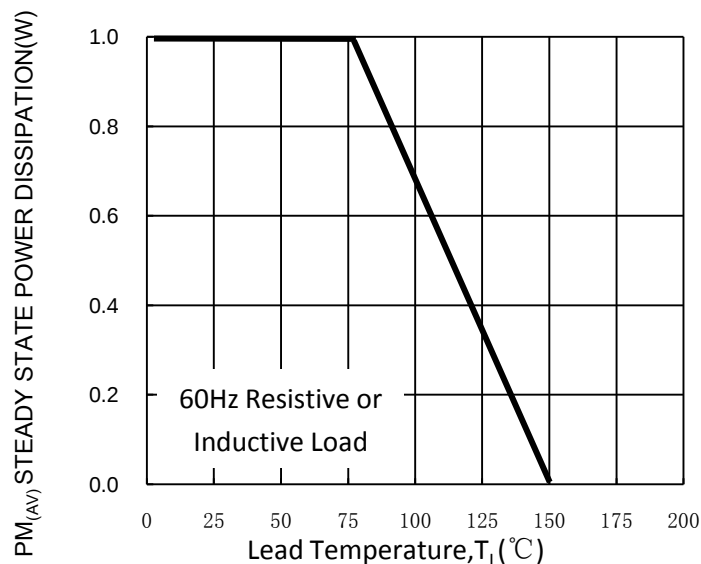


Fig. 3-Steady State Power Derating Curve

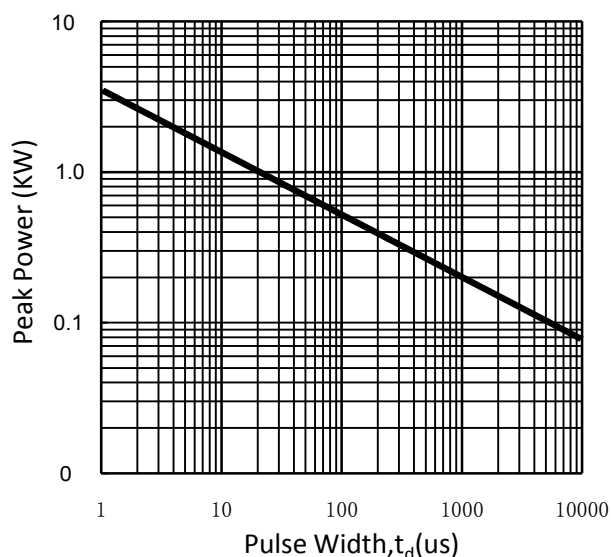


Fig. 4-Peak Pulse Power Rating Curve

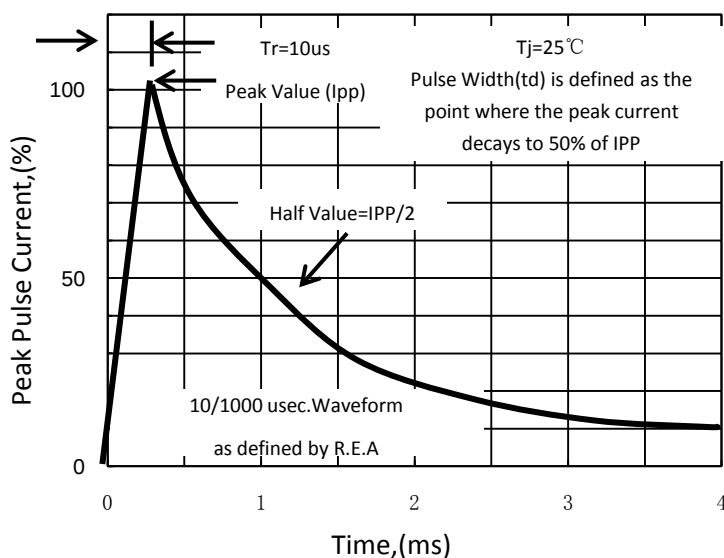


Fig. 5-Pulse Waveform

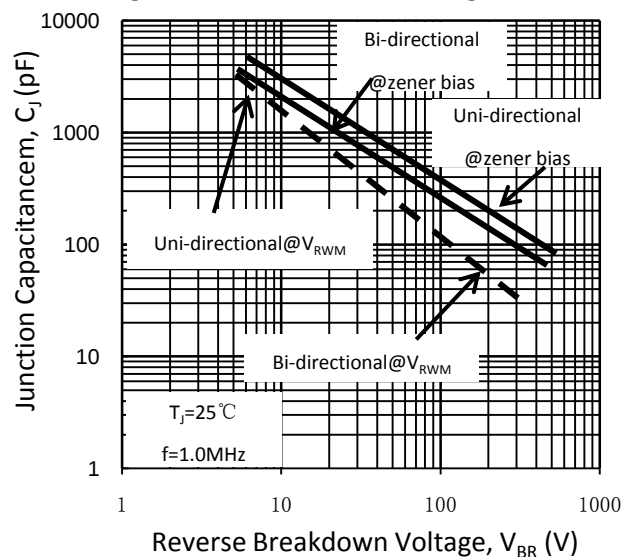


Fig. 6-Typical Junction Capacitance