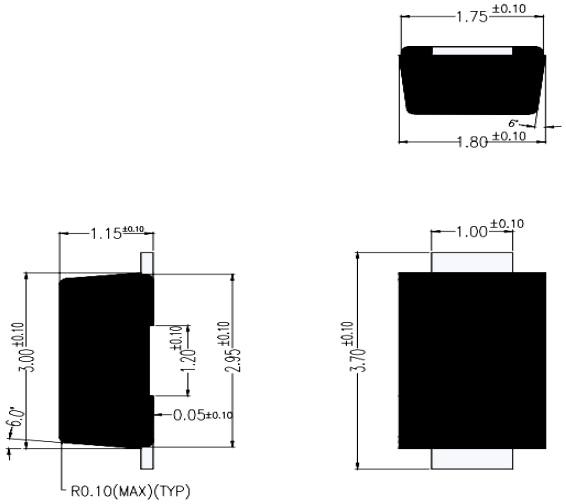
Working Voltage: 5.0 to 350 V
Peak Pulse Power: 200 W

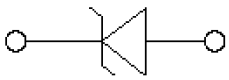
Surface Mount Transient Voltage Suppressors

SOD-123FL

Unit : inch(mm)



Uni-directional



Bi-directional

Features

- Glass passivated chip
- 200 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- AEC-Q101 qualified
- 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

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)

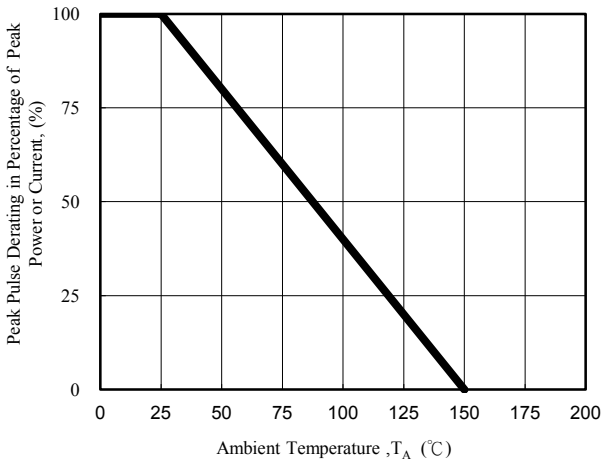


Fig. 1 - Pulse Derating Curve

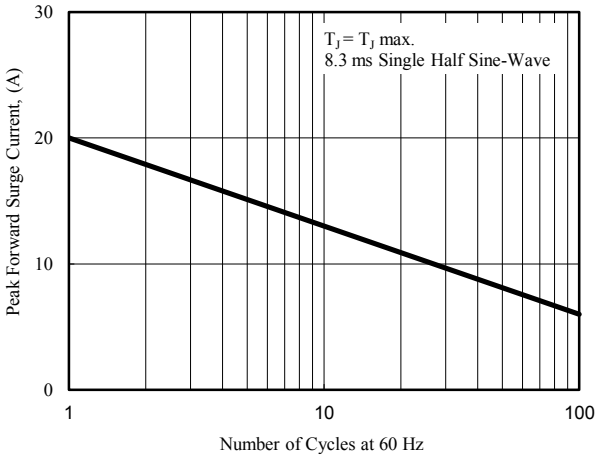


Fig. 2 - Maximum Non-Repetitive Surge Current

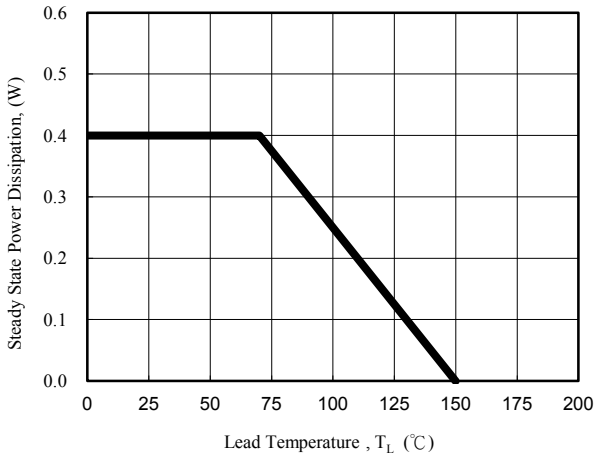


Fig. 3 - Steady State Power Derating Curve

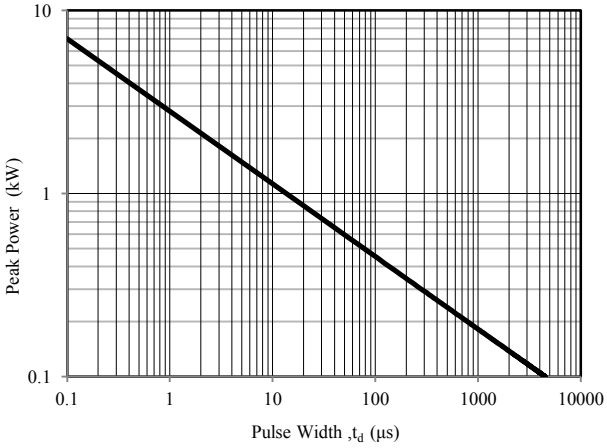


Fig. 4 - Peak Pulse Power Rating Curve

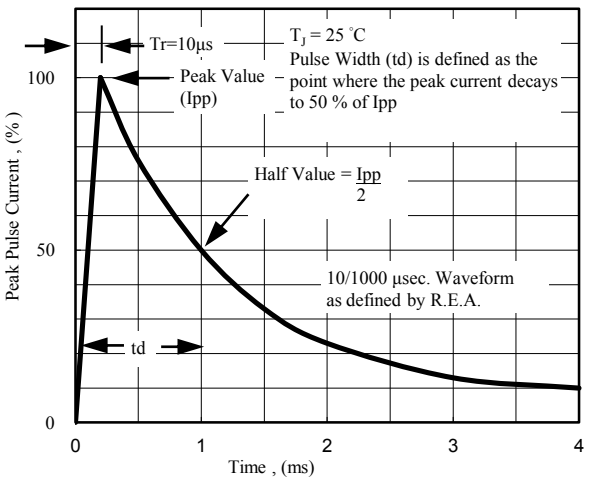


Fig. 5 - Pulse Waveform

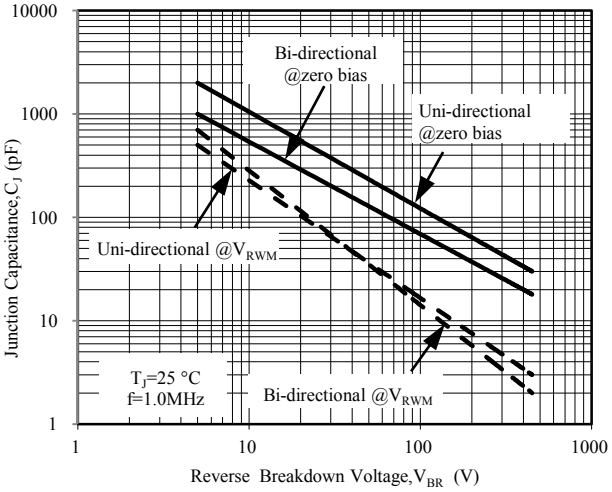


Fig. 6 - Typical Junction Capacitance

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)				
TPSMF5.0A	TPSMF5.0CA	FEA	KEA	6.40	7.00	10	400	5.0	21.74	9.2
TPSMF6.0A	TPSMF6.0CA	FGA	KGA	6.67	7.37	10	400	6.0	19.42	10.3
TPSMF6.5A	TPSMF6.5CA	FKA	KKA	7.22	7.98	10	250	6.5	17.86	11.2
TPSMF7.0A	TPSMF7.0CA	FMA	KMA	7.78	8.60	10	100	7.0	16.67	12.0
TPSMF7.5A	TPSMF7.5CA	FPA	KPA	8.33	9.21	1	50	7.5	15.50	12.9
TPSMF8.0A	TPSMF8.0CA	FRA	KRA	8.89	9.83	1	25	8.0	14.71	13.6
TPSMF8.5A	TPSMF8.5CA	FTA	KTA	9.44	10.40	1	10	8.5	13.89	14.4
TPSMF9.0A	TPSMF9.0CA	FVA	KVA	10.00	11.10	1	5	9.0	12.99	15.4
TPSMF10A	TPSMF10CA	FXA	KXA	11.10	12.30	1	2.5	10.0	11.76	17.0
TPSMF11A	TPSMF11CA	FZA	KZA	12.20	13.50	1	2.5	11.0	10.99	18.2
TPSMF12A	TPSMF12CA	HEA	LEA	13.30	14.70	1	2.5	12.0	10.05	19.9
TPSMF13A	TPSMF13CA	HGA	LGA	14.40	15.90	1	1	13.0	9.30	21.5
TPSMF14A	TPSMF14CA	HKA	LKA	15.60	17.20	1	1	14.0	8.62	23.2
TPSMF15A	TPSMF15CA	HMA	LMA	16.70	18.50	1	1	15.0	8.20	24.4
TPSMF16A	TPSMF16CA	HPA	LPA	17.80	19.70	1	1	16.0	7.69	26.0
TPSMF17A	TPSMF17CA	HRA	LRA	18.90	20.90	1	1	17.0	7.25	27.6
TPSMF18A	TPSMF18CA	HTA	LTA	20.00	22.10	1	1	18.0	6.85	29.2
TPSMF19A	TPSMF19CA	HBA	LBA	21.10	23.30	1	1	19.0	6.54	30.6
TPSMF20A	TPSMF20CA	HVA	LVA	22.20	24.50	1	1	20.0	6.17	32.4
TPSMF22A	TPSMF22CA	HXA	LXA	24.40	26.90	1	1	22.0	5.63	35.5
TPSMF24A	TPSMF24CA	HZA	LZA	26.70	29.50	1	1	24.0	5.14	38.9
TPSMF26A	TPSMF26CA	JEA	MEA	28.90	31.90	1	1	26.0	4.75	42.1
TPSMF28A	TPSMF28CA	JGA	MGA	31.10	34.40	1	1	28.0	4.41	45.4
TPSMF30A	TPSMF30CA	JKA	MKA	33.30	36.80	1	1	30.0	4.13	48.4
TPSMF33A	TPSMF33CA	JMA	MMA	36.70	40.60	1	1	33.0	3.75	53.3
TPSMF36A	TPSMF36CA	JPA	MPA	40.00	44.20	1	1	36.0	3.44	58.1
TPSMF40A	TPSMF40CA	JRA	MRA	44.40	49.10	1	1	40.0	3.10	64.5
TPSMF43A	TPSMF43CA	JTA	MTA	47.80	52.80	1	1	43.0	2.88	69.4
TPSMF45A	TPSMF45CA	JVA	MVA	50.00	55.30	1	1	45.0	2.75	72.7
TPSMF48A	TPSMF48CA	JXA	MXA	53.30	58.90	1	1	48.0	2.58	77.4
TPSMF51A	TPSMF51CA	JZA	MZA	56.70	62.70	1	1	51.0	2.43	82.4
TPSMF54A	TPSMF54CA	XEA	NEA	60.00	66.30	1	1	54.0	2.30	87.1
TPSMF58A	TPSMF58CA	XGA	NGA	64.40	71.20	1	1	58.0	2.14	93.6
TPSMF60A	TPSMF60CA	XKA	NKA	66.70	73.70	1	1	60.0	2.07	96.8
TPSMF64A	TPSMF64CA	XMA	NMA	71.10	78.60	1	1	64.0	1.94	103.0
TPSMF70A	TPSMF70CA	XPA	NPA	77.80	86.00	1	1	70.0	1.77	113.0
TPSMF75A	TPSMF75CA	XRA	NRA	83.30	92.10	1	1	75.0	1.65	121.0
TPSMF78A	TPSMF78CA	XTA	NTA	86.70	95.80	1	1	78.0	1.59	126.0
TPSMF80A	TPSMF80CA	XBA	NBA	88.80	97.60	1	1	80.0	1.55	129.0
TPSMF85A	TPSMF85CA	XVA	NVA	94.40	104.00	1	1	85.0	1.46	137.0
TPSMF90A	TPSMF90CA	XXA	NXA	100.00	111.00	1	1	90.0	1.37	146.0
TPSMF100A	TPSMF100CA	XZA	NZA	111.00	123.00	1	1	100.0	1.23	162.0
TPSMF110A	TPSMF110CA	TEA	PEA	122.00	135.00	1	1	110.0	1.13	177.0
TPSMF120A	TPSMF120CA	TGA	PGA	133.00	147.00	1	1	120.0	1.04	193.0
TPSMF130A	TPSMF130CA	TKA	PKA	144.00	159.00	1	1	130.0	0.96	209.0
TPSMF140A	TPSMF140CA	TBA	PBA	155.00	171.00	1	1	140.0	0.89	224.0
TPSMF150A	TPSMF150CA	TMA	PMA	167.00	185.00	1	1	150.0	0.82	243.0
TPSMF160A	TPSMF160CA	TPA	PPA	178.00	197.00	1	1	160.0	0.77	259.0
TPSMF170A	TPSMF170CA	TRA	PRA	189.00	209.00	1	1	170.0	0.73	275.0
TPSMF180A	TPSMF180CA	TTA	PTA	200.00	220.00	1	1	180.0	0.68	292.0
TPSMF190A	TPSMF190CA	TVA	PVA	211.00	232.00	1	1	190.0	0.65	308.0
TPSMF200A	TPSMF200CA	TXA	PXA	224.00	247.00	1	1	200.0	0.62	324.0
TPSMF220A	TPSMF220CA	TZA	PZA	246.00	272.00	1	1	220.0	0.56	356.0
TPSMF250A		YEA		279.00	309.00	1	1	250.0	0.50	405.0
TPSMF300A		YGA		335.00	371.00	1	1	300.0	0.41	486.0
TPSMF350A		YKA		391.00	432.00	1	1	350.0	0.36	567.0

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