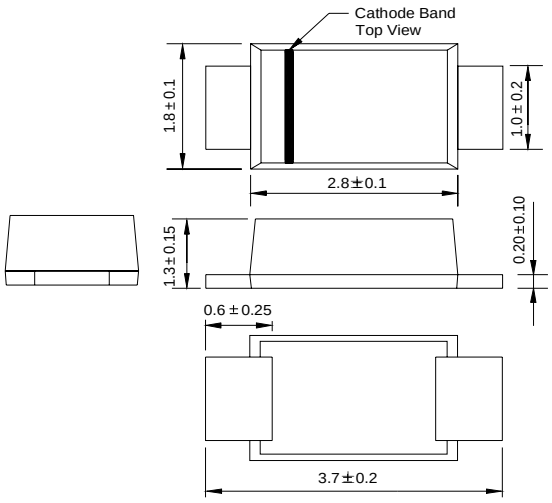
SMF5.0(C)A THRU SMF170(C)A

TRANSIENT VOLTAGE SUPPRESSOR

Standoff Voltage: 5.0-170 Volts Peak Pulse Power: 200 Watts

SOD-123FL



Dimensions in millimeters

FEATURE

- 400W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Material: UL Flammability Classification Rating 94V-0

MECHANICAL DATA

- Case:JEDEC SOD-123FL molded plastic body
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity Indicator: Cathode Band (Note: Bi-directional devices have no polarity indicator.)
- Marking: Date Code and Marking Code See Page 3
- Weight: 0.064 grams (approx.)
- Ordering Info: See Page 3

DEVICES FOR BIDIRECTIONAL APPLICATIONS

For bidirectional use suffix A or CA for types SMF5.0A thru SMF170A (e.g. SMF5.0CA,SMF170CA)

Electrical characteristics apply in both directions.

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above T_A = 25°C) (Note 1)	P_{PK}	400	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	I_{FSM}	30	A
Steady State Power Dissipation @ T_L = 75°C	$PM_{(AV)}$	1.0	W
Instantaneous Forward Voltage @ I_{PP} = 30A (Notes 1, 2, & 3)	V_F	3.5	V
Operating Temperature Range	T_j	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Notes: 1. Valid provided that terminals are kept at ambient temperature.
2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
3. Unidirectional units only.

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TRANSIENT VOLTAGE SUPPRESSOR SMF5.0(C)A THRU SMF170(C)A

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp}	Marking Code	
	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	I_R (μA)	V_C (V)	(A)	Bi-	UNI-
SMF5.0(C)A	5.0	6.40	7.25	10	800	9.2	21.7	5.0A	5.0CA
SMF6.0(C)A	6.0	6.67	7.37	10	800	10.3	19.4	6.0A	6.0CA
SMF6.5(C)A	6.5	7.22	7.98	10	500	11.2	17.9	6.5A	6.5CA
SMF7.0(C)A	7.0	7.78	8.60	10	200	12.0	16.7	7.0A	7.0CA
SMF7.5(C)A	7.5	8.33	9.21	1.0	100	12.9	15.5	7.5A	7.5CA
SMF8.0(C)A	8.0	8.89	9.83	1.0	50	13.6	14.7	8.0A	8.0CA
SMF8.5(C)A	8.5	9.44	10.4	1.0	10	14.4	13.9	8.5A	8.5CA
SMF9.0(C)A	9.0	10.0	11.1	1.0	5.0	15.4	13.0	9.0A	9.0CA
SMF10(C)A	10	11.1	12.3	1.0	5.0	17.0	11.8	10A	10CA
SMF11(C)A	11	12.2	13.5	1.0	5.0	18.2	11.0	11A	11CA
SMF12(C)A	12	13.3	14.7	1.0	5.0	19.9	10.1	12A	12CA
SMF13(C)A	13	14.4	15.9	1.0	5.0	21.5	9.3	13A	13CA
SMF14(C)A	14	15.6	17.2	1.0	5.0	23.2	8.6	14A	14CA
SMF15(C)A	15	16.7	18.5	1.0	5.0	24.4	8.2	15A	15CA
SMF16(C)A	16	17.8	19.7	1.0	5.0	26.0	7.7	16A	16CA
SMF17(C)A	17	18.9	20.9	1.0	5.0	27.6	7.2	17A	17CA
SMF18(C)A	18	20.0	22.1	1.0	5.0	29.2	6.8	18A	18CA
SMF20(C)A	20	22.2	24.5	1.0	5.0	32.4	6.2	20A	20CA
SMF22(C)A	22	24.4	26.9	1.0	5.0	35.5	5.6	22A	22CA
SMF24(C)A	24	26.7	29.5	1.0	5.0	38.9	5.1	24A	24CA
SMF26(C)A	26	28.9	31.9	1.0	5.0	42.1	9.5	26A	26CA
SMF28(C)A	28	31.1	34.4	1.0	5.0	45.4	8.8	28A	28CA
SMF30(C)A	30	33.3	36.8	1.0	5.0	48.4	8.3	30A	30CA
SMF33(C)A	33	36.7	40.6	1.0	5.0	53.3	7.5	33A	33CA
SMF36(C)A	36	40.0	44.2	1.0	5.0	58.1	6.9	36A	36CA
SMF40(C)A	40	44.4	49.1	1.0	5.0	64.5	6.2	40A	40CA
SMF43(C)A	43	47.8	52.8	1.0	5.0	69.4	5.7	43A	43CA
SMF45(C)A	45	50.0	55.3	1.0	5.0	72.7	5.5	45A	45CA
SMF48(C)A	48	53.3	58.9	1.0	5.0	77.4	5.2	48A	48CA
SMF51(C)A	51	56.7	62.7	1.0	5.0	82.4	4.9	51A	51CA
SMF54(C)A	54	60.0	66.3	1.0	5.0	87.1	4.6	54A	54CA
SMF58(C)A	58	64.4	71.2	1.0	5.0	93.6	4.3	58A	58CA
SMF60(C)A	60	66.7	73.7	1.0	5.0	96.8	4.1	60A	60CA
SMF64(C)A	64	71.1	78.6	1.0	5.0	103	3.9	64A	64CA
SMF70(C)A	70	77.8	86.0	1.0	5.0	113	3.5	70A	70CA
SMF75(C)A	75	83.3	92.1	1.0	5.0	121	3.3	75A	75CA
SMF78(C)A	78	86.7	95.8	1.0	5.0	126	2.2	78A	78CA
SMF85(C)A	85	94.4	104	1.0	5.0	137	2.9	85A	85CA
SMF90(C)A	90	100	111	1.0	5.0	146	2.7	90A	90CA
SMF100(C)A	100	111	123	1.0	5.0	162	2.5	100A	100CA
SMF110(C)A	110	122	135	1.0	5.0	177	2.3	110A	110CA
SMF120(C)A	120	133	147	1.0	5.0	193	2.0	120A	120CA
SMF130(C)A	130	144	159	1.0	5.0	209	1.9	130A	130CA
SMF150(C)A	150	167	185	1.0	5.0	243	1.6	150A	150CA
SMF160(C)A	160	178	197	1.0	5.0	259	1.5	160A	160CA
SMF170(C)A	170	189	209	1.0	5.0	275	1.4	170A	170CA

Notes: 4. Suffix C denotes Bi-directional device.
5. V_{BR} measured with I_T current pulse = 300μs
6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

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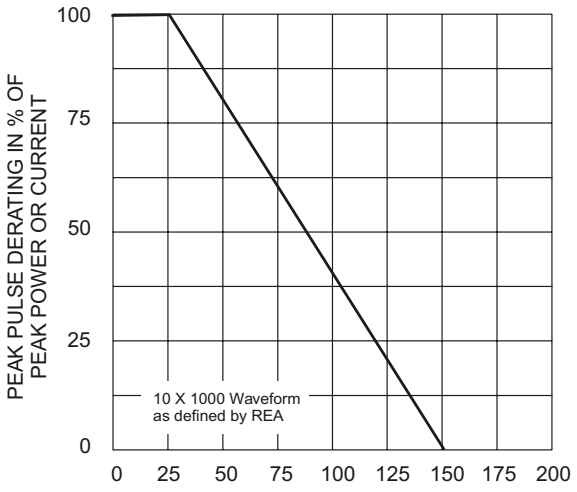


Fig. 1 Pulse Derating Curve

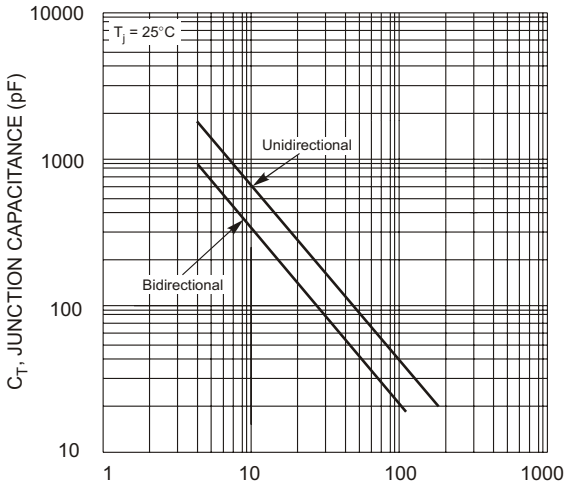


Fig. 2 Typical Total Capacitance

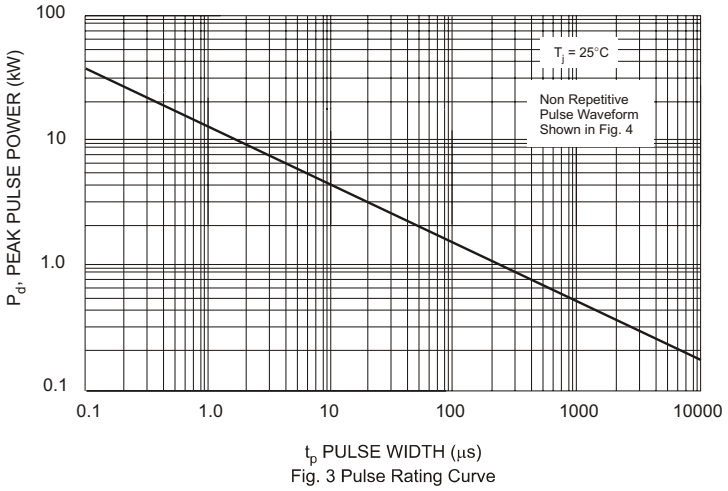


Fig. 3 Pulse Rating Curve

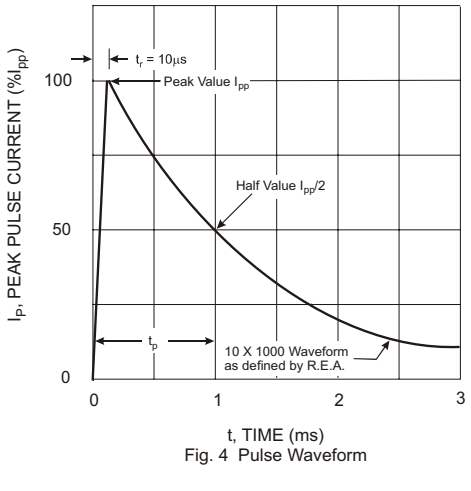


Fig. 4 Pulse Waveform

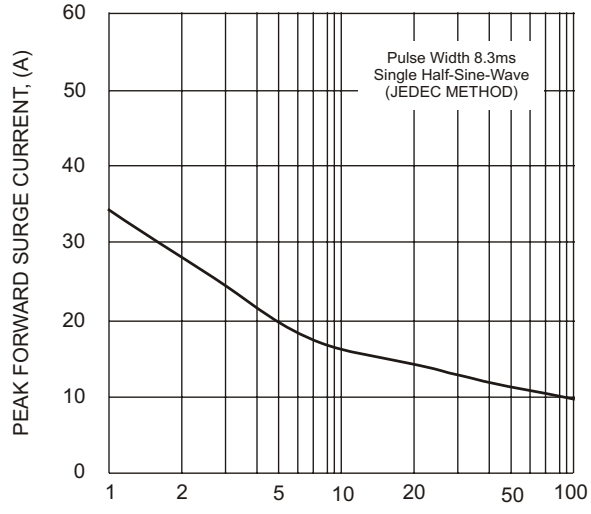


Fig. 5 Maximum Non-Repetitive Surge Current

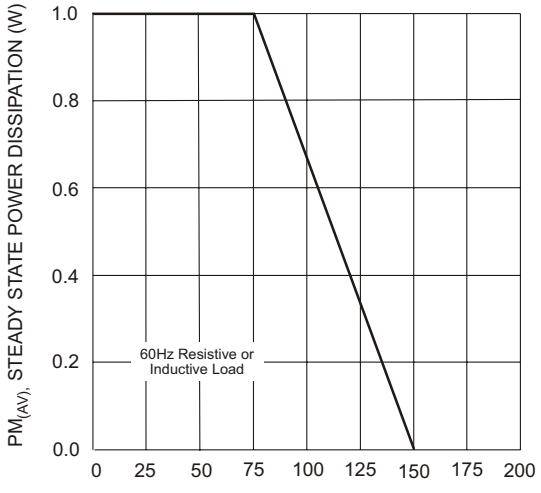


Fig. 6 Steady State Power Derating Curve

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