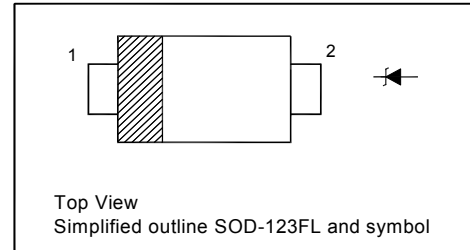


SMF5.0A~SMF220A

Surface Mount Transient Voltage Suppressors

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation (PW-10/1000 μs) ¹⁾	P_{PPM}	200	W
Peak Forward Surge Current ²⁾	I_{FSM}	20	A
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

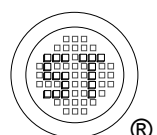
¹⁾ Non-repetitive current pulse at $T_a = 25^\circ\text{C}$, per waveform of Figure 1. Mounted on 5.0 mm² copper pads to each terminal.

²⁾ Peak Forward Surge Current 8.3 ms Single Half Sine -Wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.

Thermal Characteristics

Parameter	Symbol	Value	Unit
Typical Thermal Resistance - Junction to Ambient ¹⁾	$R_{\theta JA}$	325	$^\circ\text{C}/\text{W}$

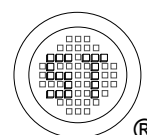
¹⁾ Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



SMF5.0A~SMF220A

Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified) $V_F = 1.25\text{ V Max. at } I_F = 200\text{ mA}$

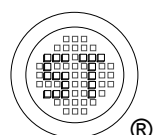
Type	Marking Code	Stand-off Voltage V_{WM} (V)	Breakdown Voltage		Test Current I_T (mA)	Maximum Reverse Leakage I_R (μA) at V_{WM}	Maximum Clamping Voltage V_C (V) at I_{PPM}	Maximum Peak Pulse Current I_{PPM} (A)
			V_{BR} (V) Min. at I_T	V_{BR} (V) Max. at I_T				
SMF5.0A	TA1	5	6.4	7	10	400	9.2	21.7
SMF6.0A	TB1	6	6.7	7.4	10	400	10.3	19.4
SMF6.5A	TC1	6.5	7.2	8	10	250	11.2	17.9
SMF7.0A	TD1	7	7.8	8.6	10	100	12	16.7
SMF7.5A	TE1	7.5	8.3	9.2	1	50	12.9	15.5
SMF8.0A	TF1	8	8.9	9.8	1	25	13.6	14.7
SMF8.5A	TG1	8.5	9.4	10.4	1	10	14.4	13.9
SMF9.0A	TH1	9	10	11.1	1	5	15.4	13
SMF10A	TJ1	10	11.1	12.3	1	2.5	17	11.8
SMF11A	TK1	11	12.2	13.5	1	2.5	18.2	11
SMF12A	TL1	12	13.3	14.7	1	2.5	19.9	10.1
SMF13A	TM1	13	14.4	15.9	1	1	21.5	9.3
SMF14A	TN1	14	15.6	17.2	1	1	23.2	8.6
SMF15A	TP1	15	16.7	18.5	1	1	24.4	8.2
SMF16A	TQ1	16	17.8	19.7	1	1	26	7.7
SMF17A	TR1	17	18.9	20.9	1	1	27.6	7.2
SMF18A	TS1	18	20	22.1	1	1	29.2	6.8
SMF20A	TT1	20	22.2	24.5	1	1	32.4	6.2
SMF22A	TU1	22	24.4	26.9	1	1	35.5	5.6
SMF24A	TV1	24	26.7	29.5	1	1	38.9	5.1
SMF26A	TW1	26	28.9	31.9	1	1	42.1	4.8
SMF28A	TX1	28	31.1	34.4	1	1	45.4	4.4
SMF30A	TY1	30	33.3	36.8	1	1	48.4	4.1
SMF33A	TZ1	33	36.7	40.6	1	1	53.3	3.8
SMF36A	UA1	36	40	44.2	1	1	58.1	3.4
SMF40A	UB1	40	44.4	49.1	1	1	64.5	3.1
SMF43A	UC1	43	47.8	52.8	1	1	69.4	2.9
SMF45A	UD1	45	50	55.3	1	1	72.7	2.8
SMF48A	UE1	48	53.3	58.9	1	1	77.4	2.6
SMF51A	UF1	51	56.7	62.7	1	1	82.4	2.4
SMF54A	UG1	54	60	66.3	1	1	87.1	2.3
SMF58A	UH1	58	64.4	71.2	1	1	93.6	2.1
SMF60A	UJ1	60	66.7	73.7	1	1	96.8	1.8
SMF64A	UK1	64	71.1	78.6	1	1	103	1.7
SMF70A	UL1	70	77.8	86	1	1	113	1.5
SMF75A	UM1	75	83.3	92.1	1	1	121	1.4
SMF78A	UN1	78	86.7	95.8	1	1	126	1.4
SMF85A	UP1	85	94.4	104	1	1	137	1.3



SMF5.0A~SMF220A

Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified) $V_F = 1.25\text{ V Max. at } I_F = 200\text{ mA}$

Type	Marking Code	Stand-off Voltage V_{WM} (V)	Breakdown Voltage		Test Current I_T (mA)	Maximum Reverse Leakage I_R (μA) at V_{WM}	Maximum Clamping Voltage V_C (V) at I_{PPM}	Maximum Peak Pulse Current I_{PPM} (A)
			V_{BR} (V) Min. at I_T	V_{BR} (V) Max. at I_T				
SMF90A	UQ1	90	100	111	1	1	146	1.2
SMF100A	UR1	100	111	123	1	1	162	1.1
SMF110A	US1	110	122	135	1	1	177	1
SMF120A	UT1	120	133	147	1	1	193	0.9
SMF130A	UU1	130	144	159	1	1	209	0.8
SMF150A	UV1	150	167	185	1	1	243	0.7
SMF160A	UW1	160	178	197	1	1	259	0.7
SMF170A	UX1	170	189	209	1	1	275	0.6
SMF175A	UY1	175	198	214	1	1	284	0.6
SMF180A	UZ1	180	201	222	1	1	292	0.5
SMF190A	VA1	190	211	232	1	1	308	0.5
SMF200A	VB1	200	224	247	1	1	324	0.5
SMF220A	VC1	220	246	272	1	1	356	0.5



SMF5.0A~SMF220A

Electrical Characteristics Curves

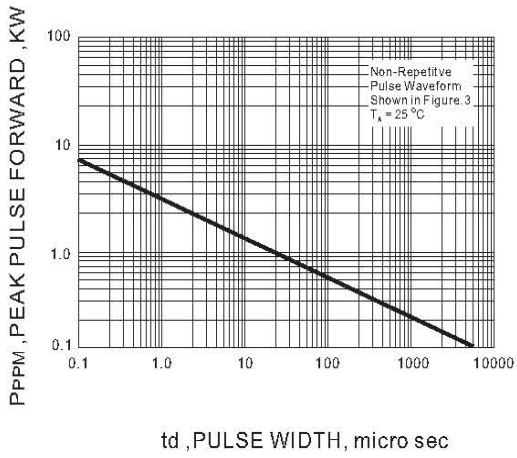


Fig.1 Peak pulse power rating curve

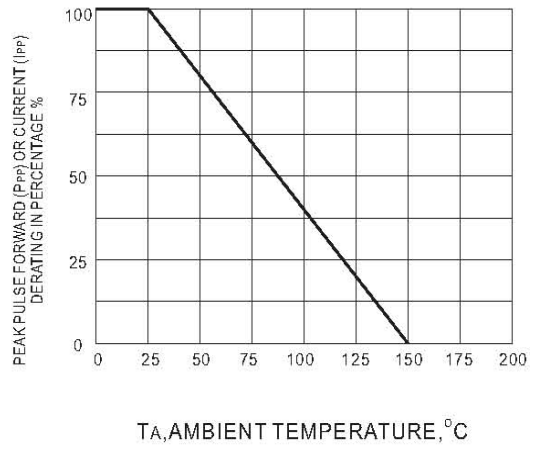


Fig.2 Derating curve

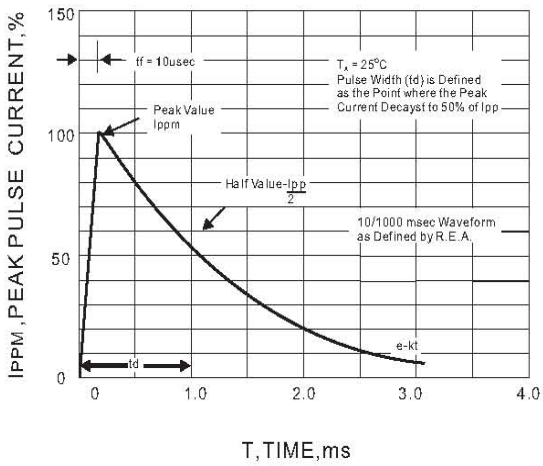
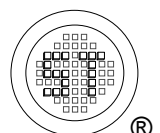


Fig.3 Pulse waveform

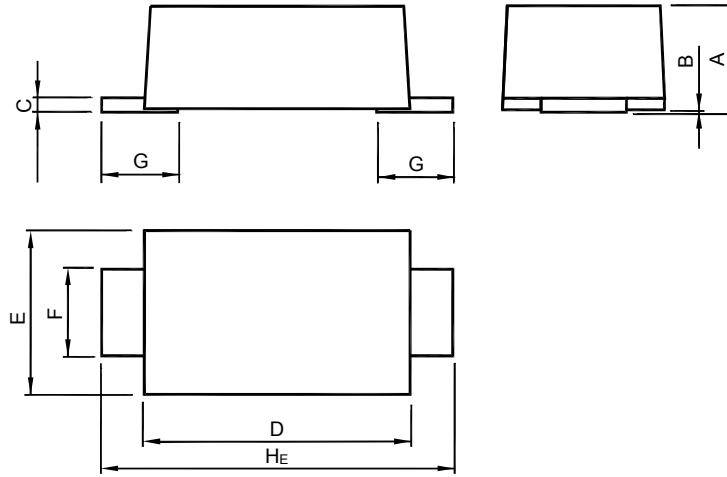


SMF5.0A~SMF220A

PACKAGE OUTLINE

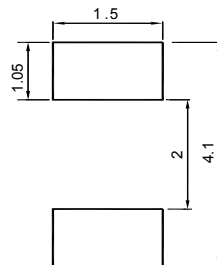
Plastic surface mounted package; 2 leads

SOD-123FL



UNIT	A	B	C	D	E	F	G	H _E
mm	1.08	0.1	0.2	2.9	1.9	1.1	0.85	3.9
	0.88	0	0.1	2.7	1.7	0.8	0.45	3.5

Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOD-123FL	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

" *** " = Part No.

" III " = Cathode line

Font type: Arial

