

# SMF Series

## Surface mount transient voltage suppressor

power Dissipation: 200 watts

Stand-Off Voltage: 5.0V~440V

### FEATURES

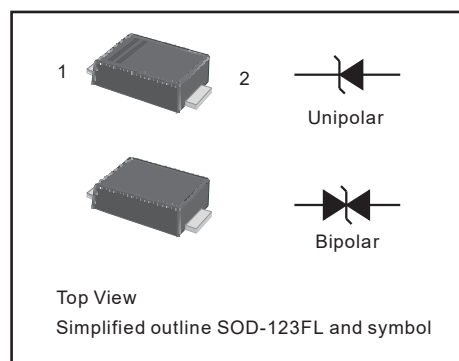
- ◆ For surface mounted applications in order to optimize board space.
- ◆ Low profile package
- ◆ Glass passivated junction
- ◆ Low inductance
- ◆ Plastic package has Underwriters Laboratory Flammability

### MECHANICAL DATA

- ◆ Case: SOD-123FL
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 15mg/0.00048oz

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



### Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on TA=25°C (Note 1,2,5, Fig1)	$P_{PPM}$	200	W
Peak Forward Surge Current (Note 3)	$I_{FSM}$ (UNI)	20	A
Peak Pulse Current on 10/1000 us waveform (Note 1) Fig2	$I_{PPM}$	see Table 1	A
Steady State Power Dissipation (Note 4)	$P_{M(AV)}$	1	W
Operating Junction and Storage Range	$T_J, T_{STG}$	-55 to +150	°C
Typical Thermal Resistance	$R_{\theta JA}$	180	°C/W

#### NOTES

1. Non-repetitive current pulse per Fig 3 and derated above  $T_A=25^\circ\text{C}$  per Fig 2
2. Mounted on 5mm<sup>2</sup> copper pads to each terminal
3. 8.3ms single half sinewave, or equivalent square wave duty cycle=4 pulses per minutes maximum
4. lead temperature at  $T_L=75^\circ\text{C}$
5. Peak pulse powe. waveform is  $t_p=10/1000\mu\text{s}$
6. A transient suppressor is selected according to the working peak reverse voltage( $V_{RWM}$ ), Which Should be equal to or greater than the DC or continuous peak operating voltage level

Dated:01/2019  
Rev: 1.1

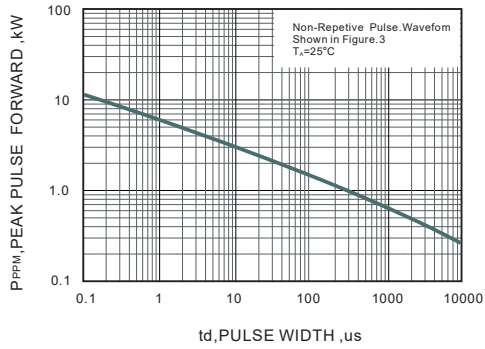
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## Characteristics at Ta = 25°C

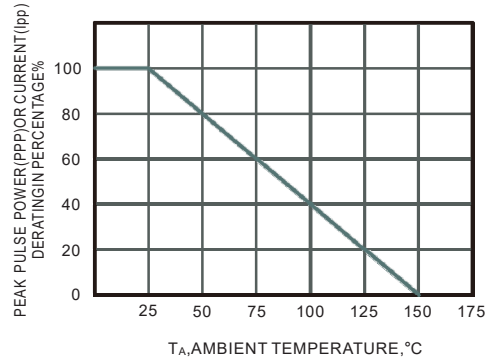
Type		Marking		V <sub>RMW</sub>	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse
					V <sub>BR</sub> @ I <sub>T</sub>					
					Uni	Bi	Uni	Bi	V	Min
				V	V	V	mA	µA	V	A
SMF5.0AT	SMF5.0CAT	AE	CAE	5	6.4	7	10	200	9.2	21.7
SMF6.0AT	SMF6.0CAT	AG	CAG	6	6.67	7.37	10	100	10.3	19.4
SMF6.5AT	SMF6.5CAT	AK	CAK	6.5	7.22	7.98	10	75	11.2	17.9
SMF7.0AT	SMF7.0CAT	AM	CAM	7	7.78	8.6	10	50	12	16.7
SMF7.5AT	SMF7.5CAT	AP	CAP	7.5	8.33	9.21	1	50	12.9	15.5
SMF8.0AT	SMF8.0CAT	AR	CAR	8	8.89	9.83	1	25	13.6	14.7
SMF8.5AT	SMF8.5CAT	AT	CAT	8.5	9.44	10.4	1	10	14.4	13.9
SMF9.0AT	SMF9.0CAT	AV	CAV	9	10	11.1	1	5	15.4	13
SMF10AT	SMF10CAT	AX	CAX	10	11.1	12.3	1	2.5	17	11.8
SMF11AT	SMF11CAT	AZ	CAZ	11	12.2	13.5	1	2.5	18.2	11
SMF12AT	SMF12CAT	BE	CBE	12	13.3	14.7	1	2.5	19.9	10.1
SMF13AT	SMF13CAT	BG	CBG	13	14.4	15.9	1	1	21.5	9.3
SMF14AT	SMF14CAT	BK	CBK	14	15.6	17.2	1	1	23.2	8.6
SMF15AT	SMF15CAT	BM	CBM	15	16.7	18.5	1	1	24.4	8.2
SMF16AT	SMF16CAT	BP	CBP	16	17.8	19.7	1	1	26	7.7
SMF17AT	SMF17CAT	BR	CBR	17	18.9	20.9	1	1	27.6	7.2
SMF18AT	SMF18CAT	BT	CBT	18	20	22.1	1	1	29.2	6.8
SMF20AT	SMF20CAT	BV	CBV	20	22.2	24.5	1	1	32.4	6.2
SMF22AT	SMF22CAT	BX	CBX	22	24.4	26.9	1	1	35.5	5.6
SMF24AT	SMF24CAT	BZ	CBZ	24	26.7	29.5	1	1	38.9	5.1
SMF26AT	SMF26CAT	CE	CCE	26	28.9	31.9	1	1	42.1	4.8
SMF28AT	SMF28CAT	CG	CCG	28	31.1	34.4	1	1	45.4	4.4
SMF30AT	SMF30CAT	CK	CCK	30	33.3	36.8	1	1	48.4	4.1
SMF33AT	SMF33CAT	CM	CCM	33	36.7	40.6	1	1	53.3	3.8
SMF36AT	SMF36CAT	CP	CCP	36	40	44.2	1	1	58.1	3.4
SMF40AT	SMF40CAT	CR	CCR	40	44.4	49.1	1	1	64.5	3.1
SMF43AT	SMF43CAT	CT	CCT	43	47.8	52.8	1	1	69.4	2.9
SMF45AT	SMF45CAT	CV	CCV	45	50	55.3	1	1	72.7	2.8
SMF48AT	SMF48CAT	CX	CCX	48	53.3	58.9	1	1	77.4	2.6
SMF51AT	SMF51CAT	CZ	CCZ	51	56.7	62.7	1	1	82.4	2.4
SMF54AT	SMF54CAT	DE	CDE	54	60	66.3	1	1	87.1	2.3
SMF58AT	SMF58CAT	DG	CDG	58	64.4	71.2	1	1	93.6	2.1
SMF60AT	SMF60CAT	DK	CDK	60	66.7	73.7	1	1	96.8	1.8
SMF64AT	SMF64CAT	DM	CDM	64	71.1	78.6	1	1	103	1.7
SMF70AT	SMF70CAT	DP	CDP	70	77.8	86	1	1	113	1.5
SMF75AT	SMF75CAT	DR	CDR	75	83.3	92.1	1	1	121	1.4
SMF78AT	SMF78CAT	DT	CDT	78	86.7	95.8	1	1	126	1.4
SMF85AT	SMF85CAT	DV	CDV	85	94.4	104	1	1	137	1.3
SMF90AT	SMF90CAT	DX	CDX	90	100	111	1	1	146	1.2
SMF100AT	SMF100CAT	DZ	CDZ	100	111	123	1	1	162	1.1
SMF110AT	SMF110CAT	EE	CEE	110	122	135	1	1	177	1
SMF120AT	SMF120CAT	EG	CEG	120	133	147	1	1	193	0.9
SMF130AT	SMF130CAT	EK	CEK	130	144	159	1	1	209	0.8
SMF150AT	SMF150CAT	EM	CEM	150	167	185	1	1	243	0.7
SMF160AT	SMF160CAT	EP	CEP	160	178	197	1	1	259	0.7
SMF170AT	SMF170CAT	ER	CER	170	189	209	1	1	275	0.6
SMF180AT	SMF180CAT	ET	CET	180	201	222	1	1	292	0.5
SMF200AT	SMF200CAT	EX	CEX	200	224	247	1	1	324	0.5
SMF220AT	SMF220CAT	E22	CE22	220	246	272	1	1	356	0.5
SMF250AT	SMF250CAT	E25	CE25	250	279	309	1	1	405	0.5
SMF300AT	SMF300CAT	E30	CE30	300	335	371	1	1	486	0.45
SMF350AT	SMF350CAT	E35	CE35	350	391	432	1	1	567	0.4
SMF400AT	SMF400CAT	E40	CE40	400	447	494	1	1	648	0.35
SMF440AT	SMF440CAT	E44	CE44	440	492	543	1	1	713	0.3

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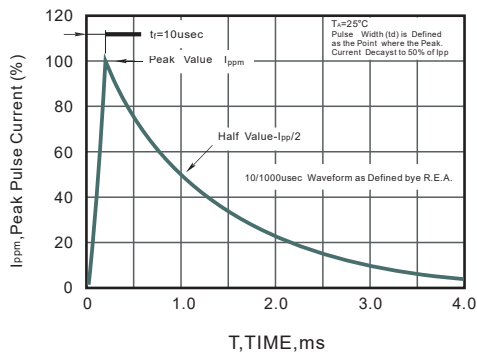
**Fig.1 Peak Pulse Power Rating Curve**



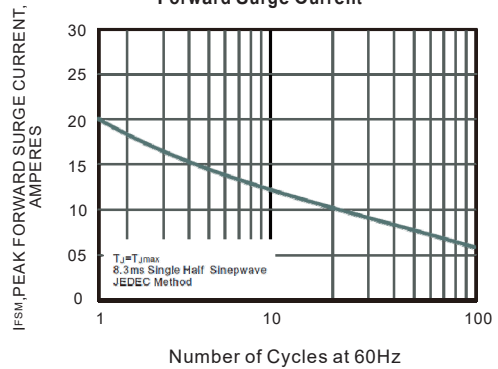
**Fig.2 Forward Current Derating Curve**



**Fig.3 Pulse Waveform**



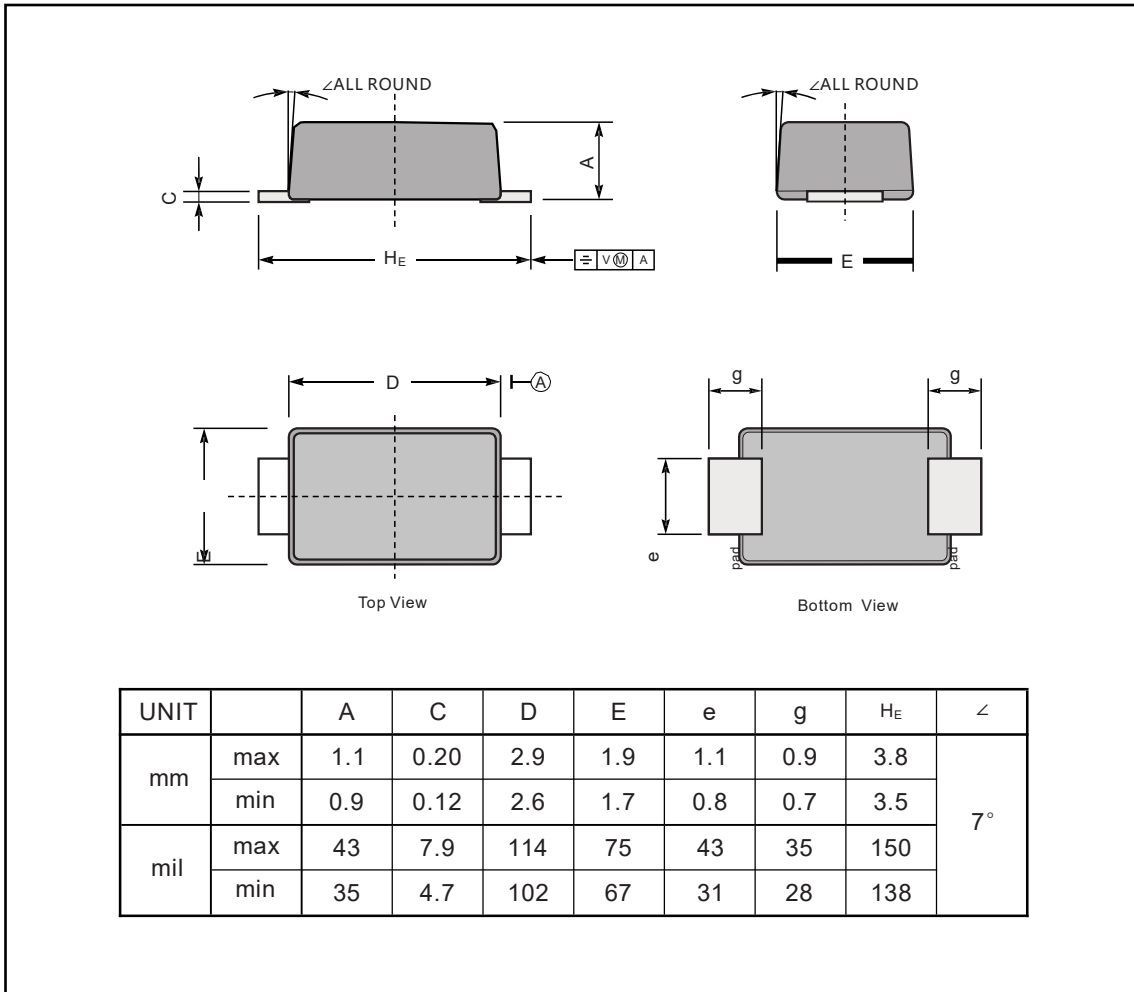
**Fig.4 Maximum Non-Repetitive Peak Forward Surge Current**



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## Package Outline

### SOD-123FL



### The recommended mounting pad size

