



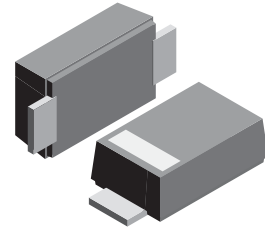
# SMFJ5.0A(CA) - SMFJ170A(CA)

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODE

**VOLTAGE RANGE: 5.0 - 170V**  
**POWER: 200Watts**

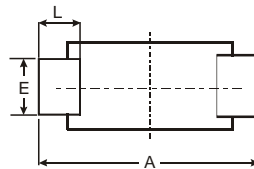
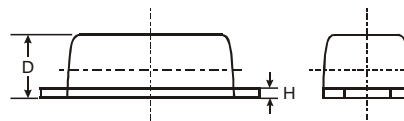
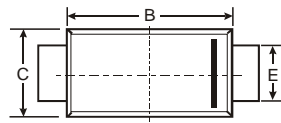
### Features

- For surface mounted applications
- Low profile package
- Low incremental surge resistance, excellent clamping capability
- 200W peak pulse power capability with a 10/1000  $\mu$ s wave from, repetition rate (duty cycle): 0.01%
- High temperature soldering guaranteed: 260 /10 seconds, at terminals



### Mechanical Data

- Case: JEDEC SOD-123FL, molded plastic over passivated chip
- Polarity: Color band denotes positive end (cathode) except for bidirectional
- Mounting position: Any
- Weight: 0.006 ounces, 0.02 gram



SOD-123FL			
Dim	Min	Max	Typ
A	3.58	3.72	3.65
B	2.72	2.78	2.75
C	1.77	1.83	1.80
D	1.02	1.08	1.05
E	0.097	1.03	1.00
H	0.13	0.17	0.15
L	0.53	0.57	0.55
All Dimensions in mm			



### Maximum Ratings $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Maximum $P_{PK}$ Dissipation (PW - 10/1000 $\mu$ s)	$P_{PK}$	200	W
Maximum $P_{PK}$ Dissipation @ $T_a = 25^\circ\text{C}$ (PW - 8/10 $\mu$ s) (Note 2)	$P_{PK}$	1000	W
DC Power Dissipation @ $T_a = 25^\circ\text{C}$ (Note 3)	$P_D$	385	mW
Derate above $25^\circ\text{C}$		4.0	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 3)	$R_{\theta JA}$	325	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Lead (Note 3)	$R_{\theta JL}$	26	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

#### Notes :

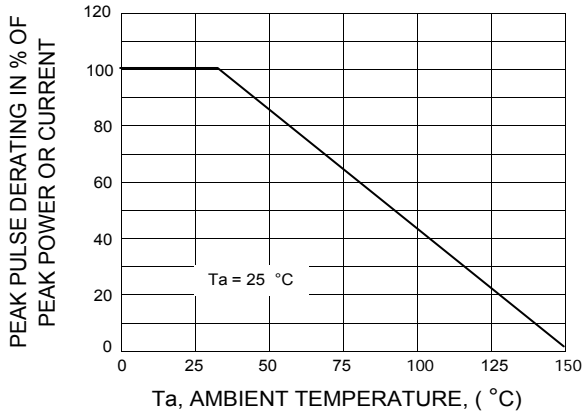
- (1) Non-repetitive current pulse at  $T_a = 25^\circ\text{C}$ , per waveform of Fig. 2.
- (2) Non-repetitive current pulse at  $T_a = 25^\circ\text{C}$ , per waveform of Fig. 5.
- (3) Mounted with recommended minimum pad size, DC board FR4.



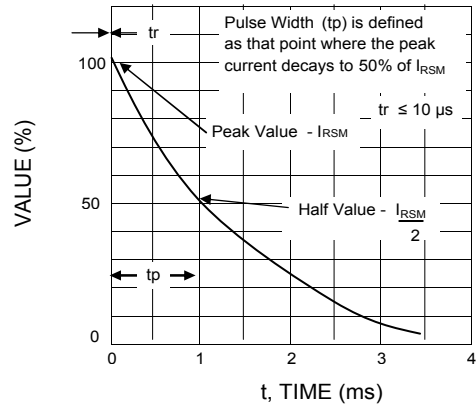
TYPE		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @ I <sub>T</sub>	Test Current	Reverse Leakage @V <sub>RWM</sub>	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current
(Uni)	(Bi)	(Uni)	(Bi)	V <sub>RWM</sub> (V)	V <sub>BR MIN</sub> (V)	V <sub>BR MAX</sub> (V)	I <sub>T</sub> (mA)	I <sub>R</sub> (uA)	V <sub>C</sub> (V)	I <sub>PP</sub> (mA)
SMFJ5.0A	SMFJ5.0CA	KE	FE	5.0	6.40	7.00	10	400	9.2	21.7
SMFJ6.0A	SMFJ6.0CA	KG	FG	6.0	6.67	7.37	10	400	10.3	19.4
SMFJ6.5A	SMFJ6.5CA	KK	FK	6.5	7.22	7.98	10	250	11.2	17.9
SMFJ7.0A	SMFJ7.0CA	KM	FM	7.0	7.78	8.60	10	100	12.0	16.7
SMFJ7.5A	SMFJ7.5CA	KP	FP	7.5	8.33	9.21	1.0	50	12.9	15.5
SMFJ8.0A	SMFJ8.0CA	KR	FR	8.0	8.89	9.83	1.0	25	13.6	14.7
SMFJ8.5A	SMFJ8.5CA	KT	FT	8.5	9.44	10.4	1.0	10	14.4	13.9
SMFJ9.0A	SMFJ9.0CA	KV	FV	9.0	10.0	11.1	1.0	5.0	15.4	13.0
SMFJ10A	SMFJ10CA	KX	FX	10	11.1	12.3	1.0	2.5	17.0	11.8
SMFJ11A	SMFJ11CA	KZ	FZ	11	12.2	13.5	1.0	2.5	18.2	11.0
SMFJ12A	SMFJ12CA	LE	HE	12	13.3	14.7	1.0	2.5	19.9	10.1
SMFJ13A	SMFJ13CA	LG	HG	13	14.4	15.9	1.0	1.0	21.5	9.3
SMFJ14A	SMFJ14CA	LK	HK	14	15.6	17.2	1.0	1.0	23.2	8.6
SMFJ15A	SMFJ15CA	LM	HM	15	16.7	18.5	1.0	1.0	24.4	8.2
SMFJ16A	SMFJ16CA	LP	HP	16	17.8	19.7	1.0	1.0	26.0	7.7
SMFJ17A	SMFJ17CA	LR	HR	17	18.9	20.9	1.0	1.0	27.6	7.2
SMFJ18A	SMFJ18CA	LT	HT	18	20.0	22.1	1.0	1.0	29.2	6.8
SMFJ20A	SMFJ20CA	LV	HV	20	22.2	24.5	1.0	1.0	32.4	6.2
SMFJ22A	SMFJ22CA	LX	HX	22	24.4	26.9	1.0	1.0	35.5	5.6
SMFJ24A	SMFJ24CA	LZ	HZ	24	26.7	29.5	1.0	1.0	38.9	5.1
SMFJ26A	SMFJ26CA	ME	JE	26	28.9	31.9	1.0	1.0	42.1	4.8
SMFJ28A	SMFJ28CA	MG	JG	28	31.1	34.4	1.0	1.0	45.4	4.4
SMFJ30A	SMFJ30CA	MK	JK	30	33.3	36.8	1.0	1.0	48.4	4.1
SMFJ33A	SMFJ33CA	MM	JM	33	36.7	40.6	1.0	1.0	53.3	3.8
SMFJ36A	SMFJ36CA	MP	JP	36	40.0	44.2	1.0	1.0	58.1	3.4
SMFJ40A	SMFJ40CA	MR	JR	40	44.4	49.1	1.0	1.0	64.5	3.1
SMFJ43A	SMFJ43CA	MT	JT	43	47.8	52.8	1.0	1.0	69.4	2.9
SMFJ45A	SMFJ45CA	MV	JV	45	50.0	55.3	1.0	1.0	72.7	2.8
SMFJ48A	SMFJ48CA	MX	JX	48	53.3	58.9	1.0	1.0	77.4	2.6
SMFJ51A	SMFJ51CA	MZ	JZ	51	56.7	62.7	1.0	1.0	82.4	2.4
SMFJ54A	SMFJ54CA	NE	XE	54	60.0	66.3	1.0	1.0	87.1	2.3
SMFJ58A	SMFJ58CA	NG	XG	58	64.4	71.2	1.0	1.0	93.6	2.1
SMFJ60A	SMFJ60CA	NK	XK	60	66.7	73.7	1.0	1.0	96.8	1.8
SMFJ64A	SMFJ64CA	NM	XM	64	71.1	78.6	1.0	1.0	103	1.7
SMFJ70A	SMFJ70CA	NP	XP	70	77.8	86.0	1.0	1.0	113	1.5
SMFJ75A	SMFJ75CA	NR	XR	75	83.3	92.1	1.0	1.0	121	1.4
SMFJ78A	SMFJ78CA	NT	XT	78	86.7	95.8	1.0	1.0	126	1.4
SMFJ85A	SMFJ85CA	NV	XB	85	94.4	104	1.0	1.0	137	1.3
SMFJ90A	SMFJ90CA	NX	XX	90	100	111	1.0	1.0	146	1.2
SMFJ100A	SMFJ100CA	NZ	XZ	100	111	123	1.0	1.0	162	1.1
SMFJ110A	SMFJ110CA	PE	TE	110	122	135	1.0	1.0	177	1.0
SMFJ120A	SMFJ120CA	PG	TG	120	133	147	1.0	1.0	193	0.9
SMFJ130A	SMFJ130CA	PK	TK	130	144	159	1.0	1.0	209	0.8
SMFJ150A	SMFJ150CA	PM	TM	150	167	185	1.0	1.0	243	0.7
SMFJ160A	SMFJ160CA	PP	TP	160	178	197	1.0	1.0	259	0.7
SMFJ170A	SMFJ170CA	PR	TR	170	189	209	1.0	1.0	275	0.6



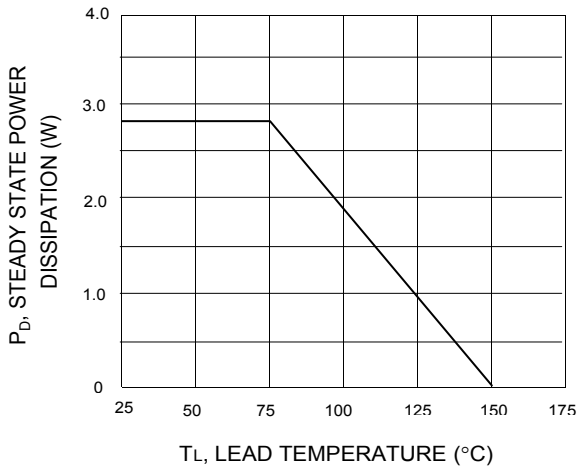
**FIG.1 - PULSE DERATING CURVE**



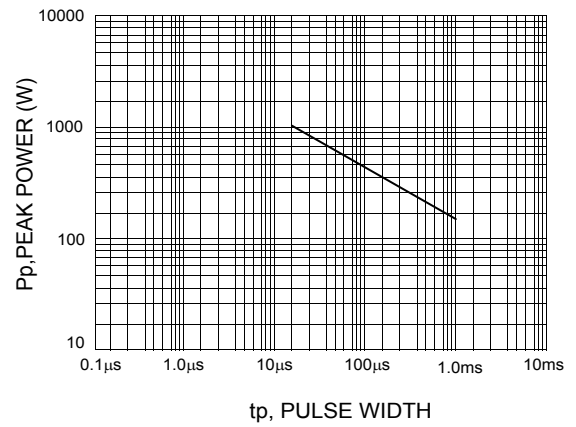
**FIG.2 - 10 x 1000 μs PULSE WAVEFORM**



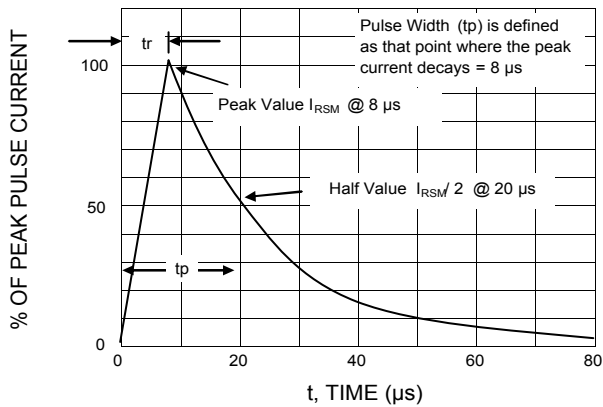
**FIG.3 - STEADY STATE POWER DERATING**



**FIG.4 - PULSE RATING CURVE**



**FIG.5 - 8 x 20 μs PULSE WAVEFORM**



**FIG. 6 - CAPACITANCE VS. WORKING PEAK REVERSE VOLTAGE**

