



Micro Commercial Components



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

**200WATTS TRANSIENT  
VOLTAGE SUPPRESSOR  
5.0 TO 170 VOLTS**

## Features

- Halogen free available upon request by adding suffix "-HF"
- Stand-off Voltage 5-170 Volts
- Uni and bi-directional type available (suffix "C" means bi-directional)
- Surface Mount
- Low Clamping Voltage
- 200 Watt Peak Power Dissipation
- Small, High Thermal Efficiency
- Marking Code: See Electrical Characteristics Table
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Lead Free Finish/RoHS Compliant (NOTE 1) ("P" Suffix designates RoHS Compliant. See ordering information)

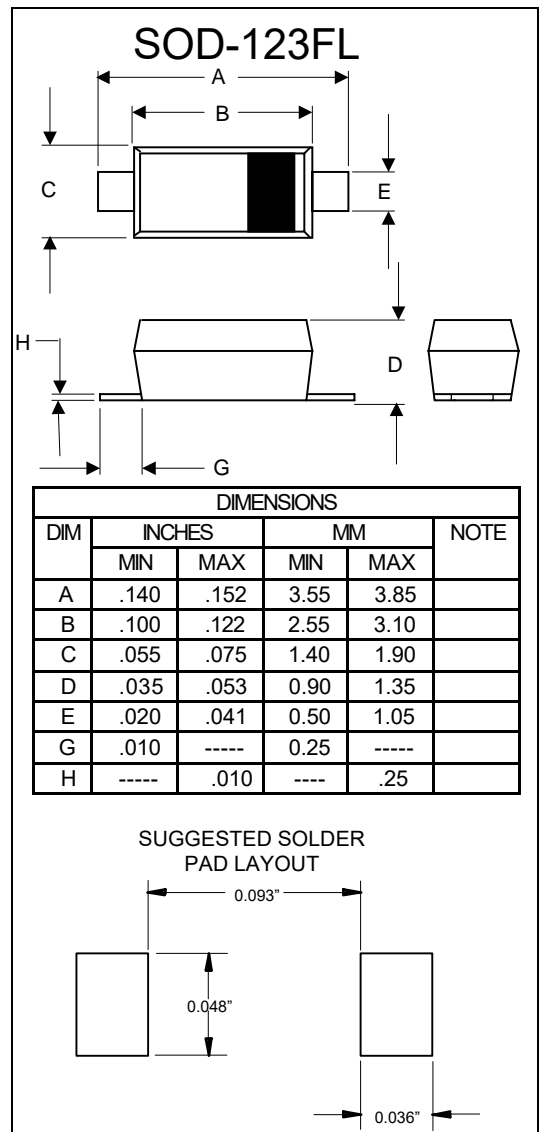
## Maximum Ratings

- Operating Temperature: -65°C to +175°C
- Storage Temperature: -65°C to +175°C

## Electrical Characteristics @ 25°C Unless Otherwise Specified

Peak Pulse Power (10/1000us Waveform)	$P_{PP}$	200W	
ESD Voltage(HBM)	$V_{ESD}$	>16KV	
Typical Thermal Resistance	$R_{\theta JL}$	26 °C/W	
	$R_{\theta JA}$	300 °C/W	
Peak Forward Surge Current	$I_{FSM}$	30A	8.3ms, half sine wave

Note: 1. High Temperature Solder Exemption Applied, see EU Directive Annex Notes 7



## SMF5.0A THRU SMF170A

### ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER Uni-Polar	Marking Code	Breakdown Voltage $V_{BR} @ I_T$ (Volt)		TEST CURRENT $I_T$  mADC	RATED STANDOFF VOLTAGE $V_{WM}$  V	MAXIMUM REVERSE LEAKAGE $I_b @ V_{WM}$  ( $\mu$ A)	MAXIMUM CLAMPING VOLTAGE $V_C @ I_{PP}$  V	MAXIMUM PEAK PULSE CURRENT $I_{PP}$  A
		MIN	MAX					
SMF5.0A	5.0A / KE	6.4	7.0	10	5.0	400	9.2	21.7
SMF6.0A	6.0A / KG	6.67	7.37	10	6.0	400	10.3	19.4
SMF6.5A	6.5A / KK	7.22	7.98	10	6.5	250	11.2	17.9
SMF7.0A	7.0A / KM	7.78	8.6	10	7.0	100	12	16.7
SMF7.5A	7.5A / KP	8.33	9.21	1.0	7.5	50	12.9	15.5
SMF8.0A	8.0A / KR	8.89	9.83	1.0	8.0	25	13.6	14.7
SMF8.5A	8.5A / KT	9.44	10.4	1.0	8.5	10	14.4	13.9
SMF9.0A	9.0A / KV	10	11.1	1.0	9.0	5.0	15.4	13
SMF10A	10A / KX	11.1	12.3	1.0	10	2.5	17	11.8
SMF11A	11A / KZ	12.2	13.5	1.0	11	2.5	18.2	11
SMF12A	12A / LE	13.3	14.7	1.0	12	2.5	19.9	10.1
SMF13A	13A / LG	14.4	15.9	1.0	13	1.0	21.5	9.3
SMF14A	14A / LK	15.6	17.2	1.0	14	1.0	23.2	8.6
SMF15A	15A / LM	16.7	18.5	1.0	15	1.0	24.4	8.2
SMF16A	16A / LP	17.8	19.7	1.0	16	1.0	26	7.7
SMF17A	17A / LR	18.9	20.9	1.0	17	1.0	27.6	7.2
SMF18A	18A / LT	20	22.1	1.0	18	1.0	29.2	6.8
SMF20A	20A / LV	22.2	24.5	1.0	20	1.0	32.4	6.2
SMF22A	22A / LX	24.4	26.9	1.0	22	1.0	35.5	5.6
SMF24A	24A / LZ	26.7	29.5	1.0	24	1.0	38.9	5.1
SMF26A	26A / ME	28.9	31.9	1.0	26	1.0	42.1	4.8
SMF28A	28A / MG	31.1	34.4	1.0	28	1.0	45.4	4.4
SMF30A	30A / MK	33.3	36.8	1.0	30	1.0	48.4	4.1
SMF33A	33A / MM	36.7	40.6	1.0	33	1.0	53.3	3.8
SMF36A	36A / MP	40	44.2	1.0	36	1.0	58.1	3.4
SMF40A	40A / MR	44.4	49.1	1.0	40	1.0	64.5	3.1
SMF43A	43A / MT	47.8	52.8	1.0	43	1.0	69.4	2.9
SMF45A	45A / MV	50	55.3	1.0	45	1.0	72.7	2.8
SMF48A	48A / MX	53.3	58.9	1.0	48	1.0	77.4	2.6
SMF51A	51A / MZ	56.7	62.7	1.0	51	1.0	82.4	2.4
SMF54A	54A / NE	60	66.3	1.0	54	1.0	87.1	2.3
SMF58A	58A / NG	64.4	71.2	1.0	58	1.0	93.6	2.1
SMF60A	60A / NK	66.7	73.7	1.0	60	1.0	96.8	1.8
SMF64A	64A / NM	71.1	78.6	1.0	64	1.0	103	1.7
SMF70A	70A / NP	77.8	86	1.0	70	1.0	113	1.5
SMF75A	75A / NR	83.3	92.1	1.0	75	1.0	121	1.4
SMF78A	78A / NT	86.7	95.8	1.0	78	1.0	126	1.4
SMF85A	85A / NV	94.4	104	1.0	85	1.0	137	1.3
SMF90A	90A / NX	100	111	1.0	90	1.0	146	1.2
SMF100A	100 / NZ	111	123	1.0	100	1.0	162	1.1
SMF110A	110 / PE	122	135	1.0	110	1.0	177	1.0
SMF120A	120 / PG	133	147	1.0	120	1.0	193	0.9
SMF130A	130 / PK	144	159	1.0	130	1.0	209	0.8
SMF150A	150 / PM	167	185	1.0	150	1.0	243	0.7
SMF160A	160 / PP	178	197	1.0	160	1.0	259	0.7
SMF170A	170 / PR	189	209	1.0	170	1.0	275	0.6

## SMF5.0CA THRU SMF170CA

### ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER Bi-Polar	Marking Code	Breakdown Voltage $V_{BR} @ I_T$ (Volt)		TEST CURRENT $I_T$ mADC	RATED STANDOFF VOLTAGE $V_{WM}$ V	MAXIMUM REVERSE LEAKAGE $I_b @ V_{WM}$ ( $\mu$ A)	MAXIMUM CLAMPING VOLTAGE $V_C @ I_{PP}$ V	MAXIMUM PEAK PULSE CURRENT $I_{PP}$ A
		MIN	MAX					
SMF5.0CA	5.0CA / AE	6.4	7.0	10	5.0	400	9.2	21.7
SMF6.0CA	6.0CA / AG	6.67	7.37	10	6.0	400	10.3	19.4
SMF6.5CA	6.5CA / AK	7.22	7.98	10	6.5	250	11.2	17.9
SMF7.0CA	7.0CA / AM	7.78	8.6	10	7.0	100	12	16.7
SMF7.5CA	7.5CA / AP	8.33	9.21	1.0	7.5	50	12.9	15.5
SMF8.0CA	8.0CA / AR	8.89	9.83	1.0	8.0	25	13.6	14.7
SMF8.5CA	8.5CA / AT	9.44	10.4	1.0	8.5	10	14.4	13.9
SMF9.0CA	9.0CA / AV	10	11.1	1.0	9.0	5.0	15.4	13
SMF10CA	10CA / AX	11.1	12.3	1.0	10	2.5	17	11.8
SMF11CA	11CA / AZ	12.2	13.5	1.0	11	2.5	18.2	11
SMF12CA	12CA / BE	13.3	14.7	1.0	12	2.5	19.9	10.1
SMF13CA	13CA / BG	14.4	15.9	1.0	13	1.0	21.5	9.3
SMF14CA	14CA / BK	15.6	17.2	1.0	14	1.0	23.2	8.6
SMF15CA	15CA / BM	16.7	18.5	1.0	15	1.0	24.4	8.2
SMF16CA	16CA / BP	17.8	19.7	1.0	16	1.0	26	7.7
SMF17CA	17CA / BR	18.9	20.9	1.0	17	1.0	27.6	7.2
SMF18CA	18CA / BT	20	22.1	1.0	18	1.0	29.2	6.8
SMF20CA	20CA / BV	22.2	24.5	1.0	20	1.0	32.4	6.2
SMF22CA	22CA / BX	24.4	26.9	1.0	22	1.0	35.5	5.6
SMF24CA	24CA / BZ	26.7	29.5	1.0	24	1.0	38.9	5.1
SMF26CA	26CA / CE	28.9	31.9	1.0	26	1.0	42.1	4.8
SMF28CA	28CA / CG	31.1	34.4	1.0	28	1.0	45.4	4.4
SMF30CA	30CA / CK	33.3	36.8	1.0	30	1.0	48.4	4.1
SMF33CA	33CA / CM	36.7	40.6	1.0	33	1.0	53.3	3.8
SMF36CA	36CA / CP	40	44.2	1.0	36	1.0	58.1	3.4
SMF40CA	40CA / CR	44.4	49.1	1.0	40	1.0	64.5	3.1
SMF43CA	43CA / CT	47.8	52.8	1.0	43	1.0	69.4	2.9
SMF45CA	45CA / CV	50	55.3	1.0	45	1.0	72.7	2.8
SMF48CA	48CA / CX	53.3	58.9	1.0	48	1.0	77.4	2.6
SMF51CA	51CA / CZ	56.7	62.7	1.0	51	1.0	82.4	2.4
SMF54CA	54CA / DE	60	66.3	1.0	54	1.0	87.1	2.3
SMF58CA	58CA / DG	64.4	71.2	1.0	58	1.0	93.6	2.1
SMF60CA	60CA / DK	66.7	73.7	1.0	60	1.0	96.8	1.8
SMF64CA	64CA / DM	71.1	78.6	1.0	64	1.0	103	1.7
SMF70CA	70CA / DP	77.8	86	1.0	70	1.0	113	1.5
SMF75CA	75CA / DR	83.3	92.1	1.0	75	1.0	121	1.4
SMF78CA	78CA / DT	86.7	95.8	1.0	78	1.0	126	1.4
SMF85CA	85CA / DV	94.4	104	1.0	85	1.0	137	1.3
SMF90CA	90CA / DX	100	111	1.0	90	1.0	146	1.2
SMF100CA	100C / DZ	111	123	1.0	100	1.0	162	1.1
SMF110CA	110C / EE	122	135	1.0	110	1.0	177	1.0
SMF120CA	120C / EG	133	147	1.0	120	1.0	193	0.9
SMF130CA	130C / EK	144	159	1.0	130	1.0	209	0.8
SMF150CA	150C / EM	167	185	1.0	150	1.0	243	0.7
SMF160CA	160C / EP	178	197	1.0	160	1.0	259	0.7
SMF170CA	170C / ER	189	209	1.0	170	1.0	275	0.6

# SMF5.0CA THRU SMF170CA

## Electrical Characteristics

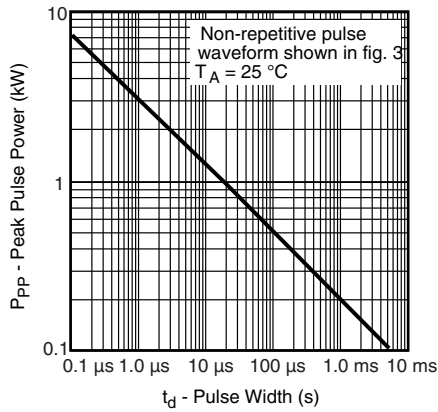


Fig. 1 - Peak Pulse Power Rating

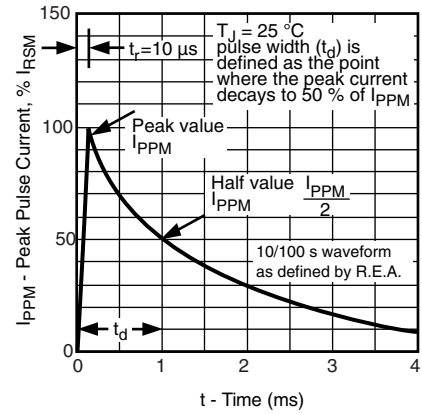


Fig. 3 - Pulse Waveform

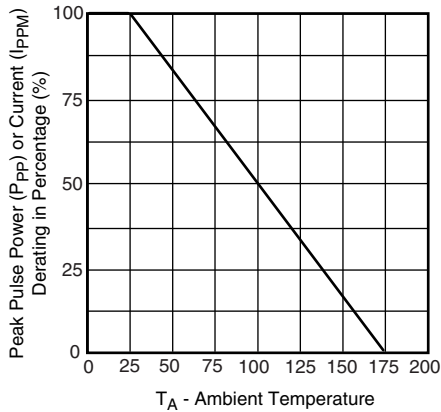


Fig. 2 - Pulse Derating Curve



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## Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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