600 Watt TVS
5.0 to 220 Volts

Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectionaand Bil directional
- 600 W peak pulse power capability with a 10/1000 μs waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast reponsse time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

Mechanical Data

- Polarity: Color Band Denotes Positive end(cathode) Except Bi-directional Types
- Maximum Soldering Temperature:260°C for 10 Seconds
- Terminals: Solderable Per MIL-STD-750, Method 2026

Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance :20°C/W Junction to Lead
- Thermal Resistance :15°C/W Junction to Case
- Thermal Resistance :100°C/W Junction to Ambient

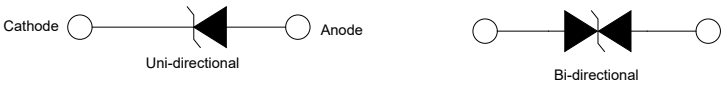
Electrical Characteristics @ 25°C Unless Otherwise Specified

Peak Pulse Power Surge Current on 10/1000μs Waveform	I_{PP}	See the Table	Note 3
Peak Pulse Power Dissipation	P_{PP}	600W	Note 3,4,5
Steady State Power Dissipation	$P_{M(AV)}$	5.0W	Note 6
Peak Forward Surge Current	I_{FSM}	100A	8.3 ms Single Half Sine-Wave Unidirectional Only

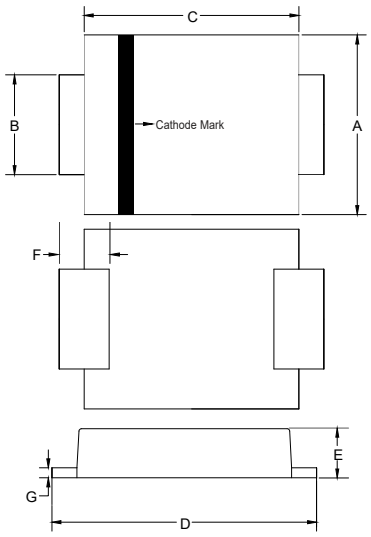
NOTES:

1. Halogen free "Green"products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. High Temperature Solder Exemption Applied, see EU Directive Annex 7a.
3. Non-repetitive current pulse, per Fig.3 and derated above T_A=25 °C per Fig.4
4. Mounted on 5.0mm^2 copper pads to each terminal.
5. Peak pulse current waveform is 10/1000us, with maximum duty Cycle of 0.01%.
6. Power dissipation, on infinite heat sink at T_L=75°C

Pin Configuration:

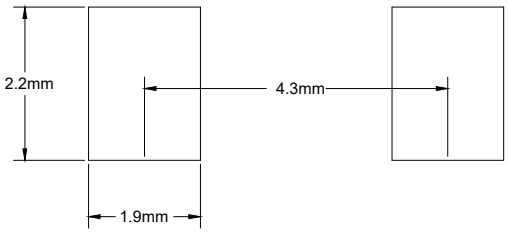


SMBF



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.134	0.150	3.40	3.80	
B	0.075	0.083	1.90	2.10	
C	0.163	0.175	4.15	4.45	
D	0.201	0.220	5.10	5.60	
E	0.041	0.061	1.05	1.55	
F	0.028	0.053	0.70	1.35	
G	0.006	0.010	0.15	0.25	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER		REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT I_{PP}(5)	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D(6)	MARKING CODE	
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	I_T (4)(mA)	(VOLTS)	(AMPS)	(μA)	UNI	BI
SMBF5.0A	SMBF5.0CA(4)	5	6.4	7.07	10	9.2	65.22	800	5V0A	5V0CA
SMBF6.0A	SMBF6.0CA	6	6.67	7.37	10	10.3	58.25	800	6V0A	6V0CA
SMBF6.5A	SMBF6.5CA	6.5	7.22	7.98	10	11.2	53.57	500	6V5A	6V5CA
SMBF7.0A	SMBF7.0CA	7	7.78	8.6	10	12	50	200	7V0A	7V0CA
SMBF7.5A	SMBF7.5CA	7.5	8.33	9.21	1	12.9	46.51	100	7V5A	7V5CA
SMBF8.0A	SMBF8.0CA	8	8.89	9.83	1	13.6	44.12	50	8V0A	8V0CA
SMBF8.5A	SMBF8.5CA	8.5	9.44	10.4	1	14.4	41.67	10	8V5A	8V5CA
SMBF9.0A	SMBF9.0CA	9	10	11.1	1	15.4	38.96	5	9V0A	9V0CA
SMBF10A	SMBF10CA	10	11.1	12.3	1	17	35.29	5	10A	10CA
SMBF11A	SMBF11CA	11	12.2	13.5	1	18.2	32.97	5	11A	11CA
SMBF12A	SMBF12CA	12	13.3	14.7	1	19.9	30.15	5	12A	12CA
SMBF13A	SMBF13CA	13	14.4	15.9	1	21.5	27.91	1	13A	13CA
SMBF14A	SMBF14CA	14	15.6	17.2	1	23.2	25.86	1	14A	14CA
SMBF15A	SMBF15CA	15	16.7	18.5	1	24.4	24.59	1	15A	15CA
SMBF16A	SMBF16CA	16	17.8	19.7	1	26	23.08	1	16A	16CA
SMBF17A	SMBF17CA	17	18.9	20.9	1	27.6	21.74	1	17A	17CA
SMBF18A	SMBF18CA	18	20	22.1	1	29.2	20.55	1	18A	18CA
SMBF19A	SMBF19CA	19	21.1	23.3	1	30.8	19.49	1	19A	19CA
SMBF20A	SMBF20CA	20	22.2	24.5	1	32.4	18.52	1	20A	20CA
SMBF22A	SMBF22CA	22	24.4	26.9	1	35.5	16.9	1	22A	22CA
SMBF24A	SMBF24CA	24	26.7	29.5	1	38.9	15.42	1	24A	24CA
SMBF26A	SMBF26CA	26	28.9	31.9	1	42.1	14.25	1	26A	26CA
SMBF28A	SMBF28CA	28	31.1	34.4	1	45.4	13.22	1	28A	28CA
SMBF30A	SMBF30CA	30	33.3	36.8	1	48.4	12.4	1	30A	30CA
SMBF33A	SMBF33CA	33	36.7	40.6	1	53.3	11.26	1	33A	33CA
SMBF36A	SMBF36CA	36	40	44.2	1	58.1	10.33	1	36A	36CA
SMBF40A	SMBF40CA	40	44.4	49.1	1	64.5	9.3	1	40A	40CA
SMBF43A	SMBF43CA	43	47.8	52.8	1	69.4	8.65	1	43A	43CA
SMBF45A	SMBF45CA	45	50	55.3	1	72.7	8.25	1	45A	45CA
SMBF48A	SMBF48CA	48	53.3	58.9	1	77.4	7.75	1	48A	48CA
SMBF51A	SMBF51CA	51	56.7	62.7	1	82.4	7.28	1	51A	51CA
SMBF54A	SMBF54CA	54	60	66.3	1	87.1	6.89	1	54A	54CA
SMBF58A	SMBF58CA	58	64.4	71.2	1	93.6	6.41	1	58A	58CA
SMBF60A	SMBF60CA	60	66.7	73.7	1	96.8	6.2	1	60A	60CA
SMBF64A	SMBF64CA	64	71.1	78.6	1	103	5.83	1	64A	64CA
SMBF70A	SMBF70CA	70	77.8	86	1	113	5.31	1	70A	70CA
SMBF75A	SMBF75CA	75	83.3	92.1	1	121	4.96	1	75A	75CA
SMBF78A	SMBF78CA	78	86.7	95.8	1	126	4.76	1	78A	78CA
SMBF80A	SMBF80CA	80	88.8	97.6	1	129.6	4.63	1	80A	80CA
SMBF85A	SMBF85CA	85	94.4	104	1	137	4.38	1	85A	85CA
SMBF90A	SMBF90CA	90	100	111	1	146	4.11	1	90A	90CA
SMBF100A	SMBF100CA	100	111	123	1	162	3.7	1	100A	100CA
SMBF110A	SMBF110CA	110	122	135	1	177	3.39	1	110A	110CA
SMBF120A	SMBF120CA	120	133	147	1	193	3.11	1	120A	120CA
SMBF130A	SMBF130CA	130	144	159	1	209	2.87	1	130A	130CA
SMBF140A	SMBF140CA	140	155	171	1	226.8	2.65	1	140A	140CA
SMBF150A	SMBF150CA	150	167	185	1	243	2.47	1	150A	150CA
SMBF160A	SMBF160CA	160	178	197	1	259	2.32	1	160A	160CA
SMBF170A	SMBF170CA	170	189	209	1	275	2.18	1	170A	170CA

Electrical Characteristics @ 25°C Unless Otherwise Specified

MCC PART NUMBER		REVERSE STAND-OFF VOLTAGE V_{WM}	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T (VOLTS)			MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT I_{PP}(5)	MAXIMUM REVERSE LEAKAGE @V_{WM} I_D(6)	MARKING CODE	
UNI-POLAR	BI-POLAR	(VOLTS)	MIN	MAX	I_T (4)(mA)	(VOLTS)	(AMPS)	(μA)	UNI	BI
SMBF180A	SMBF180CA	180	200	220	1	291.6	2.06	1	180A	180CA
SMBF190A	SMBF190CA	190	211	232	1	307.8	1.95	1	190A	190CA
SMBF200A	SMBF200CA	200	224	247	1	324	1.85	1	200A	200CA
SMBF220A	SMBF220CA	220	246	272	1	356	1.69	1	220A	220CA

(4) Pulse test $_p$≤50ms.
(5) Surge current waveform per Fig. 3
(6) For bi-directional types having V_{RWM} of 10 V and less, the I_R limit is doubled.
(7) For the bi-directional SMBJ5.0CA, the maximum V_{BR} is 7.25 V.

Curve Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

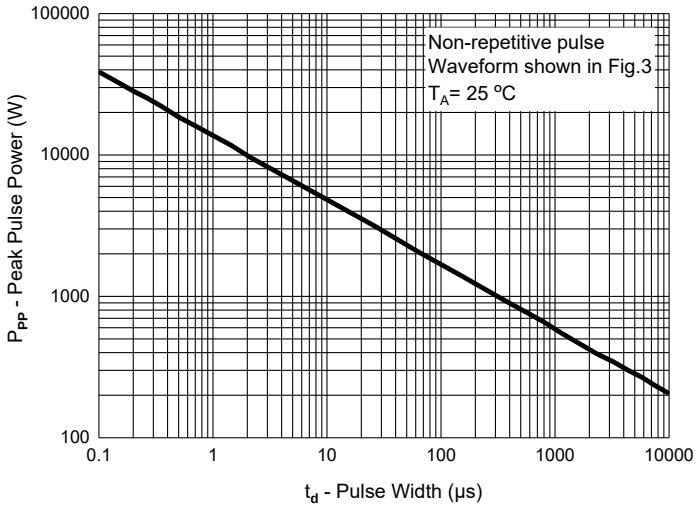


Fig. 2 - Typical Transient Thermal Impedance

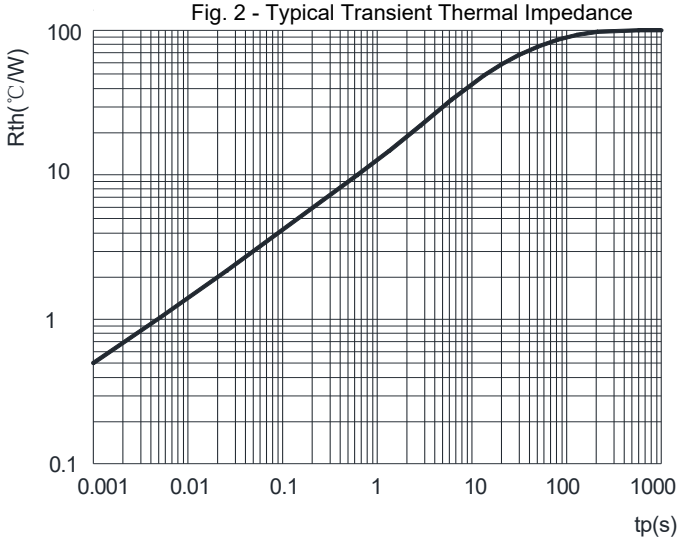


Fig. 3 - Pulse Waveform

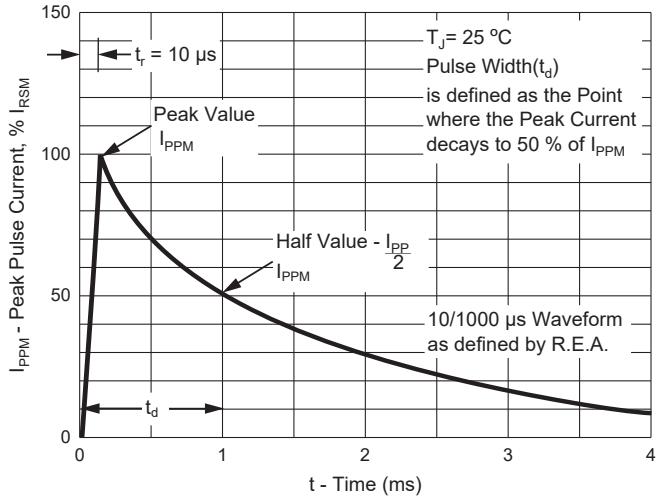


Fig. 4 - Pulse Derating Curve

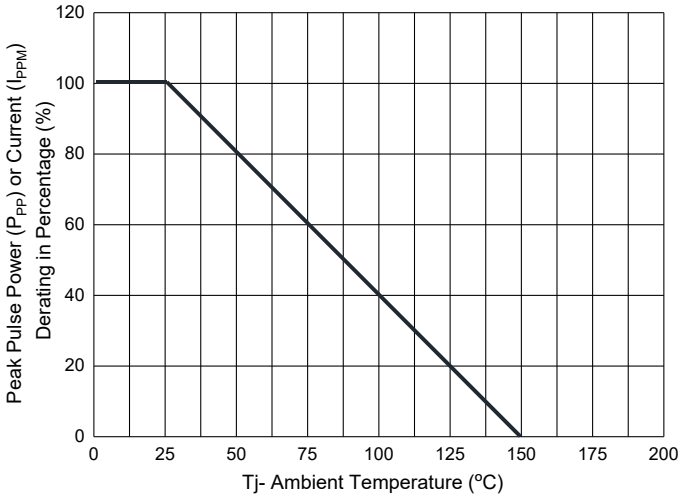


Fig. 5 - Maximum Non-Repetitive Peak Forward Surge Current

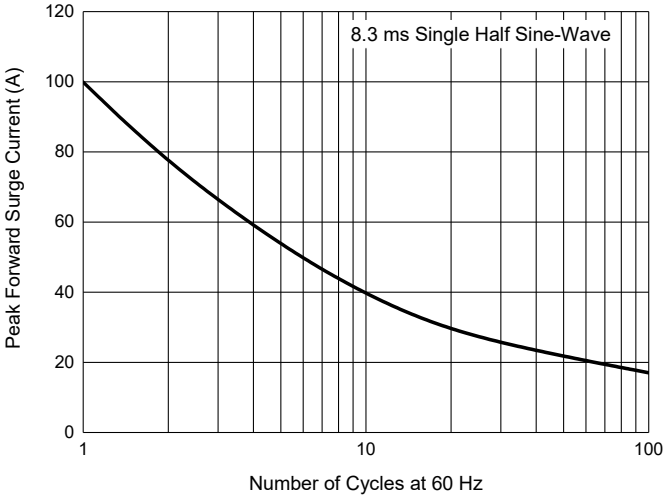
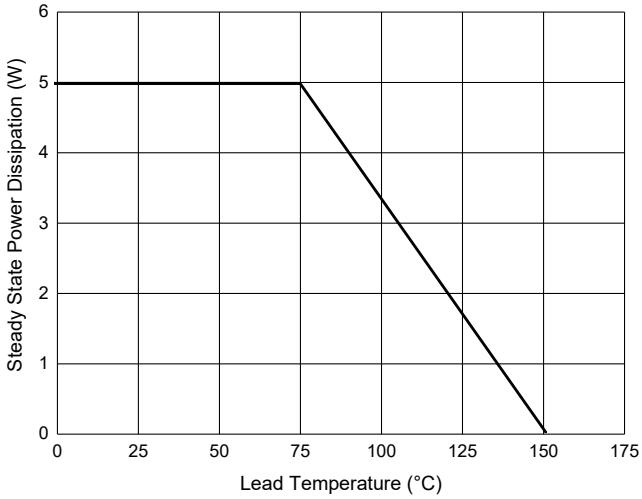


Fig. 6 - Steady State Power Dissipation



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:5Kpcs/Reel