

Surface mount transient voltage suppressor power 600 watts

Stand-Off Voltage: 6.8V~550V

**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: SMAF
- ◆Terminals: Solderable per MIL-STD-750, Method 2026
- ◆Approx. Weight: 57mg / 0.002oz

**Maximum Ratings and Electrical characteristics**

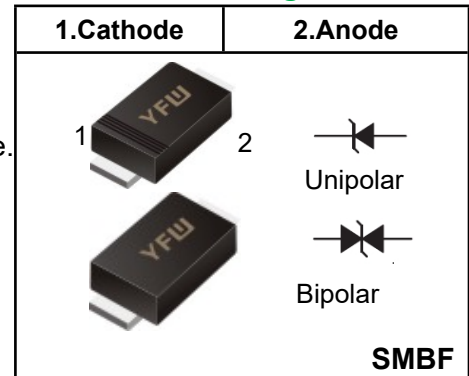
Ratings at 25 ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 s waveform ( Note1,Note2, Fig.1).	<b>P<sub>PPM</sub></b>	600	<b>W</b>
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3, Fig4).	<b>I<sub>FSM</sub></b> <b>(UNI)</b>	100	<b>A</b>
Peak Pulse Current on 10/1000 us waveform (Note 1) Fig 3	<b>I<sub>PPM</sub></b>	see Table 1	<b>A</b>
ESD Voltage per IEC6100-4-2	Contact	<b>V<sub>ESD1</sub></b>	<b>kV</b>
	Air	<b>V<sub>ESD2</sub></b>	
Typical Junction Capacitance at VR=4V, f=1MHz	<b>C<sub>j</sub></b>	390	<b>pF</b>
Typical Thermal Resistance Junction to Ambient(Note 2)	<b>R<sub>θJA</sub></b>	60	<b>°C</b>
Operating Junction Temperature and Storage Temperature Range	<b>T<sub>J</sub>,T<sub>STG</sub></b>	-55 to +150	<b>°C</b>

**NOTES:**

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub> = 25°C per Fig. 2.
2. Mounted on 5mm<sup>2</sup> copper pads to each terminal.
3. Peak Forward Surge Current : 8.3ms single half sine-wave Superimposed on rated load (JEDEC method).
4. Peak pulse power waveform is 10/1000µS.

**Pinning**



Characteristics at Ta = 25°C

Table 1

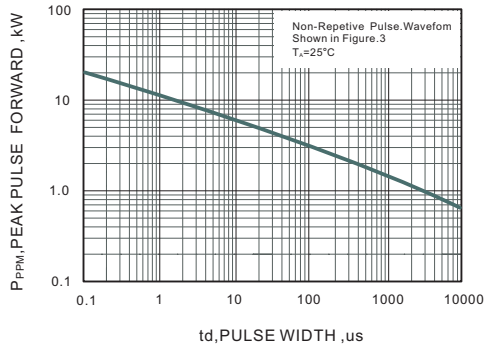
Type		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage	Peak Pulse Current	Package	
			V <sub>BR</sub> @ I <sub>T</sub>			I <sub>R</sub> @ V <sub>RWM</sub>				SMBF	
			V <sub>RWM</sub>	Min		Max	I <sub>T</sub>			UNI	BI
UNI	BI	V	V	V	mA	µA	µA	V	A	UNI	BI
<b>600W Transient Voltage Suppresso</b>											
P6SMBF6.8	P6SMBF6.8C	5.5	6.12	7.48	10	1000	2000	10.8	56	6.8	6.8C
P6SMBF6.8A	P6SMBF6.8CA	5.8	6.45	7.14	10	1000	2000	10.5	57	6.8A	6.8CA
P6SMBF7.5	P6SMBF7.5C	6.05	6.75	8.25	10	500	1000	11.7	51	7.5	7.5C
P6SMBF7.5A	P6SMBF7.5CA	6.4	7.13	7.88	10	500	1000	11.3	53	7.5A	7.5CA
P6SMBF8.2	P6SMBF8.2C	6.63	7.38	9.02	10	200	400	12.5	48	8.2	8.2C
P6SMBF8.2A	P6SMBF8.2CA	7.02	7.79	8.61	10	200	400	12.1	50	8.2A	8.2CA
P6SMBF9.1	P6SMBF9.1C	7.37	8.19	10	1	50	100	13.8	44	9.1	9.1C
P6SMBF9.1A	P6SMBF9.1CA	7.78	8.65	9.5	1	50	100	13.4	45	9.1A	9.1CA
P6SMBF10	P6SMBF10C	8.1	9	11	1	10	20	15	40	10	10C
P6SMBF10A	P6SMBF10CA	8.55	9.5	10.5	1	10	20	14.5	41	10A	10CA
P6SMBF11	P6SMBF11C	8.92	9.9	12.1	1	5	10	16.2	37	11	11C
P6SMBF11A	P6SMBF11CA	9.4	10.5	11.6	1	5	10	15.6	38	11A	11CA
P6SMBF12	P6SMBF12C	9.72	10.8	13.2	1	5	5	17.3	35	12	12C
P6SMBF12A	P6SMBF12CA	10.2	11.4	12.6	1	5	5	16.7	36	12A	12CA
P6SMBF13	P6SMBF13C	10.5	11.7	14.3	1	1	1	19	32	13	13C
P6SMBF13A	P6SMBF13CA	11.1	12.4	13.7	1	1	1	18.2	33	13A	13CA
P6SMBF15	P6SMBF15C	12.1	13.5	16.5	1	1	1	22	27	15	15C
P6SMBF15A	P6SMBF15CA	12.8	14.3	15.8	1	1	1	21.2	28	15A	15CA
P6SMBF16	P6SMBF16C	12.9	14.4	17.6	1	1	1	23.5	26	16	16C
P6SMBF16A	P6SMBF16CA	13.6	15.2	16.8	1	1	1	22.5	27	16A	16CA
P6SMBF18	P6SMBF18C	14.5	16.2	19.8	1	1	1	26.5	23	18	18C
P6SMBF18A	P6SMBF18CA	15.3	17.1	18.9	1	1	1	25.2	24	18A	18CA
P6SMBF20	P6SMBF20C	16.2	18	22	1	1	1	29.1	21	20	20C
P6SMBF20A	P6SMBF20CA	17.1	19	21	1	1	1	27.7	22	20A	20CA
P6SMBF22	P6SMBF22C	17.8	19.8	24.2	1	1	1	31.9	19	22	22C
P6SMBF22A	P6SMBF22CA	18.8	20.9	23.1	1	1	1	30.6	20	22A	22CA
P6SMBF24	P6SMBF24C	19.4	21.6	26.4	1	1	1	34.7	17	24	24C
P6SMBF24A	P6SMBF24CA	20.5	22.8	25.2	1	1	1	33.2	18	24A	24CA
P6SMBF27	P6SMBF27C	21.8	24.3	29.7	1	1	1	39.1	15	27	27C
P6SMBF27A	P6SMBF27CA	23.1	25.7	28.4	1	1	1	37.5	16	27A	27CA
P6SMBF30	P6SMBF30C	24.3	27	33	1	1	1	43.5	14	30	30C
P6SMBF30A	P6SMBF30CA	25.6	28.5	31.5	1	1	1	41.4	14.4	30A	30CA
P6SMBF33	P6SMBF33C	26.8	29.7	36.3	1	1	1	47.7	12.6	33	33C
P6SMBF33A	P6SMBF33CA	28.2	31.4	34.7	1	1	1	45.7	13.2	33A	33CA
P6SMBF36	P6SMBF36C	29.1	32.4	39.6	1	1	1	52	11.6	36	36C
P6SMBF36A	P6SMBF36CA	30.8	34.2	37.8	1	1	1	49.9	12	36A	36CA
P6SMBF39	P6SMBF39C	31.6	35.1	42.9	1	1	1	56.4	10.6	39	39C
P6SMBF39A	P6SMBF39CA	33.3	37.1	41	1	1	1	53.9	11.2	39A	39CA
P6SMBF43	P6SMBF43C	34.8	38.7	47.3	1	1	1	61.9	9.6	43	43C
P6SMBF43A	P6SMBF43CA	36.8	40.9	45.2	1	1	1	59.3	10.1	43A	43CA
P6SMBF47	P6SMBF47C	38.1	42.3	51.7	1	1	1	67.8	8.9	47	47C
P6SMBF47A	P6SMBF47CA	40.2	44.7	49.4	1	1	1	64.8	9.3	47A	47CA
P6SMBF51	P6SMBF51C	41.3	45.9	56.1	1	1	1	73.5	8.2	51	51C
P6SMBF51A	P6SMBF51CA	43.6	48.5	53.6	1	1	1	70.1	8.6	51A	51CA
P6SMBF56	P6SMBF56C	45.6	50.4	61.6	1	1	1	80.5	7.4	56	56C
P6SMB56A	P6SMB56CA	47.8	53.2	58.8	1	1	1	77	7.8	56A	56CA

Characteristics at Ta = 25°C

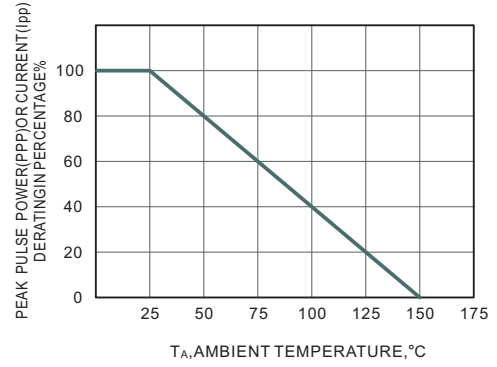
Table 1

Type		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage	Peak Pulse Current	Package	
			V <sub>BR</sub> @ I <sub>T</sub>			I <sub>R</sub> @ V <sub>RWM</sub>				SMBF	
			V <sub>RWM</sub>	Min		Max	I <sub>T</sub>			UNI	BI
UNI	BI	V	V	V	mA	μA	μA	V	A	UNI	BI
<b>600W Transient Voltage Suppresso</b>											
P6SMBF62	P6SMBF62C	50.2	55.8	68.2	1	1	1	89	6.8	62	62C
P6SMBF62A	P6SMBF62CA	53	58.9	65.1	1	1	1	85	7.1	62A	62CA
P6SMBF68	P6SMBF68C	55.1	61.2	74.8	1	1	1	98	6.1	68	68C
P6SMBF68A	P6SMBF68CA	58.1	64.6	71.4	1	1	1	92	6.5	68A	68CA
P6SMBF75	P6SMBF75C	60.7	67.5	82.5	1	1	1	108	5.5	75	75C
P6SMBF75A	P6SMBF75CA	64.1	71.3	78.8	1	1	1	103	5.8	75A	75CA
P6SMBF82	P6SMBF82C	66.4	73.8	90.2	1	1	1	118	5.1	82	82C
P6SMBF82A	P6SMBF82CA	70.1	77.9	86.1	1	1	1	113	5.3	82A	82CA
P6SMBF91	P6SMBF91C	73.7	81.9	100	1	1	1	131	4.5	91	91C
P6SMBF91A	P6SMBF91CA	77.8	86.5	95.5	1	1	1	125	4.8	91A	91CA
P6SMBF100	P6SMBF100C	81	90	110	1	1	1	144	4.2	100	100C
P6SMBF100A	P6SMBF100CA	85.5	95	105	1	1	1	137	4.4	100A	100CA
P6SMBF110	P6SMBF110C	89.2	99	121	1	1	1	158	3.8	110	110C
P6SMBF110A	P6SMBF110CA	94	105	116	1	1	1	152	4	110A	110CA
P6SMBF120	P6SMBF120C	97.2	108	132	1	1	1	173	3.5	120	120C
P6SMBF120A	P6SMBF120CA	102	114	126	1	1	1	165	3.6	120A	120CA
P6SMBF130	P6SMBF130C	105	117	143	1	1	1	187	3.2	130	130C
P6SMBF130A	P6SMBF130CA	111	124	137	1	1	1	179	3.3	130A	130CA
P6SMBF150	P6SMBF150C	121	135	165	1	1	1	215	2.8	150	150C
P6SMBF150A	P6SMBF150CA	128	143	158	1	1	1	207	2.9	150A	150CA
P6SMBF160	P6SMBF160C	130	144	176	1	1	1	230	2.6	160	160C
P6SMBF160A	P6SMBF160CA	136	152	168	1	1	1	219	2.7	160A	160CA
P6SMBF170	P6SMBF170C	138	153	187	1	1	1	244	2.5	170	170C
P6SMBF170A	P6SMBF170CA	145	162	179	1	1	1	234	2.6	170A	170CA
P6SMBF180	P6SMBF180C	146	162	198	1	1	1	258	2.3	180	180C
P6SMBF180A	P6SMBF180CA	154	171	189	1	1	1	246	2.4	180A	180CA
P6SMBF200	P6SMBF200C	162	180	220	1	1	1	287	2.1	200	200C
P6SMBF200A	P6SMBF200CA	171	190	210	1	1	1	274	2.2	200A	200CA
P6SMBF220	P6SMBF220C	175	198	242	1	1	1	344	1.8	220	220C
P6SMBF220A	P6SMBF220CA	185	209	231	1	1	1	328	1.9	220A	220CA
P6SMBF250	P6SMBF250C	202	225	275	1	1	1	360	1.7	250	250C
P6SMBF250A	P6SMBF250CA	214	237	263	1	1	1	344	1.8	250A	250CA
P6SMBF300A	-	256	285	315	1	1	-	414	1.5	300A	-
P6SMBF350A	-	300	332	368	1	1	-	482	1.3	350A	-
P6SMBF400A	-	342	380	420	1	1	-	548	1.1	400A	-
P6SMBF440A	-	376	418	462	1	1	-	602	1	440A	-
P6SMBF480A	-	408	456	504	1	1	-	658	0.9	480A	-
P6SMBF510A	-	434	485	535	1	1	-	698	0.9	510A	-
P6SMBF530A	-	450	504	556	1	1	-	725	0.8	530A	-
P6SMBF540A	-	459	513	567	1	1	-	740	0.8	540A	-
P6SMBF550A	-	467	523	577	1	1	-	760	0.8	550A	-

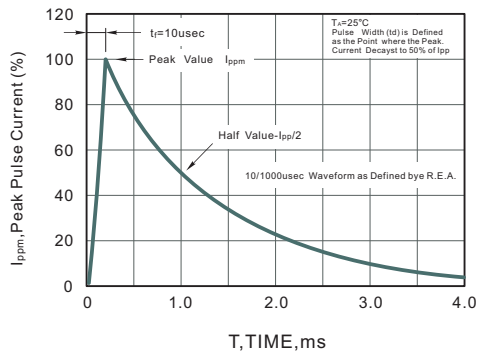
**Fig.1 Peak Pulse Power Rating Curve**



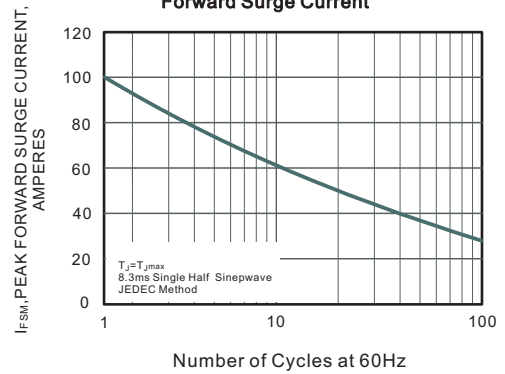
**Fig.2 Forward Current Derating Curve**



**Fig.3 Pulse Waveform**



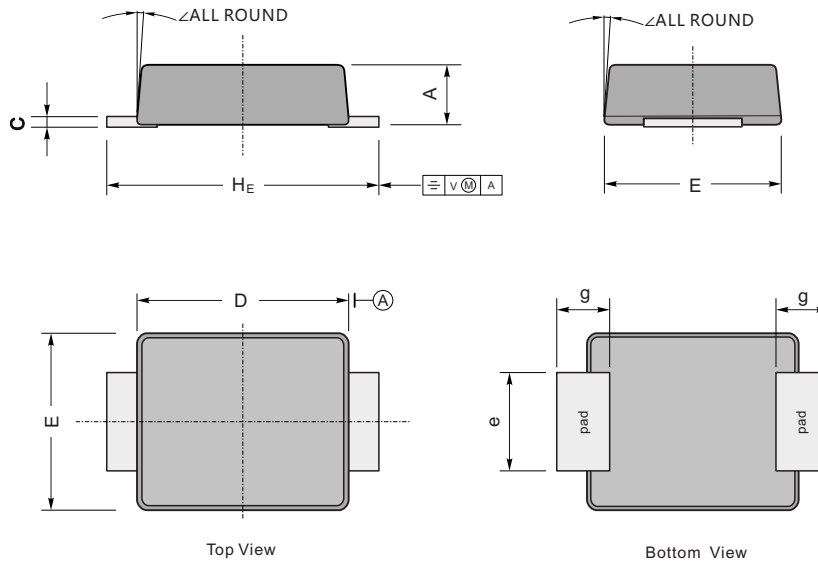
**Fig.4 Maximum Non-Repetitive Peak Forward Surge Current**



**Package Outline**

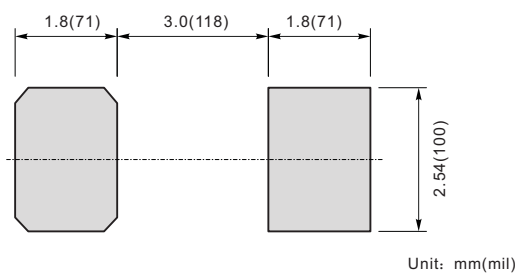
**SMBF**

Plastic surface mounted package; 2 leads



UNIT		A	C	D	E	$H_E$	e	g	$\angle$
mm	max	1.3	0.26	4.4	3.7	5.5	2.2	1.0	9°
	min	1.1	0.18	4.2	3.5	5.1	1.9		
mil	max	51	10	173	146	216	86	40	
	min	43	7	165	138	200	75		

**The recommended mounting pad size**



**Summary of Packing Options**

Package	Packing Description	Packing Quantity	Industry Standard
SMBF	Tape/Reel, 13" reel	5000	EIA-481-1