



## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

### P6SMB6.8 THRU P6SMB200

VOLTAGE RANGE  
POWER

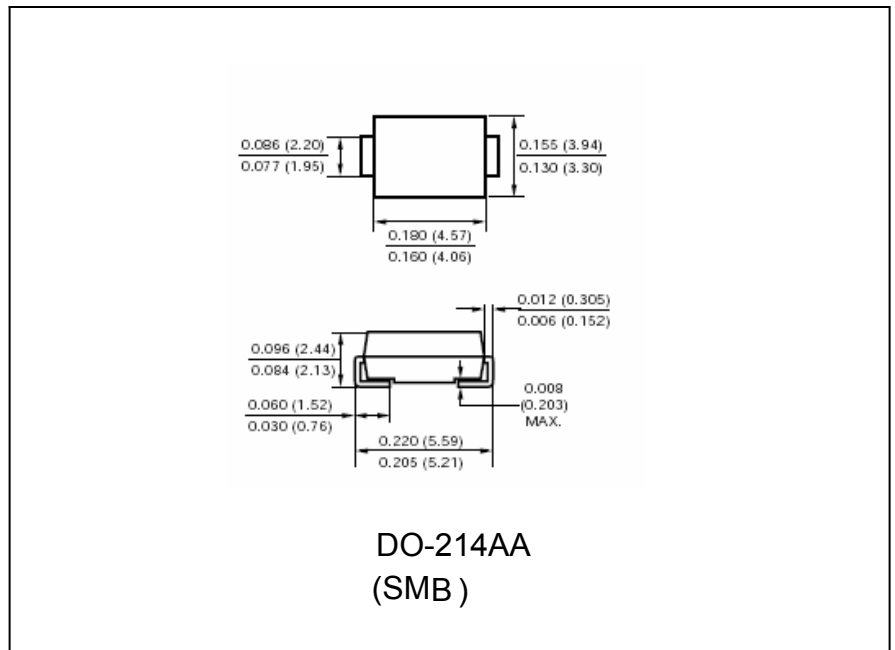
6.8 to 200 Volts  
600 Watts

#### FEATURES

- Glass passivated chip junction
- 600W surge capacity @ 10/1000  $\mu$ Sec wave form
- Fast response, typically less then 1 pSec
- Low Zener impedance
- Excellent clamping capability
- Available in either “J” lead (P6SMB)
- High temperature soldering guaranteed: 250°C/ seconds at terminals

#### MECHANICAL DATA

- Case: transfer molded plastic
- Epoxy: UL94V – 0 rate flame retardant
- Polarity: Color band denotes cathode end, except on bipolar parts which have no band
- Terminals: solderable per MIL-STD-202E method 208C
- Weight: 0.003 ounce, 0.093 gram



#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified

	SYMBOLS		UNIT
Peak Power Dissipation 10/1000 $\mu$ S waveform (Note 1,2)	P <sub>PPM</sub>	600	Watts
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method) (Note 2)	I <sub>FSM</sub>	100	Amps
Operating Junction Temperature Range	T <sub>J</sub>	(-55 to +150)	°C
Storage Temperature Range	T <sub>STG</sub>	(-55 to +150)	°C

#### Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated to T<sub>A</sub> = 25°C per Fig. 2.
2. Mounted on copper pad area 0.2" x 0.2" x 0.0011" (5mm x 5mm x .03mm) at each terminal
3. 8.3ns single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minute, maximum.
4. For bipolar devices add a C to the part number, i.e. P6SMB5.0C or P6SMB5.0CA
5. Electrical characteristics apply in both directions for bipolar devices



## RATINGS AND CHARACTERISTIC CURVES P6SMB6.8 THRU P6SMB200

For Bipolar devices add a "C" to the part number, i. e. P6SMB6.8C or P6SMB6.8CA

Device		Device Marking Code		Standoff Voltage	Breakdown Voltage (V <sub>BR</sub> )		Test Current	Maximum Clamping Voltage @ I <sub>PP</sub>	Peak Pulse Current	Reverse leakage @ V <sub>RWM</sub>
					Min	Max				
		Uni	Bi	V <sub>RWM</sub> Volts	Volts		I <sub>T</sub> mA	V <sub>C</sub> Volts	I <sub>PP</sub> Amps	I <sub>R</sub> μAmps
P6SMB6.8	P6SMBG6.8	6V8	6V8C	5.5	6.12	7.48	10	10.8	57.1	1000
P6SMB6.8A	P6SMBG6.8A	6V8A	6V8CA	5.8	6.46	7.14	10	10.5	57.1	1000
P6SMB7.5	P6SMBG7.5	7V5	7V5C	6.05	6.75	8.25	10	11.7	53.1	500
P6SMB7.5A	P6SMBG7.5A	7V5A	7V5CA	6.4	7.13	7.88	10	11.3	53.1	500
P6SMB8.2	P6SMBG8.2	8V2	8V2C	6.63	7.38	9.02	10	12.5	49.6	200
P6SMB8.2A	P6SMBG8.2A	8V2A	8V2CA	7.02	7.79	8.61	10	12.1	49.6	200
P6SMB9.1	P6SMBG9.1	9V1	9V1C	7.37	8.19	10	1	13.8	44.8	50
P6SMB9.1A	P6SMBG9.1A	9V1A	9V1CA	7.78	8.65	9.55	1	13.4	44.8	50
P6SMB10	P6SMBG10	10	10C	8.1	9.0	11	1	15	41.4	10
P6SMB10A	P6SMBG10A	10A	10CA	8.55	9.5	10.5	1	14.5	41.4	10
P6SMB11	P6SMBG11	11	11C	8.92	9.9	12.1	1	16.2	38.5	5
P6SMB11A	P6SMBG11A	11A	11CA	9.4	10.5	11.6	1	15.6	38.5	5
P6SMB12	P6SMBG12	12	12C	9.72	10.8	13.2	1	17.3	35.9	5
P6SMB12A	P6SMBG12A	12A	12CA	10.2	11.4	12.6	1	16.7	35.9	5
P6SMB13	P6SMBG13	13	13C	10.5	11.7	14.3	1	19	33.0	5
P6SMB13A	P6SMBG13A	13A	13CA	11.1	12.4	13.7	1	18.2	33.0	5
P6SMB15	P6SMBG15	15	15C	12.1	13.5	16.5	1	22	28.3	5
P6SMB15A	P6SMBG15A	15A	15CA	12.8	14.3	15.8	1	21.2	28.3	5
P6SMB16	P6SMBG16	16	16C	12.9	14.4	17.6	1	23.5	26.7	5
P6SMB16A	P6SMBG16A	16A	16CA	13.6	15.2	16.8	1	22.5	26.7	5
P6SMB18	P6SMBG18	18	18C	14.5	16.2	19.8	1	26.5	23.8	5
P6SMB18A	P6SMBG18A	18A	18CA	15.3	17.1	18.9	1	25.2	23.8	5
P6SMB20	P6SMBG20	20	20C	16.2	18	22	1	29.1	21.7	5
P6SMB20A	P6SMBG20A	20A	20CA	17.1	19	21	1	27.7	21.7	5
P6SMB22	P6SMBG22	22	22C	17.8	19.8	24.2	1	31.9	19.6	5
P6SMB22A	P6SMBG22A	22A	22CA	18.8	20.9	23.1	1	30.6	19.6	5
P6SMB24	P6SMBG24	24	24C	19.4	21.6	26.4	1	34.7	18.1	5
P6SMB24A	P6SMBG24A	24A	24CA	20.5	22.8	25.2	1	33.2	18.1	5
P6SMB27	P6SMBG27	27	27C	21.8	24.3	29.7	1	39.1	16.0	5
P6SMB27A	P6SMBG27A	27A	27CA	23.1	25.7	28.4	1	37.5	16.0	5
P6SMB30	P6SMBG30	30	30C	24.3	27	33	1	43.5	14.5	5
P6SMB30A	P6SMBG30A	30A	30CA	25.6	28.5	31.5	1	41.4	14.5	5
P6SMB33	P6SMBG33	33	33C	28.6	29.7	36.3	1	47.7	13.1	5
P6SMB33A	P6SMBG33A	33A	33CA	28.2	31.4	34.7	1	45.7	13.1	5
P6SMB36	P6SMBG36	36	36C	29.1	32.4	39.6	1	52	12.0	5
P6SMB36A	P6SMBG36A	36A	36CA	30.8	34.2	37.8	1	49.9	12.0	5
P6SMB39	P6SMBG39	39	39C	31.6	35.1	42.9	1	56.4	11.1	5
P6SMB39A	P6SMBG39A	39A	39CA	33.3	37.1	41	1	53.9	11.1	5
P6SMB43	P6SMBG43	43	43C	34.8	38.7	47.3	1	61.9	10.1	5
P6SMB43A	P6SMBG43A	43A	43CA	36.8	40.9	45.2	1	59.3	10.1	5
P6SMB47	P6SMBG47	47	47C	38.1	42.3	51.7	1	67.8	9.3	5
P6SMB47A	P6SMBG47A	47A	47CA	40.2	44.7	49.4	1	64.8	9.3	5
P6SMB51	P6SMBG51	51	51C	41.3	45.9	56.1	1	73.5	8.6	5
P6SMB51A	P6SMBG51A	51A	51CA	43.6	48.5	53.6	1	70.1	8.6	5
P6SMB56	P6SMBG56	56	56C	45.4	50.4	61.6	1	80.5	7.8	5
P6SMB56A	P6SMBG56A	56A	56CA	47.8	53.2	58.8	1	77	7.8	5
P6SMB62	P6SMBG62	62	62C	50.2	55.8	68.2	1	89	7.1	5
P6SMB62A	P6SMBG62A	62A	62CA	53	58.9	65.1	1	85	7.1	5
P6SMB68	P6SMBG68	68	68C	55.1	61.2	74.8	1	98	6.5	5
P6SMB68A	P6SMBG68A	68A	68CA	58.1	64.6	71.4	1	92	6.5	5
P6SMB75	P6SMBG75	75	75C	60.7	67.5	82.5	1	108	5.8	5
P6SMB75A	P6SMBG75A	75A	75CA	64.1	71.3	78.8	1	103	5.8	5
P6SMB82	P6SMBG82	82	82C	66.4	73.8	90.2	1	118	5.3	5
P6SMB82A	P6SMBG82A	82A	82CA	70.1	77.9	86.1	1	113	5.3	5
P6SMB91	P6SMBG91	91	91C	73.7	81.9	100	1	131	4.8	5
P6SMB91A	P6SMBG91A	91A	91CA	77.8	86.5	95.5	1	125	4.8	5
P6SMB100	P6SMBG100	100	100C	81	90	110	1	144	4.4	5
P6SMB100A	P6SMBG100A	100A	100CA	85.5	95	105	1	137	4.4	5



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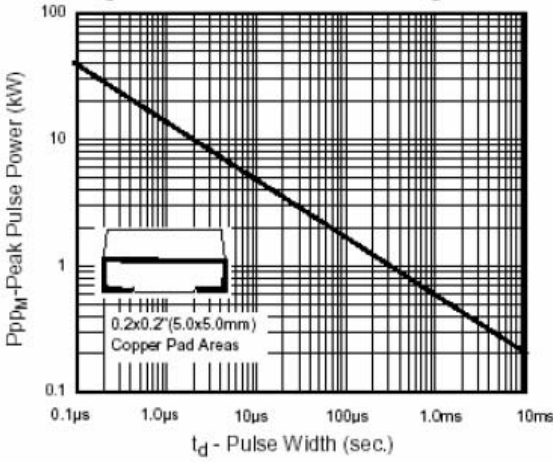
Device		Device Marking Code		Standoff Voltage	Breakdown Voltage ( $V_{BR}$ )		Test Current	Maximum Clamping Voltage @ $I_{PP}$	Peak Pulse Current	Reverse leakage @ $V_{RWM}$
					Min	Max				
		Uni	Uni	$V_{RWM}$ Volts	Volts		$I_T$ mA	$V_C$ Volts	$I_{PP}$ Amps	$I_R$ $\mu$ Amps
P6SMB110	P6SMBG110	110	110C	89.2	99	121	1	158	3.9	5
P6SMB110A	P6SMBG110A	110A	110CA	94	105	116	1	152	3.9	5
P6SMB120	P6SMBG120	120	120C	97.2	108	132	1	173	3.6	5
P6SMB120A	P6SMBG120A	120A	120CA	102	114	126	1	165	3.6	5
P6SMB130	P6SMBG130	130	130C	106	117	143	1	187	3.4	5
P6SMB130A	P6SMBG130A	130A	130CA	111	124	137	1	179	3.4	5
P6SMB150	P6SMBG150	140	140C	121	135	165	1	215	2.9	5
P6SMB150A	P6SMBG150A	150A	150CA	128	143	158	1	207	2.9	5
P6SMB160	P6SMBG160	160	160C	130	144	176	1	230	2.7	5
P6SMB160A	P6SMBG160A	160A	160CA	136	152	168	1	219	2.7	5
P6SMB170	P6SMBG170	170	170C	138	153	187	1	244	2.6	5
P6SMB170A	P6SMBG170A	170A	170CA	145	162	179	1	234	2.6	5
P6SMB180	P6SMBG180	180	180C	146	162	198	1	258	2.5	5
P6SMB180A	P6SMBG180A	180A	180CA	154	171	189	1	246	2.6	5
P6SMB200	P6SMBG200	200	200C	162	180	220	1	287	2.2	5
P6SMB200A	P6SMBG200A	200A	200CA	171	190	210	1	274	2.2	5

**Notes**

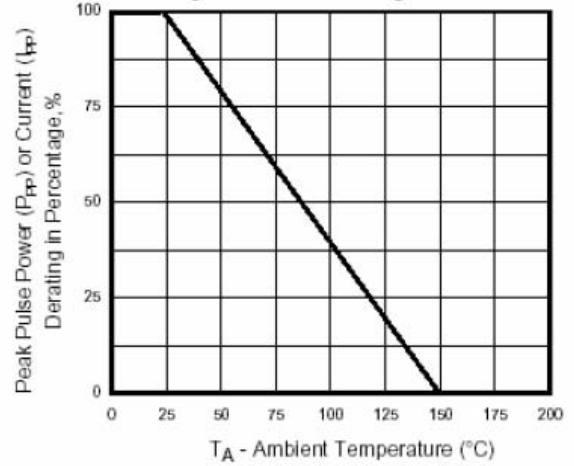
1. For bidirectional parts with  $V_{RWM}$  of 10V or less, the  $I_R$  limit is doubled.

**RATINGS AND CHARACTERISTIC CURVES P6SMB6.8 THRU P6SMB200**

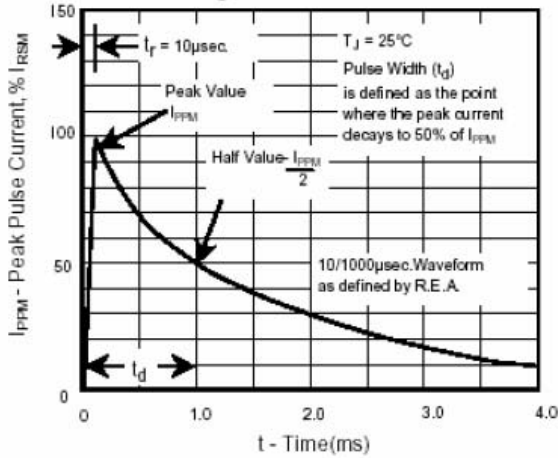
**Fig. 1 - Peak Pulse Power Rating Curve**



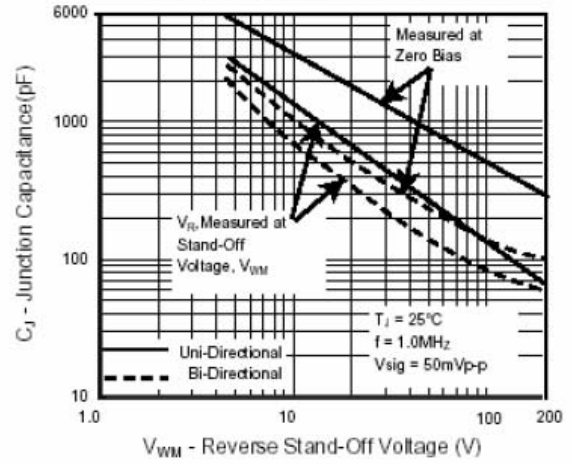
**Fig.2 - Pulse Derating Curve**



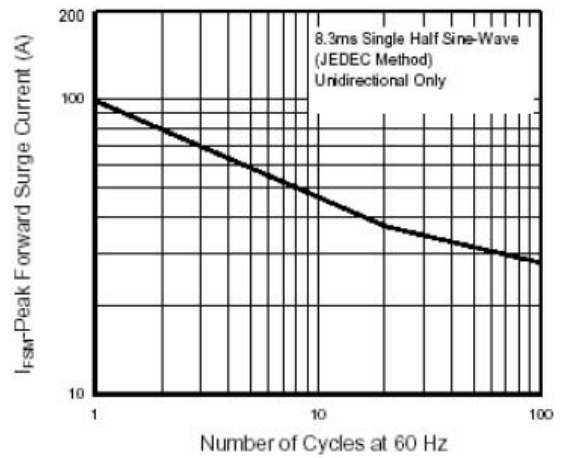
**Fig.3 - Pulse Waveform**



**Fig.4 - Typical Junction Capacitance**



**Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current**



**Fig. 5 - Typ. Transient Thermal Impedance**

