

P6SMB6.8A - P6SMB540A

V_{BR} : 6.8 - 540 Volts
P_{PK} : 600 Watts

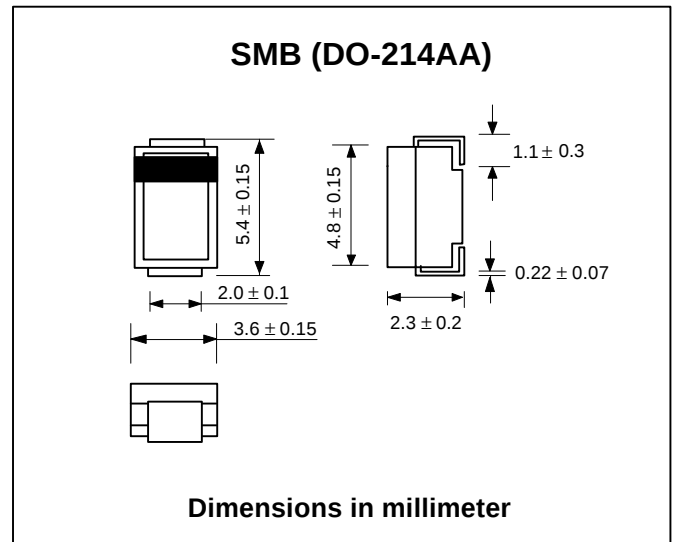
FEATURES :

- * 600W surge capability at 1ms
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time : typically less than 1.0 ps from 0 volt to V_{BR(min.)}
- * Typical I_R less than 1μA above 10V
- * **Pb / RoHS Free**

MECHANICAL DATA

- * Case : SMB Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Polarity : Color band denotes cathode end except Bipolar.
- * Mounting position : Any
- * Weight : 0.093 grams

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional use C or CA Suffix
 Electrical characteristics apply in both directions

MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	P _{PK}	Minimum 600	Watts
Steady State Power Dissipation at T _L = 75 °C	P _D	5.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I _{FSM}	100	Amps.
Operating and Storage Temperature Range	T _J , T _{STG}	- 55 to + 150	°C

Notes :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on copper Lead area at 5.0 mm² (0.013 mm thick).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per Minutes maximum.

ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

Type No.	Breakdown Voltage @ It (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Temperature Co-efficient of VBR				
	VBR (V)		It						VRWM	IR	IRSM	VRSM
	Min.	Max.	(mA)						(V)	(μA)	(A)	(V)
P6SMB6.8A	6.45	7.14	10	5.80	1000	57.0	10.5	0.057				
P6SMB7.5A	7.13	7.88	10	6.40	500	53.0	11.3	0.061				
P6SMB8.2A	7.79	8.61	10	7.02	200	50.0	12.1	0.065				
P6SMB9.1A	8.65	9.55	1.0	7.78	50	45.0	13.4	0.068				
P6SMB10A	9.50	10.5	1.0	8.55	10	41.0	14.5	0.073				
P6SMB11A	10.5	11.6	1.0	9.40	5.0	38.0	15.6	0.075				
P6SMB12A	11.4	12.6	1.0	10.2	5.0	36.0	16.7	0.078				
P6SMB13A	12.4	13.7	1.0	11.1	5.0	33.0	18.2	0.081				
P6SMB15A	14.3	15.8	1.0	12.8	5.0	28.0	21.2	0.084				
P6SMB16A	15.2	16.8	1.0	13.6	5.0	27.0	22.5	0.086				
P6SMB18A	17.1	18.9	1.0	15.3	5.0	24.0	25.2	0.088				
P6SMB20A	19.0	21.0	1.0	17.1	5.0	22.0	27.7	0.090				
P6SMB22A	20.9	23.1	1.0	18.8	5.0	20.0	30.6	0.092				
P6SMB24A	22.8	25.2	1.0	20.5	5.0	18.0	33.2	0.094				
P6SMB27A	25.7	28.4	1.0	23.1	5.0	16.0	37.5	0.096				
P6SMB30A	28.5	31.5	1.0	25.6	5.0	14.4	41.4	0.097				
P6SMB33A	31.4	34.7	1.0	28.2	5.0	13.2	45.7	0.098				
P6SMB36A	34.2	37.8	1.0	30.8	5.0	12.0	49.9	0.099				
P6SMB39A	37.1	41.0	1.0	33.3	5.0	11.2	53.9	0.100				
P6SMB43A	40.9	45.2	1.0	36.8	5.0	10.1	59.3	0.101				
P6SMB47A	44.7	49.4	1.0	40.2	5.0	9.3	64.8	0.101				
P6SMB51A	48.5	53.6	1.0	43.6	5.0	8.6	70.1	0.102				
P6SMB56A	53.2	58.8	1.0	47.8	5.0	7.8	77.0	0.103				
P6SMB62A	58.9	65.1	1.0	53.0	5.0	7.1	85.0	0.104				
P6SMB68A	64.6	71.4	1.0	58.1	5.0	6.5	92.0	0.104				
P6SMB75A	71.3	78.8	1.0	64.1	5.0	5.8	103	0.105				
P6SMB82A	77.9	86.1	1.0	70.1	5.0	5.3	113	0.105				
P6SMB91A	86.5	95.5	1.0	77.8	5.0	4.8	125	0.106				
P6SMB100A	95.0	105	1.0	85.5	5.0	4.4	137	0.106				
P6SMB110A	105	116	1.0	94.0	5.0	4.0	152	0.107				
P6SMB120A	114	126	1.0	102	5.0	3.6	165	0.107				
P6SMB130A	124	137	1.0	111	5.0	3.3	179	0.107				
P6SMB150A	143	158	1.0	128	5.0	2.9	207	0.108				
P6SMB160A	152	168	1.0	136	5.0	2.7	219	0.108				
P6SMB170A	162	179	1.0	145	5.0	2.6	234	0.108				
P6SMB180A	171	189	1.0	154	5.0	2.4	246	0.108				
P6SMB200A	190	210	1.0	171	5.0	2.2	274	0.108				
P6SMB220A	209	231	1.0	185	5.0	1.83	328	0.108				
P6SMB250A	237	263	1.0	214	5.0	1.75	344	0.110				
P6SMB300A	285	315	1.0	256	5.0	1.45	414	0.110				
P6SMB350A	332	368	1.0	300	5.0	1.25	482	0.110				
P6SMB400A	380	420	1.0	342	5.0	1.10	548	0.110				
P6SMB440A	418	462	1.0	376	5.0	1.00	602	0.110				
P6SMB480A	456	504	1.0	408	5.0	0.91	658	0.110				
P6SMB510A	485	535	1.0	434	5.0	0.86	698	0.110				
P6SMB540A	513	567	1.0	459	5.0	0.81	740	0.110				

Notes:

- (1) V_{BR} measured after I_t applied for 300 μs , I_t = square wave pulse or equivalent.
- (2) V_F = 3.5 V_{max} , I_F = 50 Amps. (6.8 Volts thru 91 Volts)
 V_F = 5.0 V_{max} , I_F = 50 Amps. (100 Volts thru 540 Volts) per 1/2 square or equivalent sine wave.
 PW = 8.3 ms, duty cycle = 4 pulses per minute maximum.
- (3) For Bipolar types moving V_R of 10 Volts and under, the I_R limit is doubled.
- (4) "P6SMB" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (P6SMB SERIES)

FIG.1 - PULSE DERATING CURVE

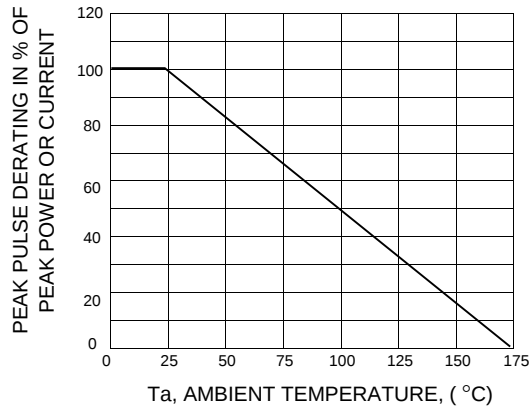


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

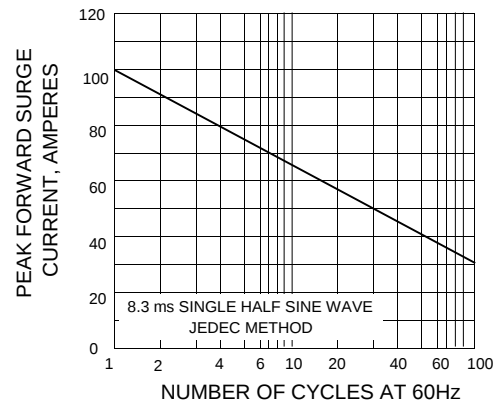


FIG.3 - STEADY STATE POWER DERATING

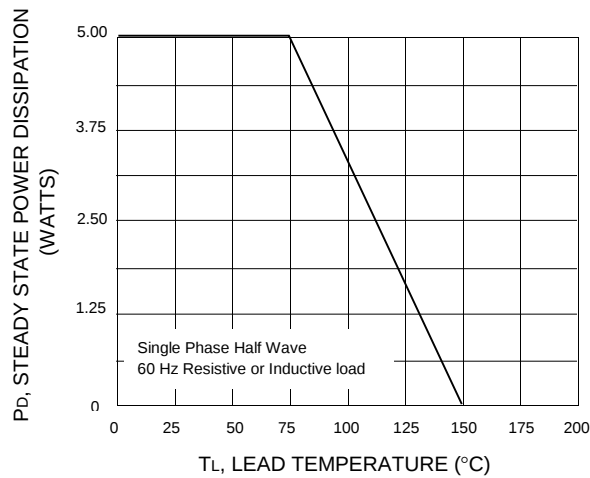


FIG.4 - PULSE RATING CURVE

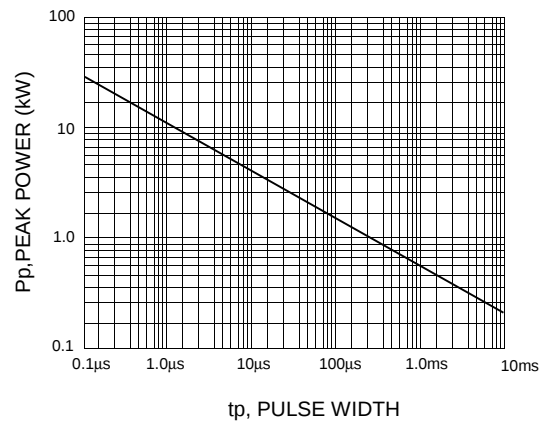


FIG.5 - PULSE WAVEFORM

