

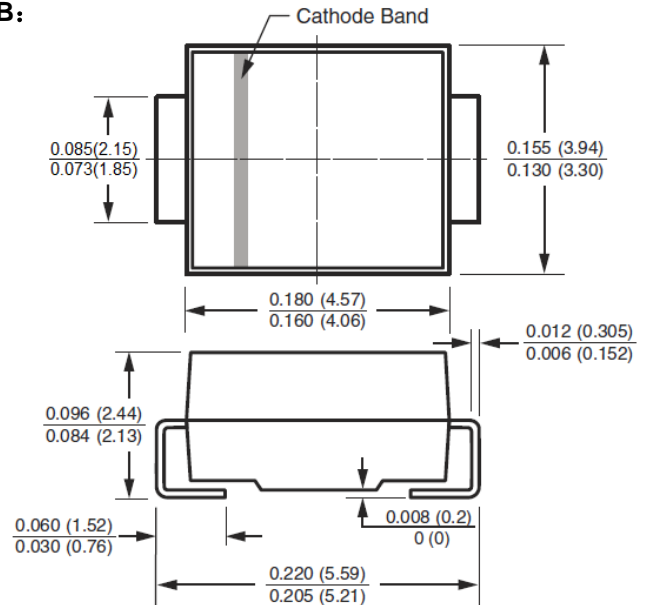
Features

- * For surface mounted application
- * Low profile package
- * Built-in strain relief
- * Glass passivated junction
- * Excellent clamping capability
- * Fast response time: typically less than 1.0ps from 0 volts to BV min
- * Typical IR less than 1μA above 10V
- * High temperature soldering: 260°C/10 seconds at terminals
- * Plastic material used carries underwriters laboratory flammability classifications 94V-0



Package Outline Dimensions in inches (millimeters)

SMB:



Mechanical Data

- * Case: Molded plastic
- * Terminals: Solder plated
- * Polarity: Indicated by cathode band
- * Standard Packaging: 12mm tape per EIA STD RS-481

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Type Number	Symbol	Value	Unit
Peak Power Dissipation at $T_A=25^\circ\text{C}$, $T_P=1\text{ms}$ (Note1)	P_{PK}	Minimum 600	Watts
Steady state power dissipation	P_D	3	Watts
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100	Amps
Maximum instantaneous forward voltage at 50 A for Unidirectional only (Note 2)	V_F	3.5/5.0	Volts
Typical thermal resistance	$R_{\theta JC}$ $R_{\theta JA}$	10 55	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J/T_{STG}	-55 to +150	$^\circ\text{C}$

Note:1、 Non-repetitive current pulse per Fig.3 and debated above $T_A=25^\circ\text{C}$ per Fig.2.

2、 $V_F=3.5\text{V}$ on P6SMB6.8 thru P6SMB91 Devices and $V_F=5.0\text{V}$ on P6SMB100 thru P6SMB550 Device.

Devices for Bipolar Applications

1、 For bidirectional use C or CA suffix for types P6SMBJ6.8 thru types P6SMBJ550A.

2、 Electrical characteristics apply in both directions.

Ratings and Characteristic Curves

FIG. 1 PEAK PULSE POWER RATING CURVE

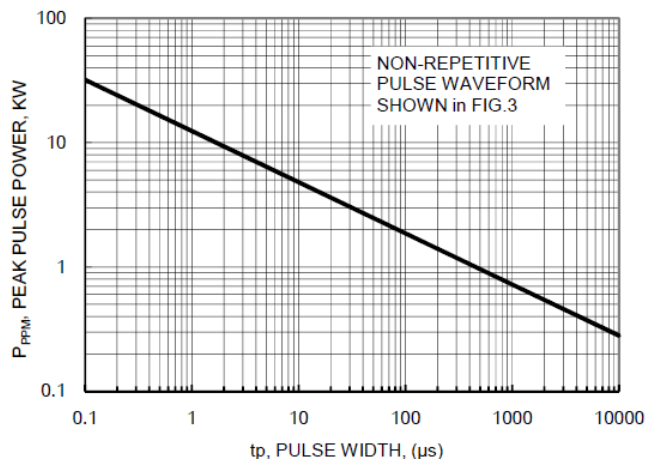


FIG. 2 PULSE DERATING CURVE

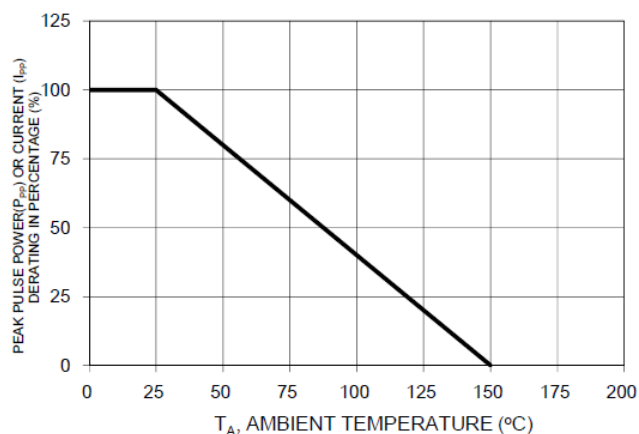


FIG. 3 CLAMPING POWER PULSE WAVEFORM

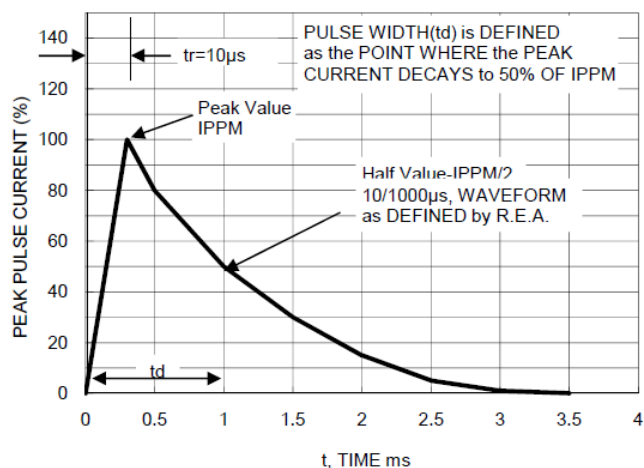


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

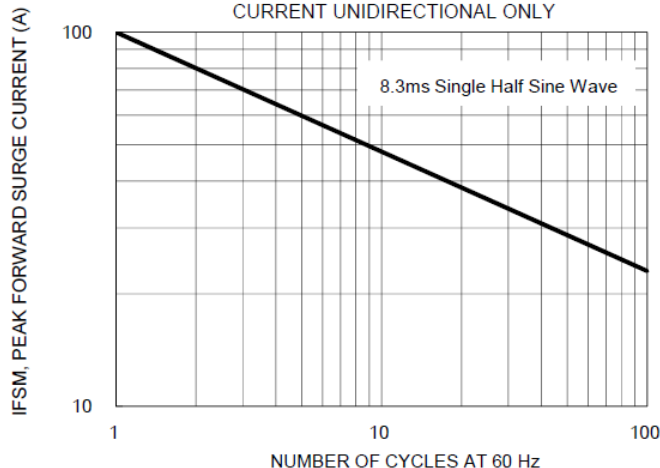
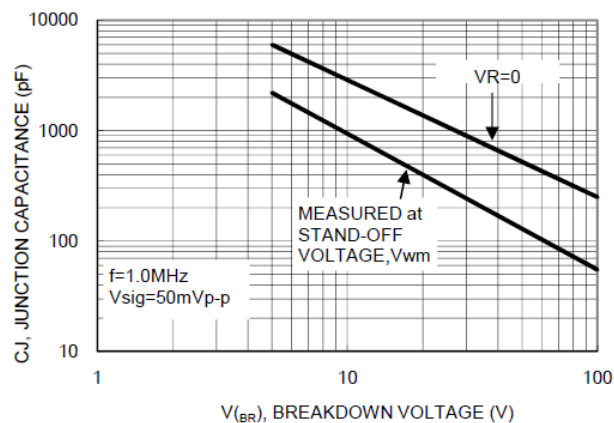


FIG. 5 TYPICAL JUNCTION CAPACITANCE





P6SMB6.8A THRU P6SMB550A

Surface Mount Transient Voltage Suppressors Diodes

Electrical Characteristics @T_A=25°C unless otherwise noted

Type Number		Stand-Off Voltage V _{WM} (V)	Breakdown Voltage VBR (V) (Note 1)		Test Current I _T (mA)	Maximum Reverse Leakage @ V _{WM} ID (uA)	Maximum Peak Pulse Current I _{RSM} (A) (Note 2)	Maximum Clamping Voltage @ I _{PPM} V _c (V)	Marking Code
			Min	Max					
(Uni)	(Bi)								
P6SMB6.8	P6SMB6.8C	5.50	6.12	7.48	10	1000	58	10.8	6V8/6V8C
P6SMB6.8A	P6SMB6.8CA	5.80	6.46	7.14	10	1000	60	10.5	6V8A/6V8CA
P6SMB7.5	P6SMB7.5C	6.05	6.75	8.25	10	500	53	11.7	7V5/7V5C
P6SMB7.5A	P6SMB7.5CA	6.40	7.13	7.88	10	500	55	11.3	7V5A/7V5CA
P6SMB8.2	P6SMB8.2C	6.63	7.38	9.02	10	200	50	12.5	8V2/8V2C
P6SMB8.2A	P6SMB8.2CA	7.02	7.79	8.61	10	200	52	12.1	8V2A/8V2CA
P6SMB9.1	P6SMB9.1C	7.37	8.19	10.00	1.0	50	45	13.8	9V1/9V1C
P6SMB9.1A	P6SMB9.1CA	7.78	8.65	9.55	1.0	50	47	13.4	9V1A/9V1CA
P6SMB10	P6SMB10C	8.10	9.00	11.00	1.0	10	42	15.0	10/10C
P6SMB10A	P6SMB10CA	8.55	9.50	10.5	1.0	10	43	14.5	10A/10CA
P6SMB11	P6SMB11C	8.92	9.90	12.1	1.0	1	38	16.2	11/11C
P6SMB11A	P6SMB11CA	9.40	10.5	11.6	1.0	1	40	15.6	11A/11CA
P6SMB12	P6SMB12C	9.72	10.8	13.2	1.0	1	36	17.3	12/12C
P6SMB12A	P6SMB12CA	10.2	11.4	12.6	1.0	1	37	16.7	12A/12CA
P6SMB13	P6SMB13C	10.5	11.7	14.3	1.0	1	33	19.0	13/13C
P6SMB13A	P6SMB13CA	11.1	12.4	13.7	1.0	1	34	18.2	13A/13CA
P6SMB15	P6SMB15C	12.1	13.5	16.5	1.0	1	28	22.0	15/15C
P6SMB15A	P6SMB15CA	12.8	14.3	15.8	1.0	1	29	21.2	15A/15CA
P6SMB16	P6SMB16C	12.9	14.4	17.6	1.0	1	26	23.5	16/16C
P6SMB16A	P6SMB16CA	13.6	15.2	16.8	1.0	1	28	22.5	16A/16CA
P6SMB18	P6SMB18C	14.5	16.2	19.8	1.0	1	23	26.5	18/18C
P6SMB18A	P6SMB18CA	15.3	17.1	18.9	1.0	1	25	25.5	18A/18CA
P6SMB20	P6SMB20C	16.2	18.0	22.0	1.0	1	21	29.1	20/20C
P6SMB20A	P6SMB20CA	17.1	19.0	21.0	1.0	1	22	27.7	20A/20CA
P6SMB22	P6SMB22C	17.8	19.8	24.2	1.0	1	19	31.9	22/22C
P6SMB22A	P6SMB22CA	18.8	20.9	23.1	1.0	1	20	30.6	22A/22CA
P6SMB24	P6SMB24C	19.4	21.6	26.4	1.0	1	18	34.7	24/24C
P6SMB24A	P6SMB24CA	20.5	22.8	25.2	1.0	1	19	33.2	24A/24CA
P6SMB27	P6SMB27C	21.8	24.3	29.7	1.0	1	16	39.1	27/27C
P6SMB27A	P6SMB27CA	23.1	25.7	28.4	1.0	1	16.8	37.5	27A/27CA
P6SMB30	P6SMB30C	24.3	27.0	33.0	1.0	1	14.0	43.5	30/30C
P6SMB30A	P6SMB30CA	25.6	28.5	31.5	1.0	1	15.0	41.4	30A/30CA
P6SMB33	P6SMB33C	26.8	29.7	36.3	1.0	1	13.0	47.7	33/33C
P6SMB33A	P6SMB33CA	28.2	31.4	34.7	1.0	1	13.8	45.7	33A/33CA
P6SMB36	P6SMB36C	29.1	32.4	39.6	1.0	1	12.0	52.0	36/36C
P6SMB36A	P6SMB36CA	30.8	34.2	37.8	1.0	1	12.6	49.9	36A/36CA
P6SMB39	P6SMB39C	31.6	35.1	42.9	1.0	1	11.1	56.4	39/39C
P6SMB39A	P6SMB39CA	33.3	37.1	41.0	1.0	1	11.6	53.9	39A/39CA
P6SMB43	P6SMB43C	34.8	38.7	47.3	1.0	1	10.0	61.9	43/43C
P6SMB43A	P6SMB43CA	36.8	40.9	45.2	1.0	1	10.6	59.3	43A/43CA
P6SMB47	P6SMB47C	38.1	42.3	51.7	1.0	1	9.2	67.8	47/47C
P6SMB47A	P6SMB47CA	40.2	44.7	49.4	1.0	1	9.7	64.8	47A/47CA
P6SMB51	P6SMB51C	41.3	45.9	56.1	1.0	1	8.5	73.5	51/51C
P6SMB51A	P6SMB51CA	43.6	48.5	53.6	1.0	1	8.9	70.1	51A/51CA
P6SMB56	P6SMB56C	45.4	50.4	61.6	1.0	1	7.8	80.5	56/56C
P6SMB56A	P6SMB56CA	47.8	53.2	58.8	1.0	1	8.1	77.0	56A/56CA
P6SMB62	P6SMB62C	50.2	55.8	68.2	1.0	1	7.0	89.0	62/62C
P6SMB62A	P6SMB62CA	53.0	58.9	65.1	1.0	1	7.4	85.0	62A/62CA
P6SMB68	P6SMB68C	55.1	61.2	74.8	1.0	1	6.4	98.0	68/68C
P6SMB68A	P6SMB68CA	58.1	64.6	71.4	1.0	1	6.8	92.0	68A/68CA



P6SMB6.8A THRU P6SMB550A

Surface Mount Transient Voltage Suppressors Diodes

Electrical Characteristics @T_A=25°C unless otherwise noted

Type Number		Stand-Off Voltage V _{WM} (V)	Breakdown Voltage V _{BR} (V) (Note 1)		Test Current IT (mA)	Maximum Reverse Leakage @ V _{WM} ID (uA)	Maximum Peak Pulse Current I _{RSM} (A) (Note 2)	Maximum Clamping Voltage @ I _{PPM} V _c (V)	Marking Code
			Min	Max					
(Uni)	(Bi)								
P6SMB75	P6SMB75C	60.7	67.5	82.5	1.0	1	5.8	108	75/75C
P6SMB75A	P6SMB75CA	64.1	71.3	78.8	1.0	1	6.1	103	75A/75CA
P6SMB82	P6SMB82C	66.4	73.8	90.2	1.0	1	5.3	118	82/82C
P6SMB82A	P6SMB82CA	70.1	77.9	86.1	1.0	1	5.5	113	82A/82CA
P6SMB91	P6SMB91C	73.7	81.9	100	1.0	1	4.8	131	91/91C
P6SMB91A	P6SMB91CA	77.8	86.5	95.5	1.0	1	5.0	125	91A/91CA
P6SMB100	P6SMB100C	81.0	90	110	1.0	1	4.3	144	100/100C
P6SMB100A	P6SMB100CA	85.5	95	105	1.0	1	4.5	137	100A/100CA
P6SMB110	P6SMB110C	89.2	99	121	1.0	1	3.9	158	110/110C
P6SMB110A	P6SMB110CA	94.0	105	116	1.0	1	4.1	152	110A/110CA
P6SMB120	P6SMB120C	97.2	108	132	1.0	1	3.6	173	120/120C
P6SMB120A	P6SMB120CA	102.0	114	126	1.0	1	3.8	165	120A/120CA
P6SMB130	P6SMB130C	105.0	117	143	1.0	1	3.3	187	130/130C
P6SMB130A	P6SMB130CA	111.0	124	137	1.0	1	3.5	179	130A/130CA
P6SMB150	P6SMB150C	121.0	135	165	1.0	1	2.9	215	150/150C
P6SMB150A	P6SMB150CA	128.0	143	158	1.0	1	3.0	207	150A/150CA
P6SMB160	P6SMB160C	130.0	144	176	1.0	1	2.7	230	160/160C
P6SMB160A	P6SMB160CA	136.0	152	168	1.0	1	2.8	219	160A/160CA
P6SMB170	P6SMB170C	138.0	153	187	1.0	1	2.5	244	170/170C
P6SMB170A	P6SMB170CA	145.0	162	179	1.0	1	2.6	234	170A/170CA
P6SMB180	P6SMB180C	146.0	162	198	1.0	1	2.4	258	180/180C
P6SMB180A	P6SMB180CA	154.0	171	189	1.0	1	2.5	246	180A/180CA
P6SMB200	P6SMB200C	162.0	180	220	1.0	1	2.1	287	200/200C
P6SMB200A	P6SMB200CA	171.0	190	210	1.0	1	2.2	274	200A/200CA
P6SMB220	P6SMB220C	175.0	198	242	1.0	1	1.8	342	220/220C
P6SMB220A	P6SMB220CA	185.0	209	231	1.0	1	1.9	328	220A/220CA
P6SMB250	P6SMB250C	202.0	225	275	1.0	1	1.7	360	250/250C
P6SMB250A	P6SMB250CA	214.0	237	263	1.0	1	1.8	344	250A/250CA
P6SMB300	P6SMB300C	243.0	270	330	1.0	1	1.4	430	300/300C
P6SMB300A	P6SMB300CA	256.0	285	315	1.0	1	1.5	414	300A/300CA
P6SMB350	P6SMB350C	284.0	315	385	1.0	1	1.2	504	350/350C
P6SMB350A	P6SMB350CA	300.0	332	368	1.0	1	1.3	482	350A/350CA
P6SMB400	P6SMB400C	324.0	360	440	1.0	1	1.1	574	400/400C
P6SMB400A	P6SMB400CA	342.0	380	420	1.0	1	1.1	548	400A/400CA
P6SMB440	P6SMB440C	356.0	396	484	1.0	1	1.0	631	440/440C
P6SMB440A	P6SMB440CA	376.0	418	462	1.0	1	1.04	600	440A/440CA
P6SMB480	P6SMB480C	389.0	432	528	1.0	1	0.87	691	480/480C
P6SMB480A	P6SMB480CA	408.0	456	504	1.0	1	0.91	658	480A/480CA
P6SMB550	P6SMB550C	446.0	495	605	1.0	1	0.76	792	550/550C
P6SMB550A	P6SMB550CA	467.5	523	578	1.0	1	0.8	754	550A/550CA

Notes:

1. VBR measure after IT applied for 300us, IT=square wave pulse or equivalent.
2. Surge current waveform per Figure. 3 and derate per Figure. 2.
3. For bipolar types having VWM of 10 volts and under, the ID limit is doubled.
4. For bidirectional use C or CA suffix for types P6SMB6.8 through P6SMB550A.



P6SMB6.8A THRU P6SMB550A
Surface Mount Transient Voltage Suppressors Diodes

Ordering Information

Part No.	Package	Packing
P6SMB Series	SMB	3K/Reel