

SMB Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

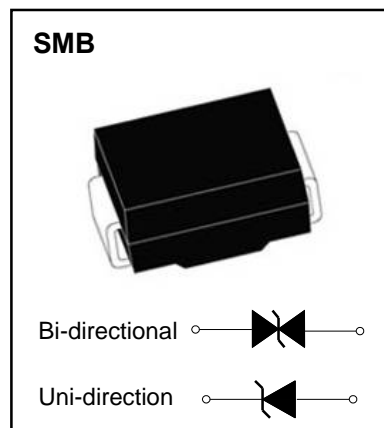
- P_{PP} 600W
- V_{RWM} 6.8V- 350V
- Glass passivated chip

Applications

- Clamping Voltage

Marking

- P6SMB
XXCA/XXA
XX : From 6.8 To 350



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak power dissipation	P_{PPM}	W	with a 10/1000us waveform	600
Peak pulse current	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at $T_L=75^\circ\text{C}$	5.0
Peak forward surge current	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	100
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$		-55 to +150

Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage	V_F	V	at 35A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	$^\circ\text{C}/\text{W}$	junction to lead	20
	$R_{\theta JA}$	$^\circ\text{C}/\text{W}$	junction to ambient	100

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal
- (3) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 100\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 101\text{V}$

Electrical Characteristics ($T_A=25^\circ\text{C}$ unless otherwise noted)

TYPE NO.	BREAKDOWN VOLTAGE				WORKING PEAK REVERSE VOLTAGE V_{RWM} VOLTS	MAXIMUM REVERSE LEAKAGE @ V_{RWM} I_R μA	MAXIMUM REVERSE SURGE CURRENT I_{RSM} A	MAXIMUM REVERSE VOLTAGE @ I_{RSM} V_{RSM} VOLTS	MAXIMUM TEMP. COEFFICIENT of V_{BR} %/°C
	V_{BR}			@ I_T mA					
	VOLTS								
	MIN	NOM	MAX						
P6SMB6.8(C)A	6.45	6.8	7.14	10	5.8	1000	57	10.5	0.057
P6SMB7.5(C)A	7.13	7.5	7.88	10	6.4	500	53	11.3	0.061
P6SMB8.2(C)A	7.79	8.2	8.61	10	7.02	200	50	12.1	0.065
P6SMB9.1(C)A	8.65	9.1	9.55	1	7.78	50	45	13.4	0.068
P6SMB10(C)A	9.5	10	10.5	1	8.55	10	41	14.5	0.073
P6SMB11(C)A	10.5	11	11.6	1	9.4	5	38	15.6	0.075
P6SMB12(C)A	11.4	12	12.6	1	10.2	5	36	16.7	0.078
P6SMB13(C)A	12.4	13	13.7	1	11.1	5	33	18.2	0.081
P6SMB15(C)A	14.3	15	15.8	1	12.8	5	28	21.2	0.084
P6SMB16(C)A	15.2	16	16.8	1	13.6	5	27	22.5	0.086
P6SMB18(C)A	17.1	18	18.9	1	15.3	5	24	25.2	0.088
P6SMB20(C)A	19.0	20	21.0	1	17.1	5	22	27.7	0.090
P6SMB22(C)A	20.9	22	23.1	1	18.8	5	20	30.6	0.092
P6SMB24(C)A	22.8	24	25.2	1	20.5	5	18	33.2	0.094
P6SMB27(C)A	25.7	27	28.4	1	23.1	5	16	37.5	0.096
P6SMB30(C)A	28.5	30	31.5	1	25.6	5	14.4	41.4	0.097
P6SMB33(C)A	31.4	33	34.7	1	28.2	5	13.2	45.7	0.098
P6SMB36(C)A	34.2	36	37.8	1	30.8	5	12.0	49.9	0.099
P6SMB39(C)A	37.1	39	41.0	1	33.3	5	11.2	53.9	0.100
P6SMB43(C)A	40.9	43	45.2	1	36.8	5	10.1	59.3	0.101
P6SMB47(C)A	44.7	47	49.4	1	40.2	5	9.3	64.8	0.101
P6SMB51(C)A	48.5	51	53.6	1	43.6	5	8.6	70.1	0.102
P6SMB56(C)A	53.2	56	58.8	1	47.8	5	7.8	77	0.103
P6SMB62(C)A	58.9	62	65.1	1	53.0	5	7.1	85	0.104
P6SMB68(C)A	64.6	68	71.4	1	58.1	5	6.5	92	0.104
P6SMB75(C)A	71.3	75	78.8	1	64.1	5	5.8	103	0.105
P6SMB82(C)A	77.9	82	86.1	1	70.1	5	5.3	113	0.105
P6SMB91(C)A	86.5	91	95.5	1	77.8	5	4.8	125	0.106
P6SMB100(C)A	95.0	100	105	1	85.5	5	4.4	137	0.106
P6SMB110(C)A	104.5	110	115.5	1	94.0	5	4.0	152	0.107
P6SMB120(C)A	114	120	126	1	102	5	3.6	165	0.107
P6SMB130(C)A	123.5	130	136.5	1	111	5	3.3	179	0.107
P6SMB150(C)A	142.5	150	157.5	1	128	5	2.9	207	0.108
P6SMB160(C)A	152	160	168	1	136	5	2.7	219	0.108
P6SMB170(C)A	161.5	170	178.5	1	145	5	2.6	234	0.108
P6SMB180(C)A	171	180	189	1	154	5	2.4	246	0.108
P6SMB200(C)A	190	200	210	1	171	5	2.2	274	0.108
P6SMB350(C)A	332	350	368	1	300	5	1.3	482	0.108

- Notes: 1. Suffix C denotes Bi-directional device.
2. V_{BR} measured with I_T current pulse = 300 μs
3. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

Typical Characteristics

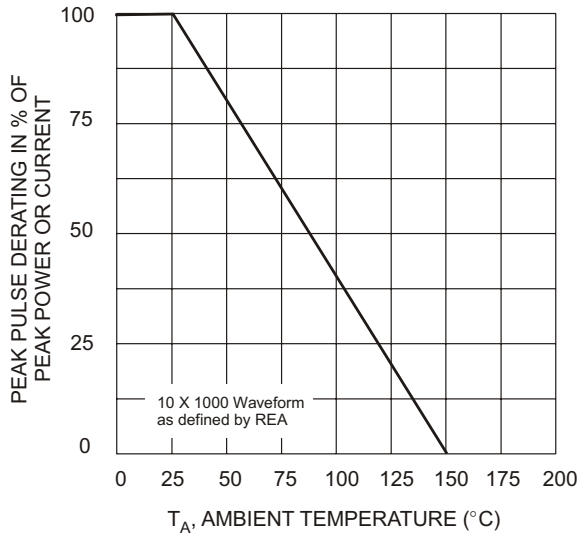


Fig. 1 Pulse Derating Curve

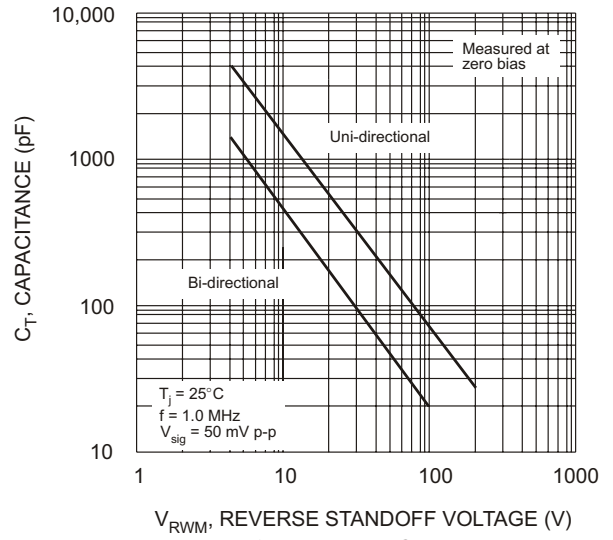


Fig. 2 Typical Total Capacitance

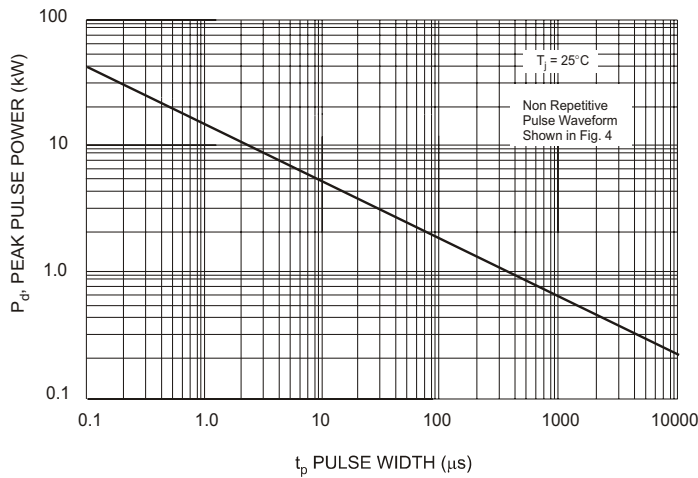


Fig. 3 Pulse Rating Curve

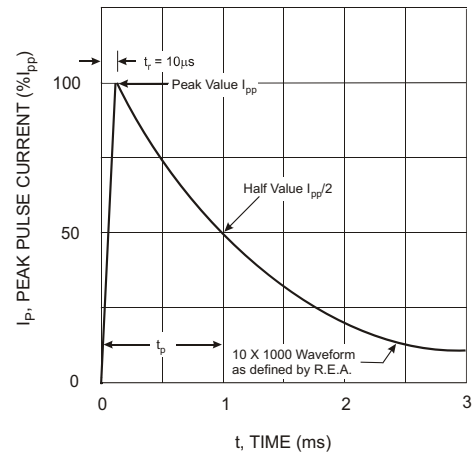


Fig. 4 Pulse Waveform

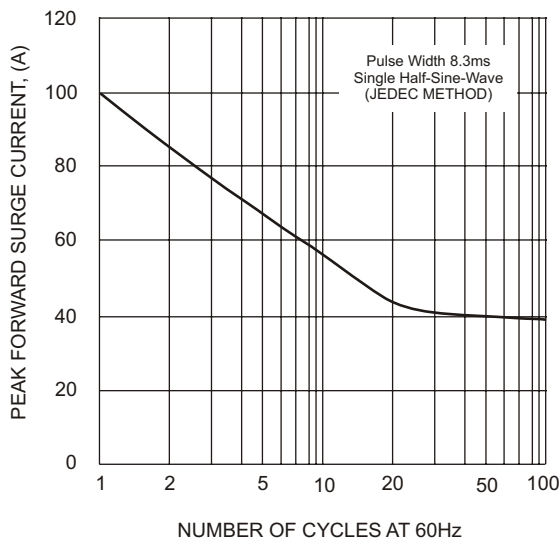


Fig. 5, Maximum Non-Repetitive Surge Current

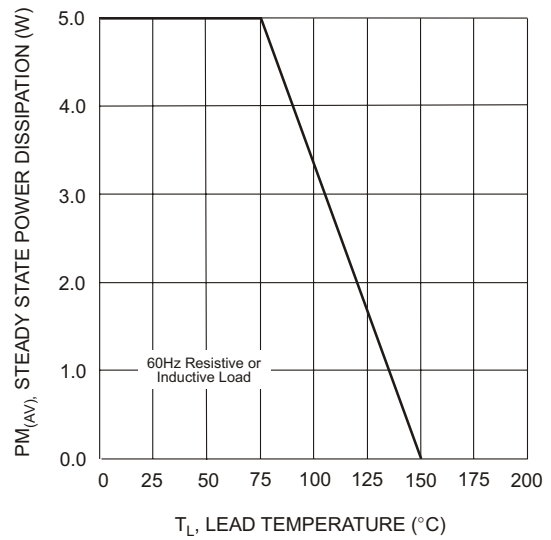
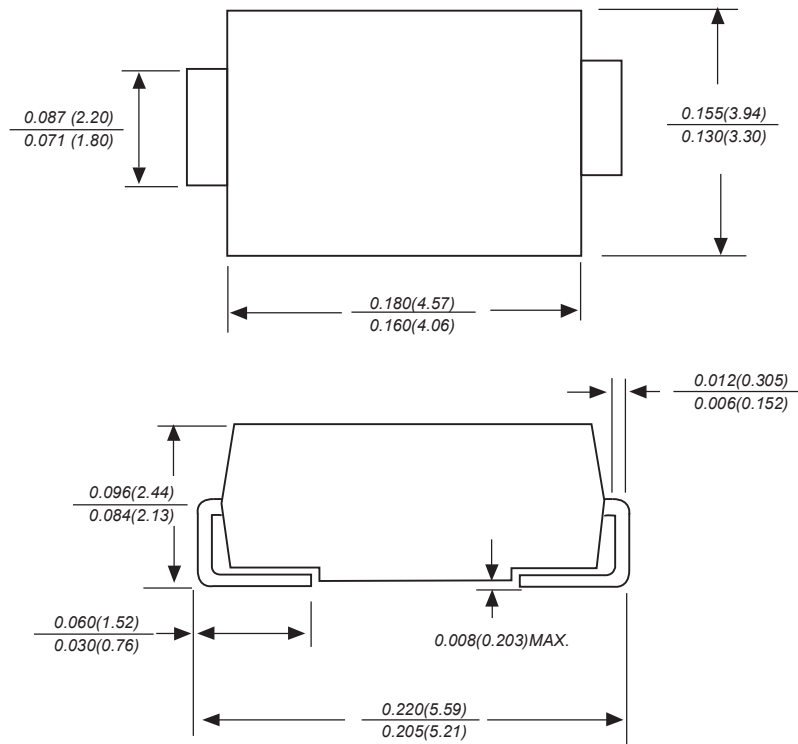


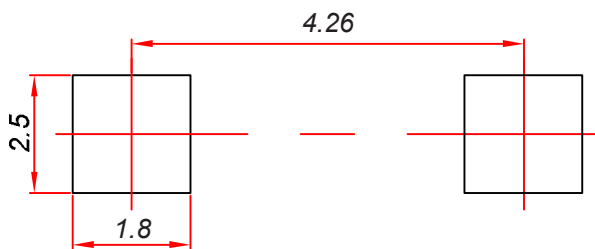
Fig. 6 Steady State Power Derating Curve

SMB Package Outline Dimensions



Dimensions in inches and (millimeters)

SMB Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05 \text{ mm}$.
3. The pad layout is for reference purposes only.

NOTICE

JSMD reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JSMD does not assume any liability arising out of the application or use of any product described herein.

Reel Taping Specifications For Surface Mount Devices–SMB

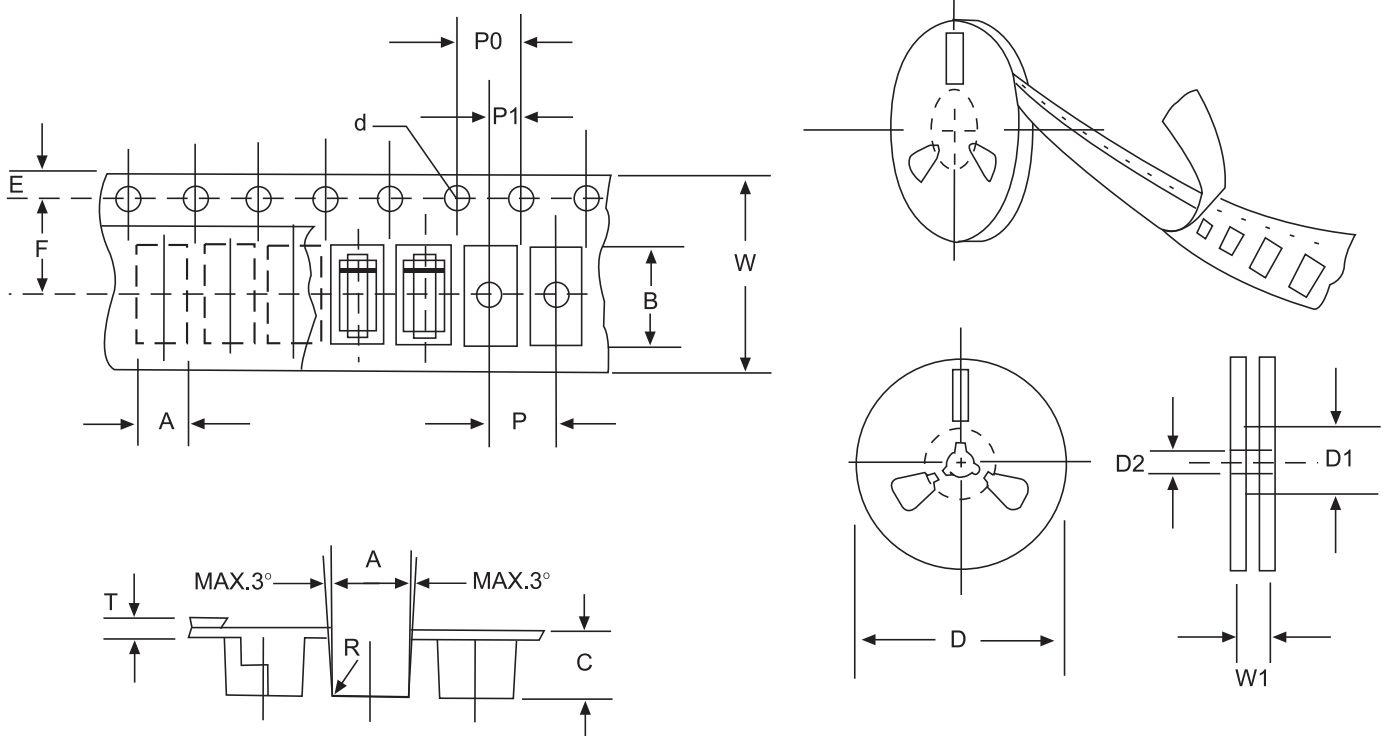


FIG:CONFIGURATION OF AXIAL TAPING

ITEM	SYMBOL	SMB mm(inch)
Carrier width	A	4.09±0.1(0.161±0.004)
Carrier length	B	5.82±0.1(0.229±0.004)
Carrier depth	C	3.33±0.1(0.131±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.0002)
Reel outside diameter	D	330/178±2.0(13/7.0±0.79)
Reel inner diameter	D1	8.0±0.2(0.315±0.008)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Sprocket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	5.65±0.05(0.222±0.002)
Punch hole pitch	P	8.0±0.1(0.315±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Total tape thickness	T	0.32±0.1(0.013±0.004)
Tape width	W	12.0±0.2(0.472±0.008)
Reel width	W1	16.8±2.0(0.661±0.079)

NOTE:Devices are packde in accordance with EIA standard RS-481-A and specification given above.