

SMB



Bi-directional

Uni-direction

Features

- P_{PP} 1000W
- V_{RWM} 5.8V- 450V
- Glass passivated chip

Applications

- Clamping Voltage

Limiting values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	1000
Peak pulse current (1)	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(2)	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 (3)	V_F	V	at 50A for unidirectional only	3.5/6.5
Thermal resistance	$R_{\theta JL}$	$^{\circ}\text{C/W}$	junction to lead	20
	$R_{\theta JA}$	$^{\circ}\text{C/W}$	junction to ambient, $L_{Lead} = 10\text{ mm}$	100

Electrical Characteristics (T_A=25°C unless otherwise noted)

Number		Reverse Stand-off Voltage	Breakdown Voltage V _{BR} @ I _T		Test Current	Clamping Voltage @ I _{PP}	Peak Pulse Current	Reverse Leakage @ V _{RWM}
UNI	BI	V _{RWM} (V)	Min.(V)	Max.(V)	I _T (mA)	V _C MAX.(V)	I _{PP} (A)	I _R (uA)
1.0SMB6.8A	1.0SMB6.8CA	5.8	6.45	7.14	10	10.5	97.50	1000
1.0SMB7.5A	1.0SMB7.5CA	6.4	7.13	7.88	10	11.3	90.75	500
1.0SMB8.2A	1.0SMB8.2CA	7.0	7.79	8.61	10	12.1	84.75	200
1.0SMB9.1A	1.0SMB9.1CA	7.8	8.65	9.55	1	13.4	76.50	50
1.0SMB10A	1.0SMB10CA	8.6	9.50	10.50	1	14.5	70.75	10
1.0SMB11A	1.0SMB11CA	9.4	10.50	11.60	1	15.6	65.75	5
1.0SMB12A	1.0SMB12CA	10.2	11.40	12.60	1	16.7	61.50	5
1.0SMB13A	1.0SMB13CA	11.1	12.40	13.70	1	18.2	56.25	1
1.0SMB15A	1.0SMB15CA	12.8	14.30	15.80	1	21.2	48.25	1
1.0SMB16A	1.0SMB16CA	13.6	15.20	16.80	1	22.5	45.50	1
1.0SMB18A	1.0SMB18CA	15.3	17.10	18.90	1	25.5	40.25	1
1.0SMB20A	1.0SMB20CA	17.1	19.00	21.00	1	27.7	37.00	1
1.0SMB22A	1.0SMB22CA	18.8	20.90	23.10	1	30.6	33.50	1
1.0SMB24A	1.0SMB24CA	20.5	22.80	25.20	1	33.2	30.75	1
1.0SMB27A	1.0SMB27CA	23.1	25.70	28.40	1	37.5	27.25	1
1.0SMB30A	1.0SMB30CA	25.6	28.50	31.50	1	41.4	24.75	1
1.0SMB33A	1.0SMB33CA	28.2	31.40	34.70	1	45.7	22.50	1
1.0SMB36A	1.0SMB36CA	30.8	34.20	37.80	1	49.9	20.50	1
1.0SMB39A	1.0SMB39CA	33.3	37.1	41.00	1	53.9	19.00	1
1.0SMB43A	1.0SMB43CA	36.8	40.90	45.20	1	59.3	17.25	1
1.0SMB47A	1.0SMB47CA	40.2	44.70	49.40	1	64.8	15.75	1
1.0SMB51A	1.0SMB51CA	43.6	48.50	53.60	1	70.1	14.50	1
1.0SMB56A	1.0SMB56CA	47.8	53.20	58.80	1	77.0	13.25	1
1.0SMB62A	1.0SMB62CA	53.0	58.90	65.10	1	85.0	12.00	1
1.0SMB68A	1.0SMB68CA	58.1	64.60	71.40	1	92.0	11.25	1
1.0SMB75A	1.0SMB75CA	64.1	71.30	78.80	1	103.0	10.00	1
1.0SMB82A	1.0SMB82CA	70.1	77.90	86.10	1	113.0	9.00	1
1.0SMB91A	1.0SMB91CA	77.8	86.50	95.50	1	125.0	8.25	1
1.0SMB100A	1.0SMB100CA	85.5	95.0	105.0	1	137.0	7.50	1
1.0SMB110A	1.0SMB110CA	94.0	105.0	116.0	1	152.0	6.75	1
1.0SMB120A	1.0SMB120CA	102.0	114.0	126.0	1	165.0	6.25	1
1.0SMB130A	1.0SMB130CA	111.0	124.0	137.0	1	179.0	5.75	1
1.0SMB150A	1.0SMB150CA	128.0	143.0	158.0	1	207.0	5.00	1
1.0SMB160A	1.0SMB160CA	136.0	152.0	168.0	1	219.0	4.75	1
1.0SMB170A	1.0SMB170CA	145.0	162.0	179.0	1	234.0	4.50	1
1.0SMB180A	1.0SMB180CA	154.0	171.0	189.0	1	246.0	4.25	1
1.0SMB200A	1.0SMB200CA	171.0	190.0	210.0	1	274.0	3.75	1
1.0SMB220A	1.0SMB220CA	185.0	209.0	231.0	1	328.0	3.25	1
1.0SMB250A	1.0SMB250CA	214.0	237.0	263.0	1	344.0	3.00	1
1.0SMB300A	1.0SMB300CA	256.0	285.0	315.0	1	414.0	2.50	1
1.0SMB350A	1.0SMB350CA	300.0	332.0	368.0	1	482.0	2.25	1
1.0SMB400A	1.0SMB400CA	342.0	380.0	420.0	1	548.0	2.00	1
1.0SMB440A	1.0SMB440CA	376.0	418.0	462.0	1	602.0	1.75	1
1.0SMB480A	1.0SMB480CA	408.0	456.0	504.0	1	658.0	1.50	1
1.0SMB510A	1.0SMB510CA	434.0	485.0	535.0	1	698.0	1.50	1
1.0SMB530A	1.0SMB530CA	450.0	503.0	556.0	1	725.0	1.50	1

Typical Characteristics

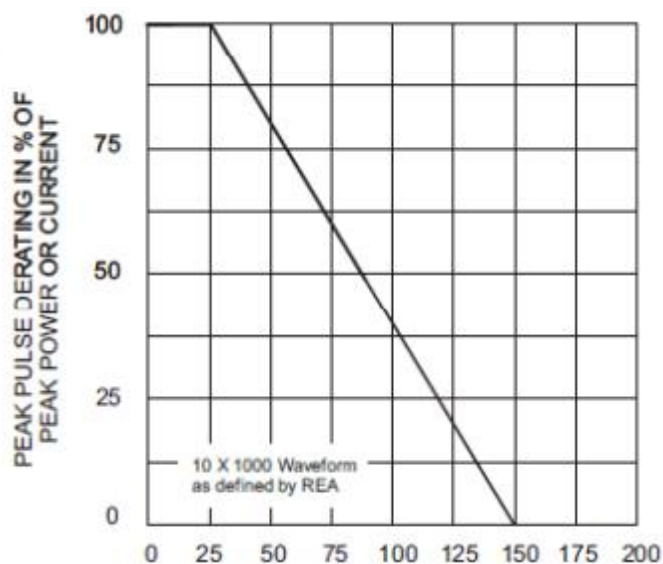


Fig. 1 - Pulse Derating Curve

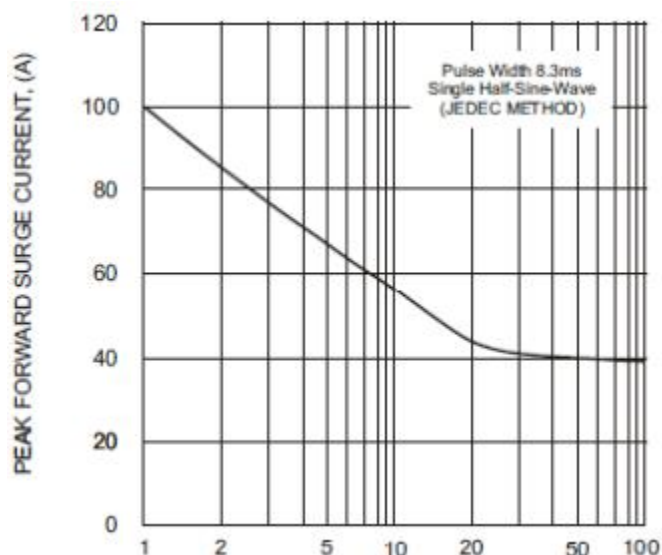


Fig. 2 - Maximum Non-Repetitive Surge Current

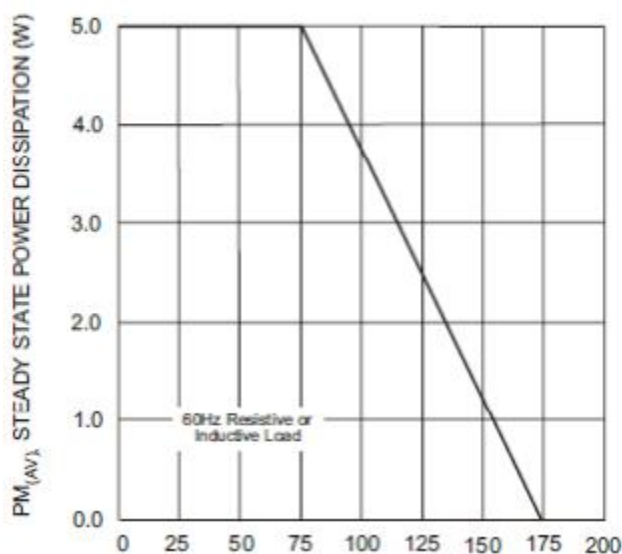


Fig. 3 - Steady State Power Derating Curve

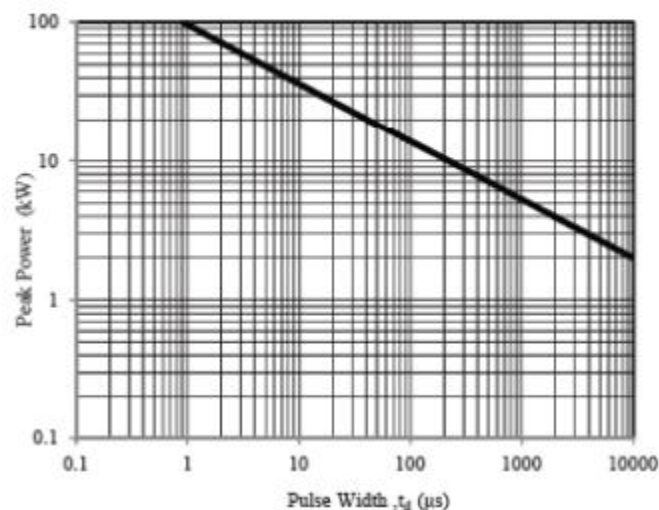


Fig. 4 - Peak Pulse Power Rating Curve

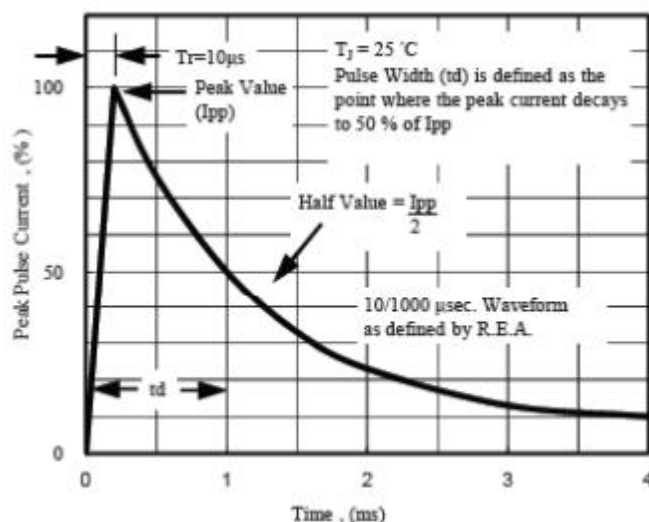


Fig. 5 - Pulse Waveform

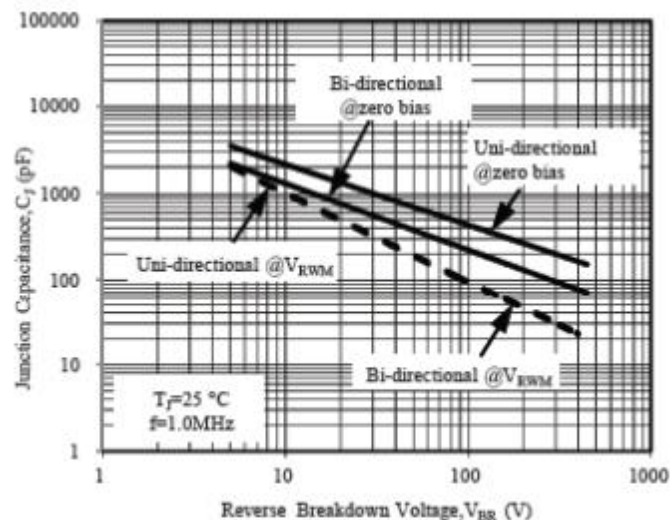
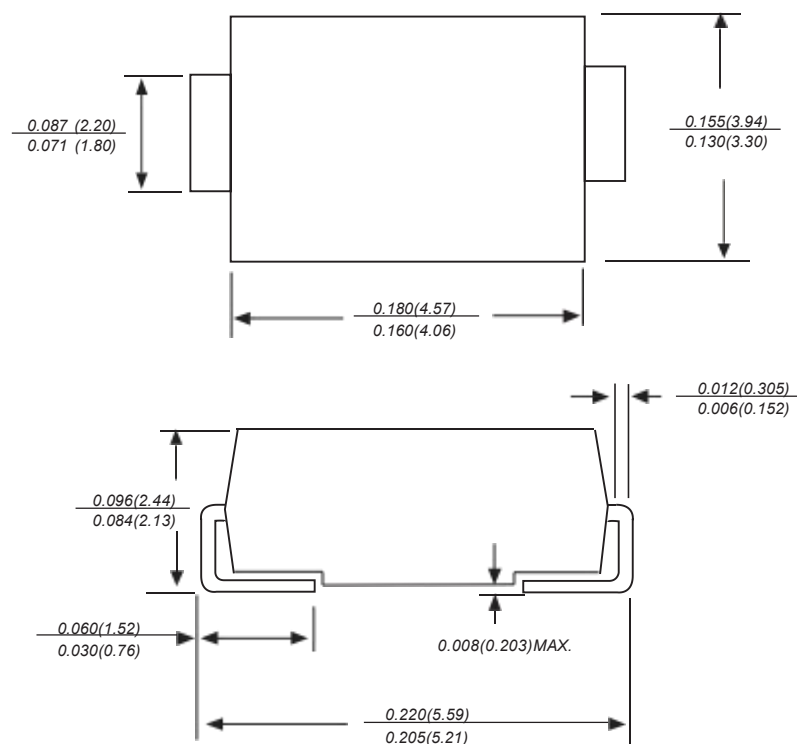
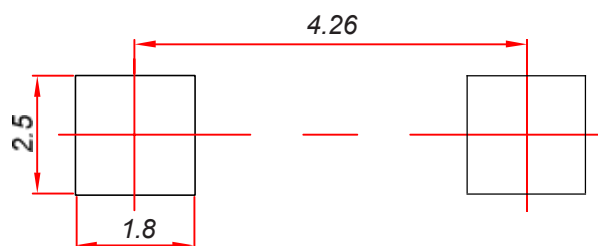


Fig. 6 - Typical Junction Capacitance

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.