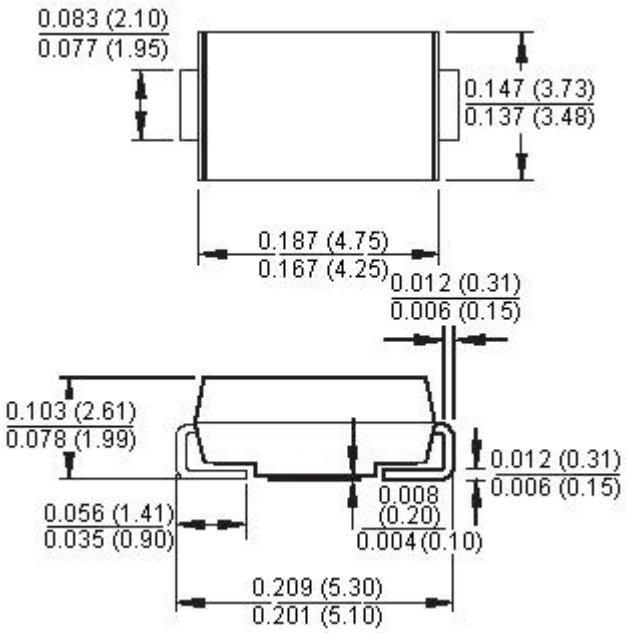
P6SMB Series

Features:

- For surface mounted application in order to optimize board space.
- Low profile package.
- Built-in strain relief.
- Glass passivated junction.
- Excellent clamping capability.
- Fast response time: typically less than 1.0ps from 0 volt to BV minimum.
- Typical I_R less than 1μA above 10V.
- High temperature soldering guaranteed: 260°C/10 seconds at terminals.
- Plastic material used carries.
- 600 watts peak pulse power capability with a 10 x 1000μs waveform by 0.01% duty cycle.

SMB/DO-214AA



Dimensions : Inches (Millimetres)

Mechanical Data

Case	: Molded plastic
Terminals	: Pure tin plated lead free.
Polarity	: Indicated by cathode band.
Standard packaging	: 12mm tape (EIA STD RS-481).
Weight	: 0.093 gram.

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

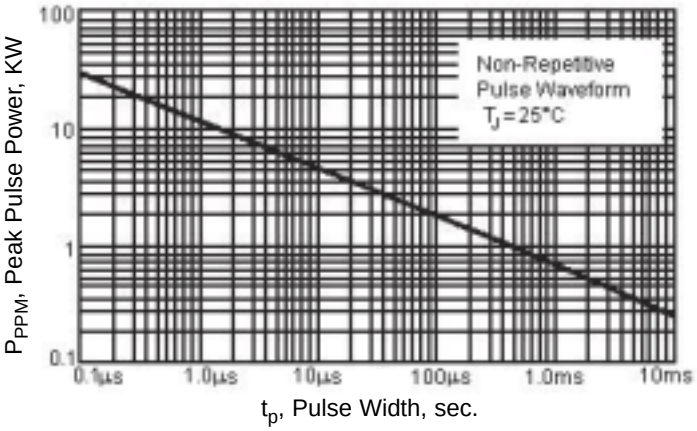
Type Number	Symbol	Value	Units
Peak Power Dissipation at T_A = 25°C, T_p = 1ms (Note 1)	P_{PK}	Minimum 600	Watts
Steady State Power Dissipation	P_D	3	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3) - Unidirectional Only	I_{FSM}	100	Amps
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only (Note 4)	V_F	3.5/5.0	Volts
Typical Thermal Resistance (Note 5)	$R_{\theta JC}$ $R_{\theta JA}$	10 55	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 150	°C

Notes: 1. Non-repetitive current pulse and derated above T_A = 25°C.
2. Mounted on 5.0mm^2 (0.013mm thick) copper pads to each terminal.
3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
4. V_F = 3.5V on P6SMB6.8 thru P6SMB91 devices and V_F = 5.0V on P6SMB100 thru P6SMB220 devices.
5. Measured on P.C.B. with 0.27 x 0.27 Inch (7.0 x 7.0mm) copper pad areas.

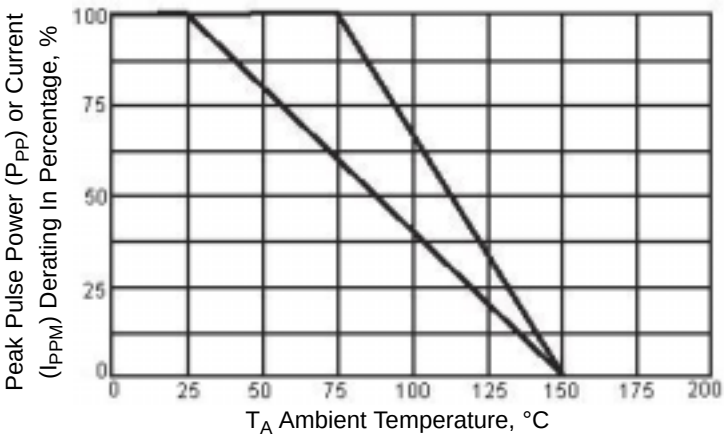
Devices for bipolar applications
1. For bidirectional use C or CA suffix for types P6SMB6.8 through types P6SMB220A.
2. Electrical characteristics apply in both directions.

Ratings and Characteristic Curves

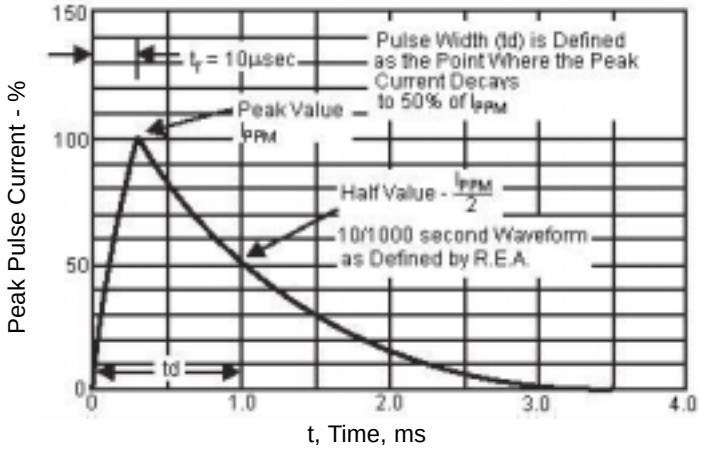
Peak Pulse Power Rating Curve



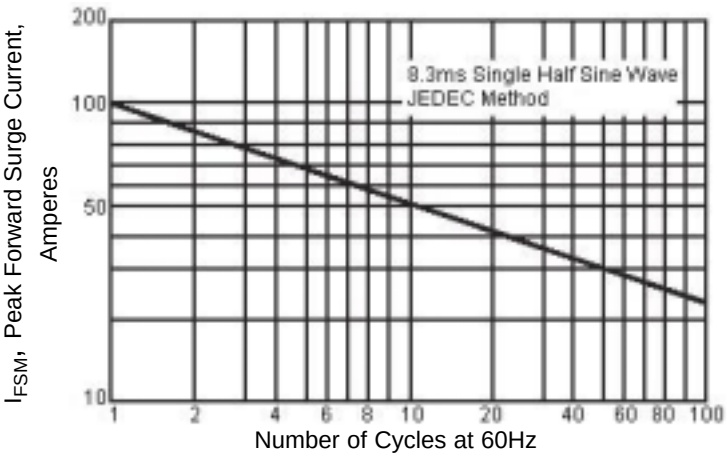
Pulse Derating Curve



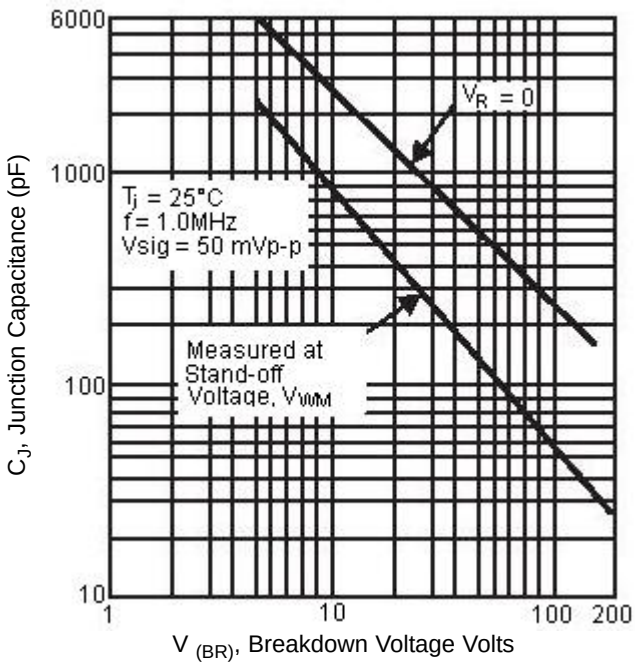
Clamping Power Pulse Waveform



Maximum Non-Repetitive Forward Surge Current Unidirectional Only



Typical Junction Capacitance (Unidirectional)



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

Device		Device Marking Code	Breakdown Voltage V_{BR} (Volts) (Note 1)		Test Current at I_T (mA)	Stand-Off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_D (µA)	Maximum Peak Pulse Current I_{RSM} (Note 2) (Amps)	Maximum Clamping Voltage at I_{PPM} V_C (Volts)	Maximum Temperature Coefficient of V_{BR} (%/°C)
Unidirectional	Bidirectional		Minimum	Maximum						
P6SMB100A	P6SMB100CA	MXJ	95.0	105.0	1.0	85.5	5.0	4.5	137.0	0.106
P6SMB10A	P6SMB10CA	KPJ	9.50	10.5		8.55	10.0	43.0	14.5	0.073
P6SMB150A	P6SMB150CA	NKJ	143.0	158.0		128.0	5.0	3.0	207.0	0.108
P6SMB18A	P6SMB18CA	LEJ	17.1	18.9		15.3		25.0	25.2	0.088
P6SMB200A	P6SMB200CA	NTJ	190.0	210.0		171.0		2.2	274.0	0.108
P6SMB22A	P6SMB22CA	LKJ	20.9	23.1		18.8		20.0	30.6	0.092
P6SMB27A	P6SMB27CA	LPJ	25.7	28.4		23.1		16.8	37.5	0.096
P6SMB33A	P6SMB33CA	LTJ	31.4	34.7		28.2		13.8	45.7	0.098
P6SMB36A	P6SMB36CA	LVJ	34.2	37.8		30.8		12.6	49.9	0.099
P6SMB39A	P6SMB39CA	LXJ	37.1	41.0		33.3		11.6	53.9	0.100
P6SMB47A	P6SMB47CA	MEJ	44.7	49.4		40.2		9.7	64.8	0.101
P6SMB62A	P6SMB62CA	MMJ	58.9	65.1		53.0		7.4	85.0	0.104
P6SMB68A	P6SMB68CA	MPJ	64.6	71.4		58.1		6.8	92.0	
P6SMB6V8A	P6SMB6V8CA	KEJ	6.45	7.14	10.0	5.80	1000.0	60.0	10.5	0.057

Notes:

1. V_{BR} measured after I_T applied for 300µs, I_T = square wave pulse or equivalent.
2. Surge current waverform and derate.
3. For bipolar types having V_{WM} of 10 volts and under, the I_D limit is doubled.
4. For bidirectional use C or CA suffix for types P6SMB6.8 through P6SMB220A.
5. All terms and symbols are consistent with ANSI/IEEE C62.35.

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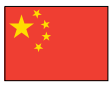

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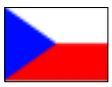

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