

# Transient Voltage Suppressor

## P6SMB6.8A - P6SMB600CA

### Features

- Low profile package with built-in strain relief for SMT applications
- Low incremental surge resistance, excellent clamping capability
- 600W peak pulse power capability with very fast response time
- High temperature soldering guaranteed: 260°C / 10s at terminals
- RoHS compliant with Halogen-free

HF



### Mechanical Data

- Case: SMB molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208

### Maximum Ratings (@T<sub>A</sub> = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000µs waveform *1 (FIG.1)	P <sub>PPM</sub>	600	W
Peak pulse current with a 10/1000µs waveform *1	I <sub>PP</sub>	see E. Characteristics	A
Typical Thermal Resistance *2	R <sub>θJA</sub>	60	°C/W
	R <sub>θJC</sub>	23	
	R <sub>θJL</sub>	25	
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 ~ +150	°C

Note \*1: Non-repetitive current pulses, per Fig. 3 and derated above T<sub>A</sub> = 25°C

Note \*2: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1 mm copper pad area

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## Electrical Characteristics (@T<sub>A</sub> = 25°C unless otherwise specified)

Type Number		Breakdown Voltage VBR @ IT		Test Current	Reverse Standoff Voltage	Max. Clamping Voltage @ I <sub>PP</sub>	Max. Peak Pulse Current	Max. Reverse Leakage @ V <sub>RWM</sub>
		Min.	Max.					
UNI	BI	V		mA	V	V	A	μA
P6SMB6.8A	P6SMB6.8CA	6.45	7.14	10	5.8	10.5	57.1	1000
P6SMB7.5A	P6SMB7.5CA	7.13	7.88	10	6.4	11.3	53.1	500
P6SMB8.2A	P6SMB8.2CA	7.79	8.61	10	7.02	12.1	49.6	200
P6SMB9.1A	P6SMB9.1CA	8.65	9.55	1	7.78	13.4	44.8	50
P6SMB10A	P6SMB10CA	9.5	10.5	1	8.55	14.5	41.4	10
P6SMB11A	P6SMB11CA	10.5	11.6	1	9.4	15.6	38.5	5
P6SMB12A	P6SMB12CA	11.4	12.6	1	10.2	16.7	35.9	5
P6SMB13A	P6SMB13CA	12.4	13.7	1	11.1	18.2	33	1
P6SMB15A	P6SMB15CA	14.3	15.8	1	12.8	21.2	28.3	1
P6SMB16A	P6SMB16CA	15.2	16.8	1	13.6	22.5	26.7	1
P6SMB18A	P6SMB18CA	17.1	18.9	1	15.3	25.2	23.8	1
P6SMB20A	P6SMB20CA	19	21	1	17.1	27.7	21.7	1
P6SMB22A	P6SMB22CA	20.9	23.1	1	18.8	30.6	19.6	1
P6SMB24A	P6SMB24CA	22.8	25.2	1	20.5	33.2	18.1	1
P6SMB27A	P6SMB27CA	25.7	28.4	1	23.1	37.5	16	1
P6SMB30A	P6SMB30CA	28.5	31.5	1	25.6	41.4	14.5	1
P6SMB33A	P6SMB33CA	31.4	34.7	1	28.2	45.7	13.1	1
P6SMB36A	P6SMB36CA	34.2	37.8	1	30.8	49.9	12	1
P6SMB39A	P6SMB39CA	37.1	41	1	33.3	53.9	11.1	1
P6SMB43A	P6SMB43CA	40.9	45.2	1	36.8	59.3	10.1	1
P6SMB47A	P6SMB47CA	44.7	49.4	1	40.2	64.8	9.3	1
P6SMB51A	P6SMB51CA	48.5	53.6	1	43.6	70.1	8.6	1
P6SMB56A	P6SMB56CA	53.2	58.8	1	47.8	77	7.8	1
P6SMB62A	P6SMB62CA	58.9	65.1	1	53	85	7.1	1
P6SMB68A	P6SMB68CA	64.6	71.4	1	58.1	92	6.5	1
P6SMB75A	P6SMB75CA	71.3	78.8	1	64.1	103	5.8	1
P6SMB82A	P6SMB82CA	77.9	86.1	1	70.1	113	5.3	1

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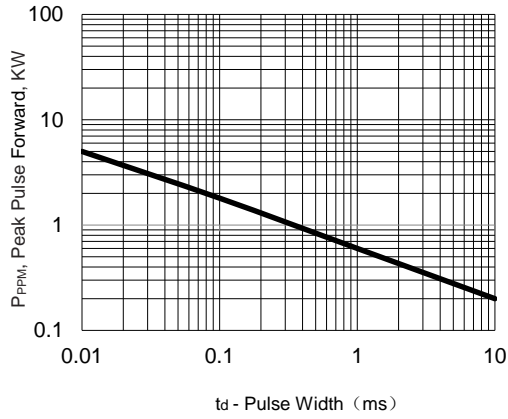
Type Number		Breakdown Voltage VBR @ IT		Test Current	Max. Reverse Leakage	Reverse Standoff Voltage	Max. Peak Pulse Current	Max. Reverse Leakage @ VRWM
		Min.	Max.					
UNI	BI	V		mA	V	V	A	uA
P6SMB91A	P6SMB91CA	86.5	95.5	1	77.8	125	4.8	1
P6SMB100A	P6SMB100CA	95	105	1	85.5	137	4.4	1
P6SMB110A	P6SMB110CA	105	116	1	94	152	3.9	1
P6SMB120A	P6SMB120CA	114	126	1	102	165	3.6	1
P6SMB130A	P6SMB130CA	124	137	1	111	179	3.4	1
P6SMB150A	P6SMB150CA	143	158	1	128	207	2.9	1
P6SMB160A	P6SMB160CA	152	168	1	136	219	2.7	1
P6SMB170A	P6SMB170CA	162	179	1	145	234	2.6	1
P6SMB180A	P6SMB180CA	171	189	1	154	246	2.4	1
P6SMB200A	P6SMB200CA	190	210	1	171	274	2.2	1
P6SMB220A	P6SMB220CA	209	231	1	185	328	1.8	1
P6SMB250A	P6SMB250CA	237	263	1	214	344	1.7	1
P6SMB300A	P6SMB300CA	285	315	1	256	414	1.4	1
P6SMB350A	P6SMB350CA	333	368	1	300	482	1.2	1
P6SMB400A	P6SMB400CA	380	420	1	342	548	1.1	1
P6SMB440A	P6SMB440CA	418	462	1	376	602	1	1
P6SMB500A	P6SMB500CA	475	525	1	427	685	0.9	1
P6SMB530A	P6SMB530CA	503.5	556.5	1	450	725	0.8	1
P6SMB540A	P6SMB540CA	513	567	1	462	740	0.8	1
P6SMB550A	P6SMB550CA	522.5	577.5	1	467	760	0.8	1
P6SMB600A	P6SMB600CA	570	630	1	513	828	0.7	1

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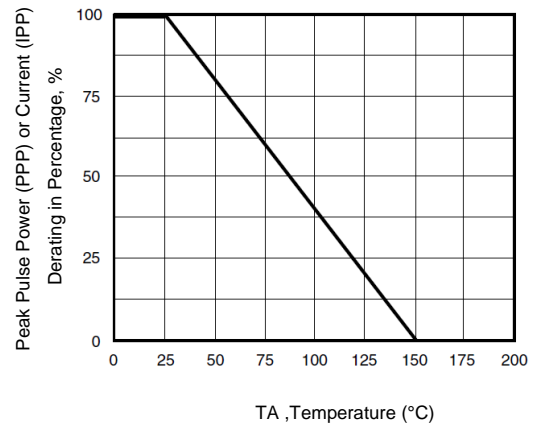
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## Ratings and Characteristic Curves (@ $T_A=25^\circ\text{C}$ unless otherwise noted)

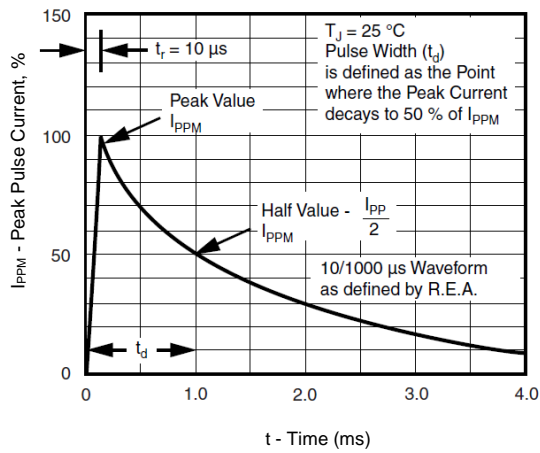
**Fig.1 Peak Pulse Power Rating Curve**



**Fig.2 DERATING CURVE**



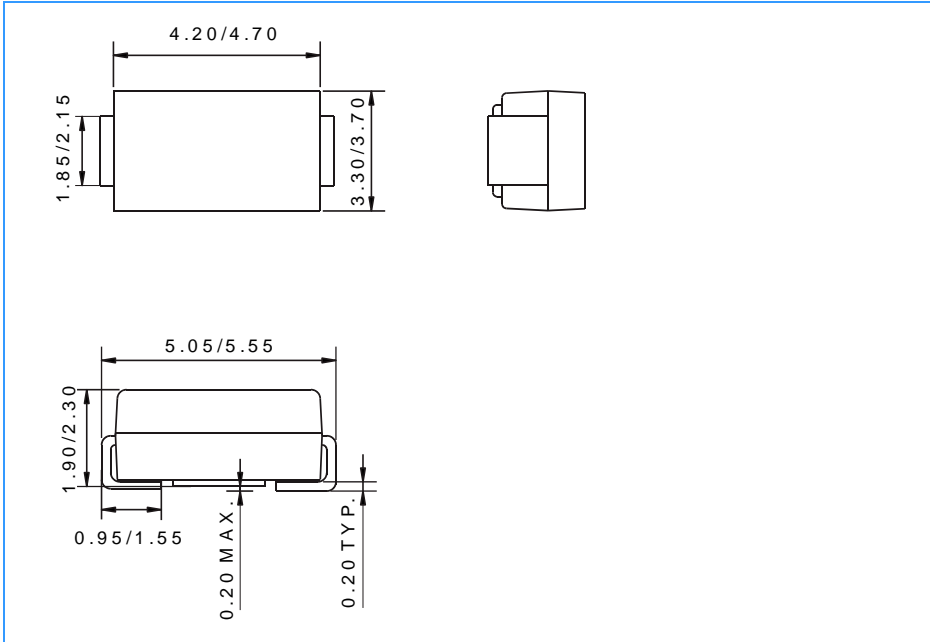
**Fig.3 Pulse Waveform**



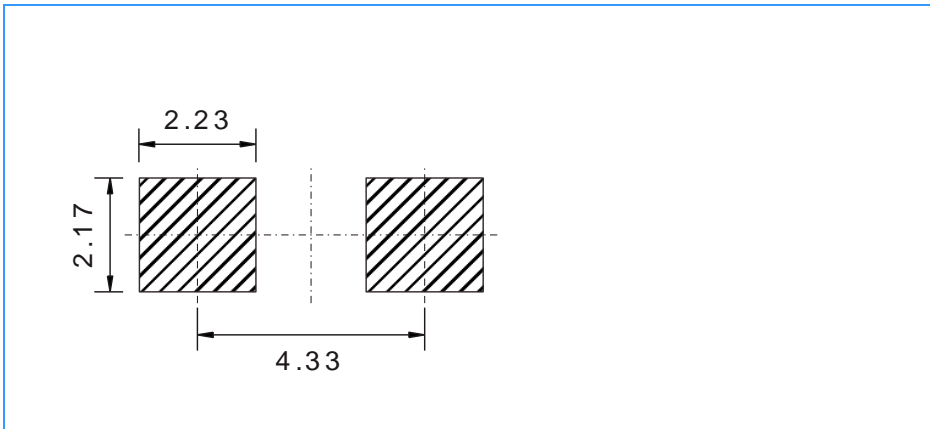
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## Package Outline Dimensions (unit: mm)



## Mounting Pad Layout (unit: mm)



## Ordering Information

Part Number	Package	Shipping Quantity
P6SMB6.8A - P6SMB600CA	SMB	3000 / Tape & Reel