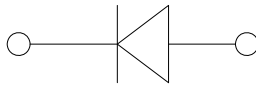
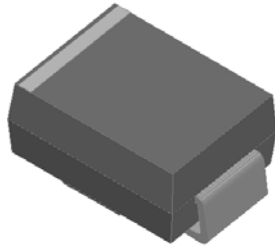
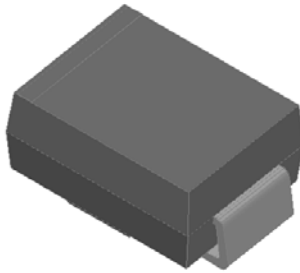


## Surface Mount Transient Voltage Suppressors

### Uni-directional



### Bi-directional



### Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 600 W peak pulse power capability with a 10/1000  $\mu$ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

### Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

### Mechanical Data

- **Package:** DO-214AA (SMB)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

### ■Maximum Ratings ( $T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform (1) (2) (Fig.1)	$P_{PPM}$	W	600
Peak pulse current, with a 10/1000us waveform(1)	$I_{PPM}$	A	See Next Table
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only (2)	$I_{FSM}$	A	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)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage @ at 50A for unidirectional only (3)	$V_F$	V	3.5



# P6SMB SERIES

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal resistance(Typical)	R <sub>θJL</sub>	°C/W	junction to lead	20
	R <sub>θJA</sub>	°C/W	junction to ambient	100

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub>= 25°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<sub>F</sub><3.5V for devices of V<sub>BR</sub><200V and V<sub>F</sub><5.0V for devices of V<sub>BR</sub>>201V.

## ■ Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V <sub>BR</sub> @I <sub>T</sub>			Maximum Reverse Leakage I <sub>R</sub> <sup>(6)</sup> @ V <sub>RWM</sub> (μA)	Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Surge Current I <sub>PP</sub> <sup>(5)</sup> (A)	Maximum Clamping Voltage V <sub>c</sub> @ I <sub>PP</sub> (V)
		Min(V)	Max (V)	I <sub>T</sub> <sup>(4)</sup> (mA)				
P6SMB6.8A	P6SMB6.8CA	6.46	7.14	10	1000	5.8	57.14	10.5
P6SMB7.5A	P6SMB7.5CA	7.13	7.88	10	500	6.4	53.10	11.3
P6SMB8.2A	P6SMB8.2CA	7.79	8.61	10	200	7.0	49.59	12.1
P6SMB9.1A	P6SMB9.1CA	8.65	9.56	1	50	7.8	44.78	13.4
P6SMB10A	P6SMB10CA	9.50	10.50	1	10	8.6	41.38	14.5
P6SMB11A	P6SMB11CA	10.45	11.55	1	5	9.4	38.46	15.6
P6SMB12A	P6SMB12CA	11.40	12.60	1	5	10.2	35.93	16.7
P6SMB13A	P6SMB13CA	12.35	13.65	1	5	11.1	32.97	18.2
P6SMB15A	P6SMB15CA	14.25	15.75	1	5	12.8	28.30	21.2
P6SMB16A	P6SMB16CA	15.20	16.80	1	5	13.6	26.67	22.5
P6SMB18A	P6SMB18CA	17.10	18.90	1	5	15.3	23.81	25.2
P6SMB20A	P6SMB20CA	19.00	21.00	1	5	17.1	21.66	27.7
P6SMB22A	P6SMB22CA	20.90	23.10	1	5	18.8	19.61	30.6
P6SMB24A	P6SMB24CA	22.80	25.20	1	5	20.5	18.07	33.2
P6SMB27A	P6SMB27CA	25.65	28.35	1	5	23.1	16.00	37.5
P6SMB30A	P6SMB30CA	28.50	31.50	1	5	25.6	14.49	41.4
P6SMB33A	P6SMB33CA	31.35	34.65	1	5	28.2	13.13	45.7
P6SMB36A	P6SMB36CA	34.20	37.80	1	5	30.8	12.02	49.9
P6SMB39A	P6SMB39CA	37.05	40.95	1	5	33.3	11.13	53.9
P6SMB43A	P6SMB43CA	40.85	45.15	1	5	36.8	10.12	59.3
P6SMB47A	P6SMB47CA	44.65	49.35	1	5	40.2	9.26	64.8
P6SMB51A	P6SMB51CA	48.45	53.55	1	5	43.6	8.56	70.1
P6SMB56A	P6SMB56CA	53.20	58.80	1	5	47.8	7.79	77.0
P6SMB62A	P6SMB62CA	58.90	65.10	1	5	53.0	7.06	85.0
P6SMB68A	P6SMB68CA	64.60	71.40	1	5	58.1	6.52	92.0



## P6SMB SERIES

### ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage V <sub>BR</sub> @I <sub>T</sub>			Maximum Reverse Leakage I <sub>R</sub> <sup>(6)</sup> @ V <sub>RWM</sub> (μA)	Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Surge Current I <sub>PP</sub> <sup>(5)</sup> (A)	Maximum Clamping Voltage V <sub>c</sub> @ I <sub>PP</sub> (V)
		Min(V)	Max (V)	I <sub>T</sub> <sup>(4)</sup> (mA)				
P6SMB75A	P6SMB75CA	71.25	78.75	1	5	64.1	5.83	103.0
P6SMB82A	P6SMB82CA	77.90	86.10	1	5	70.1	5.31	113.0
P6SMB91A	P6SMB91CA	86.45	95.35	1	5	77.8	4.80	125.0
P6SMB100A	P6SMB100CA	95.00	105.00	1	5	85.5	4.38	137.0
P6SMB110A	P6SMB110CA	104.50	115.50	1	5	94.0	3.95	152.0
P6SMB120A	P6SMB120CA	114.00	126.00	1	5	102.0	3.64	165.0
P6SMB130A	P6SMB130CA	123.50	136.50	1	5	111.0	3.35	179.0
P6SMB150A	P6SMB150CA	142.50	157.50	1	5	128.0	2.90	207.0
P6SMB160A	P6SMB160CA	152.00	168.00	1	5	136.0	2.74	219.0
P6SMB170A	P6SMB170CA	161.50	178.50	1	5	145.0	2.56	234.0
P6SMB180A	P6SMB180CA	171.00	189.00	1	5	154.0	2.44	246.0
P6SMB200A	P6SMB200CA	190.00	210.00	1	5	171.0	2.19	274.0
P6SMB220A	P6SMB220CA	209.00	231.00	1	5	185.0	1.83	328.0
P6SMB250A	P6SMB250CA	237.50	262.50	1	5	214.0	1.74	344.0
P6SMB300A	P6SMB300CA	285.00	315.00	1	5	256.0	1.45	414.0
P6SMB350A	P6SMB350CA	332.50	367.50	1	5	299.3	1.24	482.0
P6SMB380A	P6SMB380CA	361.00	399.00	1	5	324.9	1.14	524.4
P6SMB400A	P6SMB400CA	380.00	420.00	1	5	342.0	1.09	548.0
P6SMB440A	P6SMB440CA	418.00	462.00	1	5	376.2	0.99	607.2
P6SMB500A	P6SMB500CA	475.00	525.00	1	5	427.5	0.87	690.0
P6SMB520A	P6SMB520CA	494.00	546.00	1	5	444.6	0.84	717.6
P6SMB550A	P6SMB550CA	522.50	577.50	1	5	470.3	0.79	759.0
P6SMB600A	P6SMB600CA	570.00	630.00	1	5	513.0	0.72	828.0

Notes:

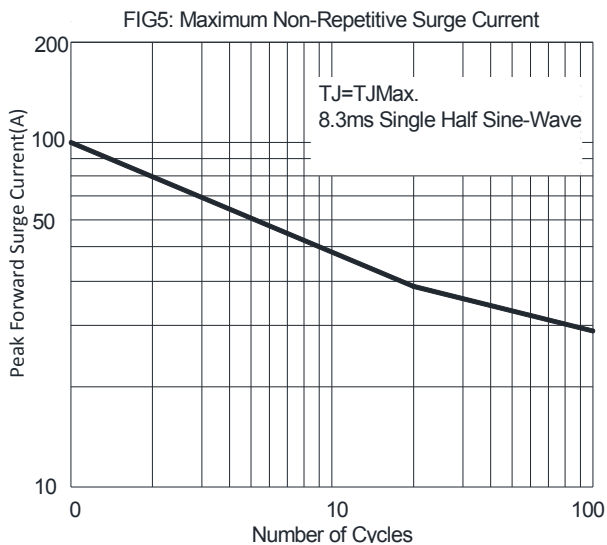
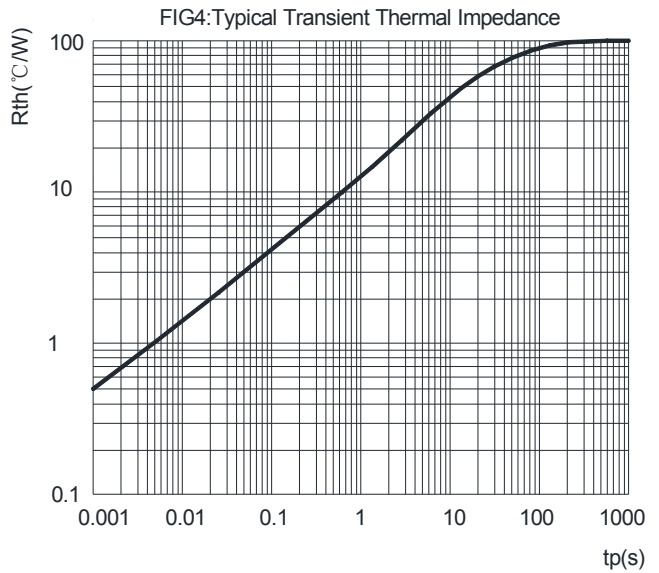
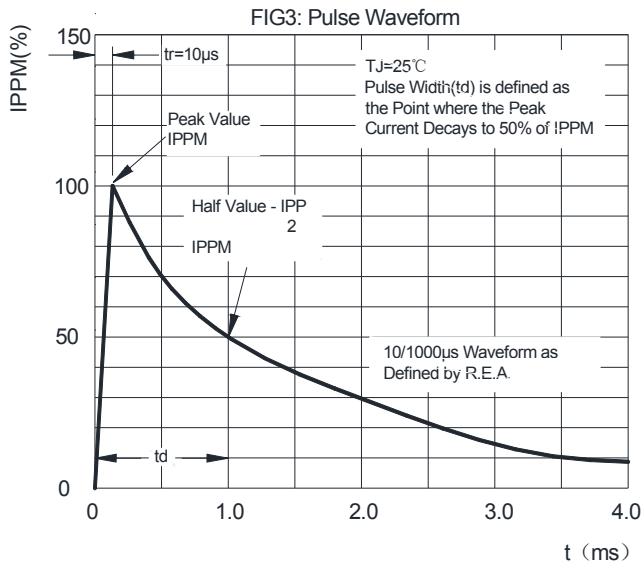
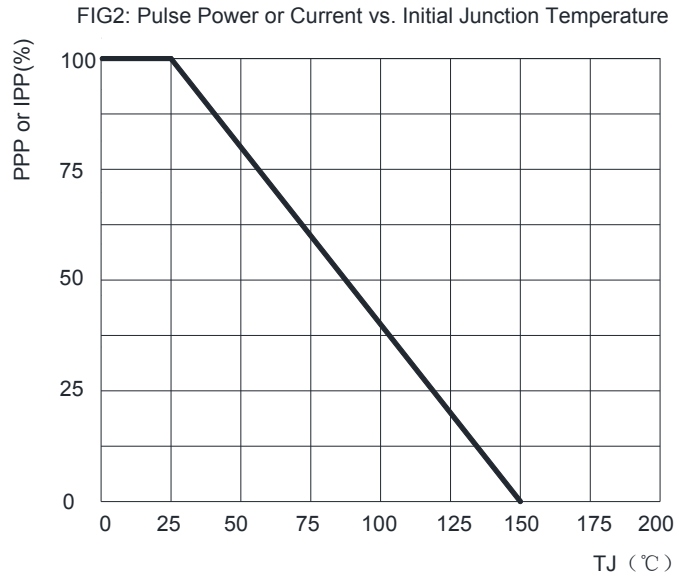
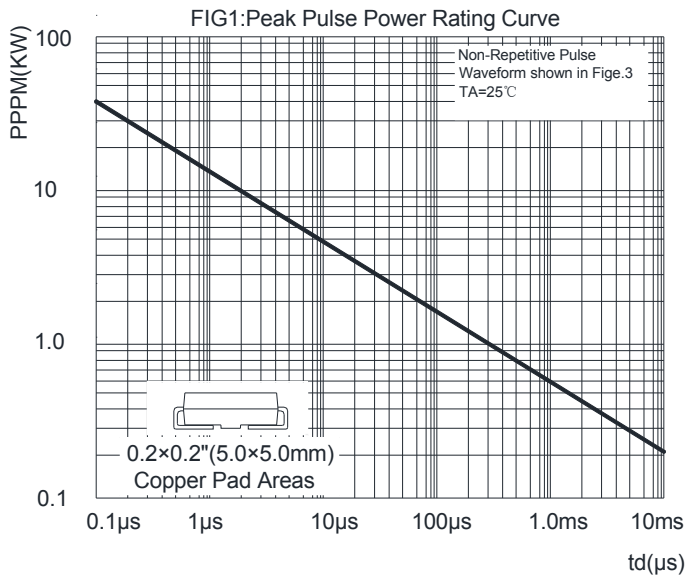
(4) Pulse test: t<sub>p</sub>≤50ms.

(5) Surge current waveform per Fig. 3 and derated per Fig.2.

(6) For bi-directional types having VRWM of 10 V and less, the I<sub>R</sub> limit is doubled.



## ■ Characteristics (Typical)



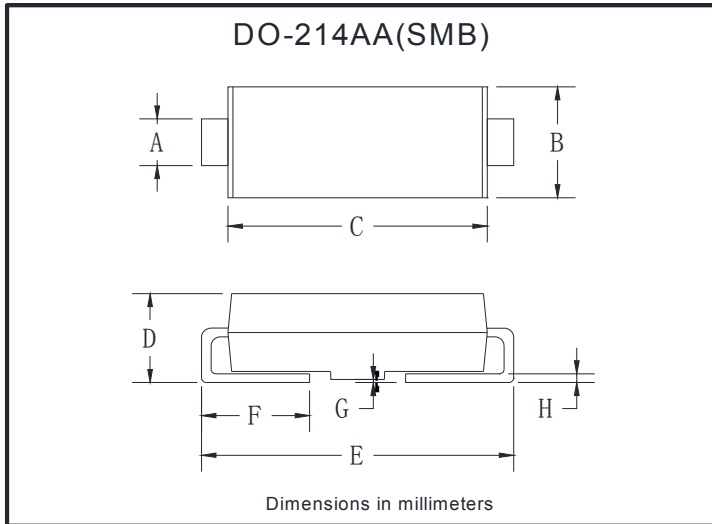


# P6SMB SERIES

## Ordering Information (Example)

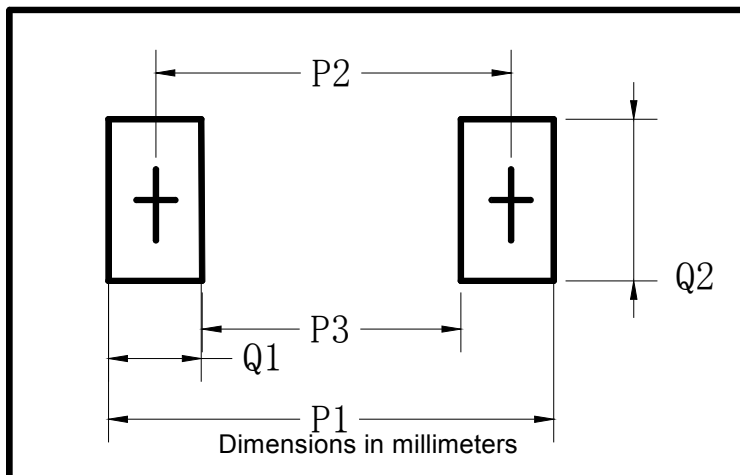
PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
P6SMB6.8A-P6SMB600CA	F1	0.0975	3000	6000	48000	13" reel
P6SMB6.8A-P6SMB600CA	F2	0.0975	750	3000	24000	7" reel
P6SMB6.8A-P6SMB600CA	F3	0.0975	500	2000	16000	7" reel

## Outline Dimensions



DO-214AA(SMB)		
Dim	Min	Max
A	1.85	2.15
B	3.30	3.94
C	4.25	4.75
D	1.99	2.61
E	5.21	5.59
F	0.90	1.41
G	0.10	0.20
H	0.15	0.31

## Suggested pad layout



DO-214AA(SMB)	
Dim	Millimeters
P1	6.8
P2	4.3
P3	1.8
Q1	2.5
Q2	2.3



## P6SMB SERIES

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