



# P6SMBJ SERIES

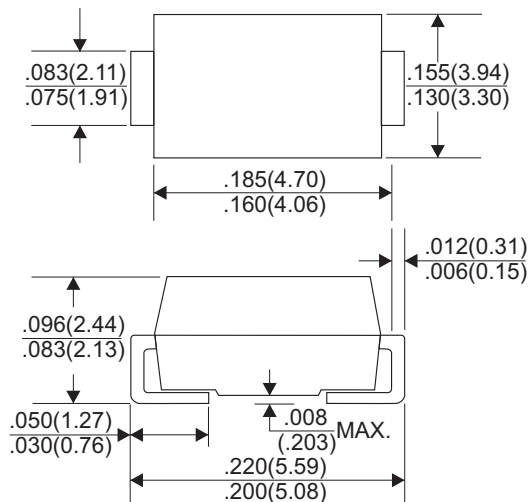
## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

VOLTAGE RANGE 5.0 to 400 Volts

600 Watts Peak Power



### DO-214AA(SMB)



Dimensions in inches and (millimeters)

## FEATURES

- \* For surface mount application
- \* Built-in strain relief
- \* Excellent clamping capability
- \* Low profile package
- \* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- \* Typical  $I_R$  less than  $1\mu A$  above 10V
- \* High temperature soldering guaranteed:  $260^\circ C$  / 10 seconds at terminals

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: Solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity: Color band denotes cathode end except Bidirectional
- \* Mounting position: Any
- \*

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating  $25^\circ C$  ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ C$ , $T_P=1ms$ (NOTE 1)	$P_{PK}$	Minimum 600	Watts
Peak Dissipation on infinite heatsink at $T_L=75^\circ C$ ,	$P_D$	5.0	Watt
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	$I_{FSM}$	100	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional only	$V_F$	3.5/5.0	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	$^\circ C$

### NOTES:

1. Non-repetitive current pulse per Fig. 3 and derated above  $T_A=25^\circ C$  per Fig. 2.
2. Mounted on Copper Pad area of  $5.0mm^2$  (.013mm Thick) to each terminal.
3. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.

## DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types SMBJ5.0 thru SMBJ440.
2. Electrical characteristics apply in both directions.

# RATING AND CHARACTERISTIC CURVES (P6SMBJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

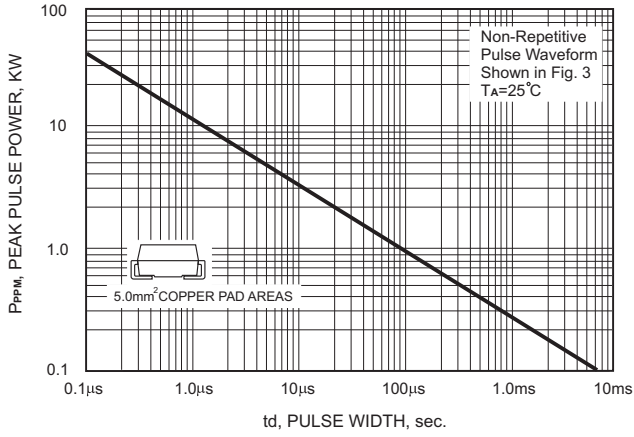


FIG.2-PULSE DERATING CURVE

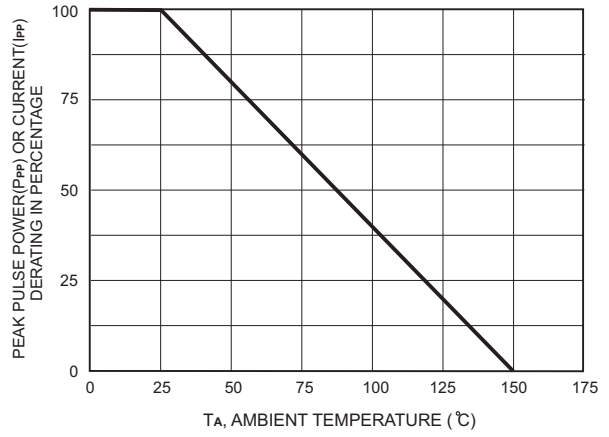


FIG.3-PULSE WAVE FORM

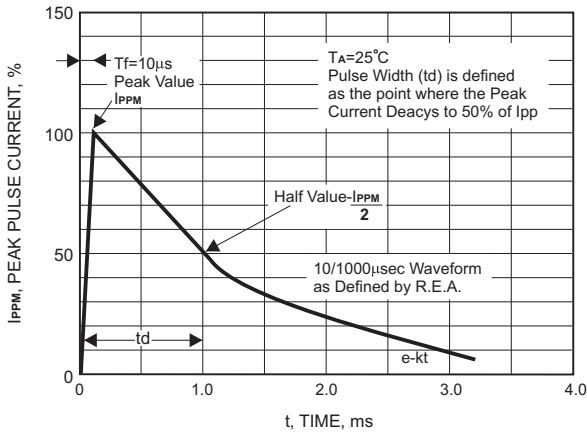


FIG.4-TYPICAL JUNCTION CAPACITANCE

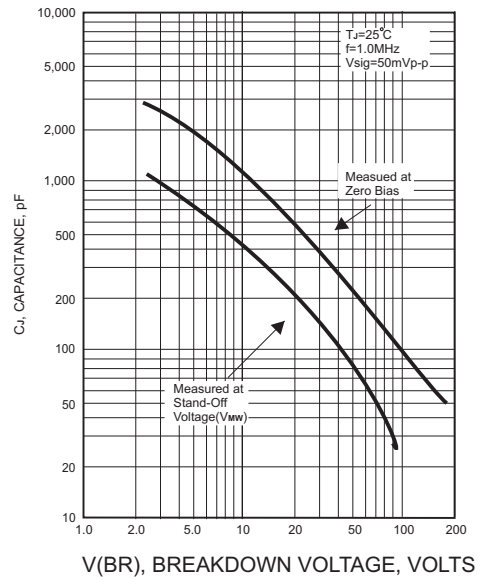


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

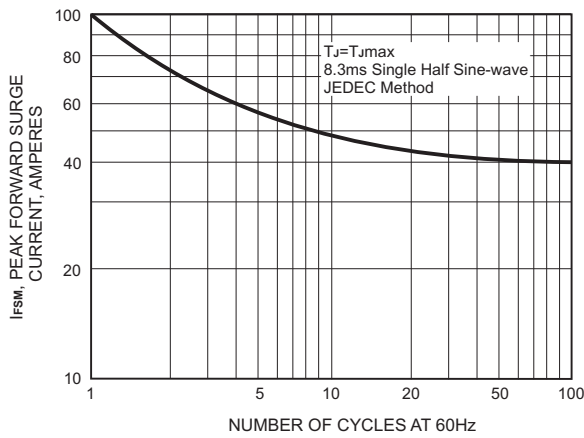
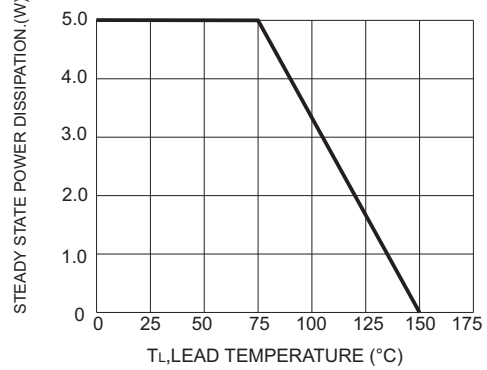


FIG.6-STEADY STATE POWER DERATING CURVE



Electical Characteristics(T<sub>a</sub>=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltag <sub>s</sub> V <sub>BR</sub> @I <sub>r</sub>			Maximum Reverse Leakage I <sub>r</sub> @V <sub>RWM</sub> (uA)	Working Peak Reverse Voltage V <sub>RWM</sub> (V)	Maximum Reverse Surge Current I <sub>PP</sub> (A)	Maximum Clamping Voltag <sub>s</sub> V <sub>c</sub> @I <sub>PP</sub> (V)
		Uni	Bi	Min(V)	Max(V)	I <sub>r</sub> (mA)				
P6SMBJ6.8A	P6SMBJ6.8CA	EZB	DZB	6.46	7.14	10	1000	5.8	57.14	10.5
P6SMBJ7.5A	P6SMBJ7.5CA	EZD	DZD	7.13	7.88	10	500	6.4	53.10	11.3
P6SMBJ8.2A	P6SMBJ8.2CA	EZF	DZF	7.79	8.61	10	200	7.0	49.59	12.1
P6SMBJ9.1A	P6SMBJ9.1CA	EZH	DZH	8.65	9.56	1	50	7.8	29.85	13.4
P6SMBJ10A	P6SMBJ10CA	EZK	DZK	9.50	10.50	1	10	8.6	44.78	14.5
P6SMBJ11A	P6SMBJ11CA	EZM	DZM	10.45	11.55	1	5	9.4	38.46	15.6
P6SMBJ12A	P6SMBJ12CA	EZP	DZP	11.40	12.60	1	5	10.2	35.93	16.7
P6SMBJ13A	P6SMBJ13CA	EZR	DZR	12.35	13.65	1	1	11.1	32.97	18.2
P6SMBJ15A	P6SMBJ15CA	EZT	DZT	14.25	15.75	1	1	12.8	28.31	21.2
P6SMBJ16A	P6SMBJ16CA	EZV	DZV	15.20	16.80	1	1	13.6	26.67	22.5
P6SMBJ18A	P6SMBJ18CA	EZX	DZX	17.10	18.90	1	1	15.3	23.81	25.2
P6SMBJ20A	P6SMBJ20CA	EZZ	DZZ	19.00	21.00	1	1	17.1	21.66	27.7
P6SMBJ22A	P6SMBJ22CA	EXB	DXB	20.90	23.10	1	1	18.8	19.61	30.6
P6SMBJ24A	P6SMBJ24CA	EXD	DXD	22.80	25.20	1	1	20.5	18.07	33.2
P6SMBJ27A	P6SMBJ27CA	EXF	DXF	25.65	28.35	1	1	23.1	16.00	37.5
P6SMBJ30A	P6SMBJ30CA	EXH	DXH	28.50	31.50	1	1	25.6	14.49	41.4
P6SMBJ33A	P6SMBJ33CA	EXK	DXJ	31.35	34.65	1	1	28.2	13.13	45.7
P6SMBJ36A	P6SMBJ36CA	EXM	DXM	34.20	37.80	1	1	30.8	12.02	49.9
P6SMBJ39A	P6SMBJ39CA	EXP	DXP	37.05	40.95	1	1	33.3	11.13	53.9
P6SMBJ43A	P6SMBJ43CA	EXR	DXR	40.85	45.15	1	1	36.8	10.12	59.3
P6SMBJ47A	P6SMBJ47CA	EXT	DXT	44.65	49.35	1	1	40.2	9.26	64.8
P6SMBJ51A	P6SMBJ51CA	EXV	DXV	48.45	53.55	1	1	43.6	8.56	70.1
P6SMBJ56A	P6SMBJ56CA	EXX	DXX	53.20	58.80	1	1	47.8	7.79	77.0
P6SMBJ62A	P6SMBJ62CA	EXZ	DXZ	58.90	65.10	1	1	53.0	7.06	85.0
P6SMBJ68A	P6SMBJ68CA	EYB	DYB	64.60	71.40	1	1	58.1	6.52	92.0
P6SMBJ75A	P6SMBJ75CA	EYD	DYD	71.25	78.75	1	1	64.1	5.83	103.0
P6SMBJ82A	P6SMBJ82CA	EYF	DYF	77.90	86.10	1	1	70.1	5.31	113.0
P6SMBJ91A	P6SMBJ91CA	EYH	DYH	86.45	95.55	1	1	77.8	4.80	125.0
P6SMBJ100A	P6SMBJ100CA	EYK	DYK	95.00	105.00	1	1	85.5	4.38	137.0
P6SMBJ110A	P6SMBJ110CA	EYM	DYM	104.50	115.50	1	1	94.0	3.95	152.0
P6SMBJ120A	P6SMBJ120CA	EYP	DYP	114.00	126.00	1	1	102.0	3.64	165.0
P6SMBJ130A	P6SMBJ130CA	EYR	DYR	123.50	136.50	1	1	111.0	3.35	179.0
P6SMBJ150A	P6SMBJ150CA	YET	DYT	142.50	157.50	1	1	128.0	2.9	207.0
P6SMBJ160A	P6SMBJ160CA	EYV	DYV	152.00	168.00	1	1	136.0	2.74	219.0
P6SMBJ170A	P6SMBJ170CA	EYX	DYX	161.50	178.00	1	1	145.0	2.56	234.0
P6SMBJ180A	P6SMBJ180CA	EYZ	DTZ	171.00	189.00	1	1	154.0	2.44	246.0
P6SMBJ200A	P6SMBJ200CA	EWB	DWB	190.00	210.00	1	1	171.0	2.19	274.0
P6SMBJ220A	P6SMBJ220CA	EWD	DWD	209.00	231.00	1	1	185.0	1.83	328.0
P6SMBJ250A	P6SMBJ250CA	EWF	DWF	237.50	262.50	1	1	214.0	1.74	344.0
P6SMBJ300A	P6SMBJ300CA	EWH	DWH	285.00	315.00	1	1	256.0	1.45	414.0
P6SMBJ350A	P6SMBJ350CA	EWK	DWK	332.50	367.50	1	1	299.3	1.24	482.0
P6SMBJ400A	P6SMBJ400CA	EWM	DWM	380.00	420.00	1	1	342.0	1.09	552.0

Note:

- 1.The available parts are "A" type only,the parts without A(V<sub>BR</sub> is±10%) is not available
- 2.add suffix 'C'or 'CA' after part number to specify Bi-directional devices
- 3.For Bi-Directional devices having VR of 10 volts and under,the IR limit is double