



# 3.DATA SHEET

## P6SMBJ SERIES

### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE - 5.0 to 220 Volts 600 Watt Peak Power Pulse

SMB / DO-214AA

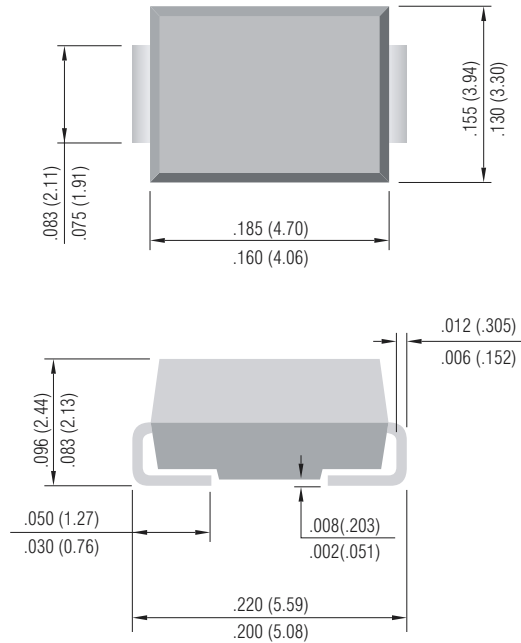
Unit: inch ( mm )

#### FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Low inductance
- Fast response time: typically less than 1.0 ps from 0 volts to BV min
- Typical IR less than 1μA above 10V
- High temperature soldering : 250°C/10 seconds at terminals.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0

#### MECHANICAL DATA

Case: JEDEC DO-214AA, Molded plastic over passivated junction  
 Terminals: Solder plated , solderable per MIL-STD-750, Method 2026  
 Polarity: Color band denotes positive end ( cathode) except Bidirectional.  
 Standard Packaging: 12mm tape per (EIA-481)  
 Weight: 0.003 ounces, 0.093 gram



### MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.  
 For Capacitive load derate current by 20%.

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ\text{C}$ , $T_P=1\text{ms}$ (Note 1,2 ,Fig.1 )	$P_{PPM}$	Minimum 600	Watts
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (Note 2,3)	$I_{FSM}$	100.0	Amps
Peak Pulse Current Current on 10/1000μs waveform(Note 1, Fig.3 )	$I_{PPM}$	See Table 1	Amps
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C

NOTES:

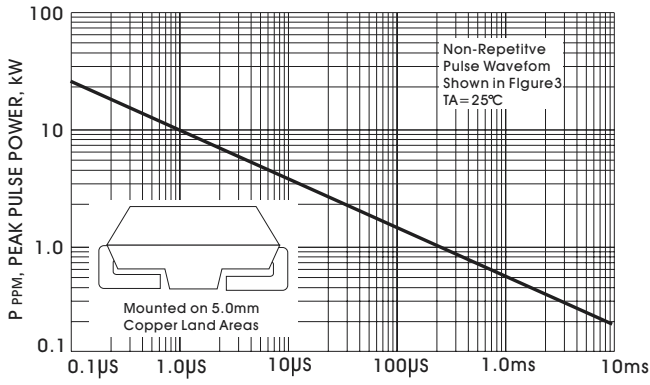
- 1.Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig. 2.
- 2.Mounted on 5.0mm<sup>2</sup> ( .013mm thick) land areas.
- 3.Measured on 8.3ms , single half sine-wave or equivalent square wave , duty cycle= 4 pulses per minutes maximum.



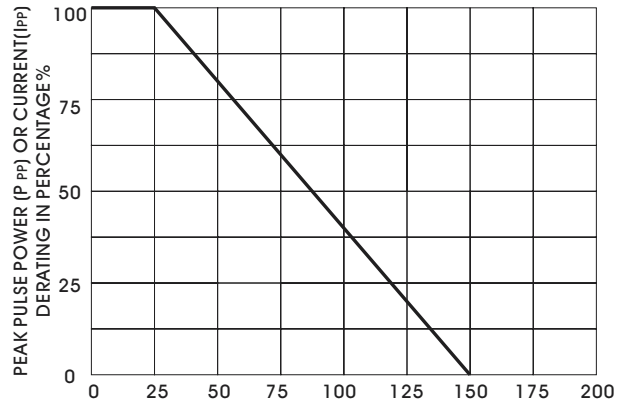
Part Number	Marking Code		V <sub>RWM</sub>	V <sub>BR</sub> @ I <sub>T</sub>			I <sub>R</sub> @ V <sub>RWM</sub>		V <sub>C</sub> @ I <sub>PP</sub>		PACKAGE
	UNI-	BI-		Min.	Max.	I <sub>T</sub>	UNI-	BI-	V	A	
			V	V	mA	uA	uA	V	A		
<b>600W Transient Voltage Suppressor</b>											
P6SMBJ5.0(C)	KD	AD	5.0	6.40	7.55	10	800	1600	9.6	62.5	SMB/DO-214AA
P6SMBJ5.0(C)A	KE	AE	5.0	6.40	7.25	10	800	1600	9.2	65.2	SMB/DO-214AA
P6SMBJ6.0(C)	KF	AF	6.0	6.67	8.45	10	800	1600	11.4	52.6	SMB/DO-214AA
P6SMBJ6.0(C)A	KG	AG	6.0	6.67	7.67	10	800	1600	10.3	58.3	SMB/DO-214AA
P6SMBJ6.5(C)	KH	AH	6.5	7.22	9.14	10	500	1000	12.3	48.7	SMB/DO-214AA
P6SMBJ6.5(C)A	KK	AK	6.5	7.22	8.30	10	500	1000	11.2	53.6	SMB/DO-214AA
P6SMBJ7.0(C)	KL	AL	7.0	7.78	9.86	10	200	400	13.3	45.1	SMB/DO-214AA
P6SMBJ7.0(C)A	KM	AM	7.0	7.78	8.95	10	200	400	12.0	50.0	SMB/DO-214AA
P6SMBJ7.5(C)	KN	AN	7.5	8.33	10.67	1.0	100	200	14.3	42.0	SMB/DO-214AA
P6SMBJ7.5(C)A	KP	AP	7.5	8.33	9.58	1.0	100	200	12.9	46.5	SMB/DO-214AA
P6SMBJ8.0(C)	KQ	AQ	8.0	8.89	11.30	1.0	50	100	15.0	40.0	SMB/DO-214AA
P6SMBJ8.0(C)A	KR	AR	8.0	8.89	10.23	1.0	50	100	13.6	44.1	SMB/DO-214AA
P6SMBJ8.5(C)	KS	AS	8.5	9.44	11.92	1.0	10	20	15.9	37.7	SMB/DO-214AA
P6SMBJ8.5(C)A	KT	AT	8.5	9.44	10.82	1.0	10	20	14.4	41.7	SMB/DO-214AA
P6SMBJ9.0(C)	KU	AU	9.0	10.0	12.6	1.0	5	10	16.9	35.5	SMB/DO-214AA
P6SMBJ9.0(C)A	KV	AV	9.0	10.0	11.5	1.0	5	10	15.4	39.0	SMB/DO-214AA
P6SMBJ10(C)	KW	AW	10	11.1	14.1	1.0	5	5	18.8	31.9	SMB/DO-214AA
P6SMBJ10(C)A	KX	AX	10	11.1	12.8	1.0	5	5	17.0	35.3	SMB/DO-214AA
P6SMBJ11(C)	KY	AY	11	12.2	15.4	1.0	5	5	20.1	29.9	SMB/DO-214AA
P6SMBJ11(C)A	KZ	AZ	11	12.2	14.0	1.0	5	5	18.2	33.0	SMB/DO-214AA
P6SMBJ12(C)	LD	BD	12	13.3	16.9	1.0	5	5	22.0	27.3	SMB/DO-214AA
P6SMBJ12(C)A	LE	BE	12	13.3	15.3	1.0	5	5	19.9	30.2	SMB/DO-214AA
P6SMBJ13(C)	LF	BF	13	14.4	18.2	1.0	5	5	23.8	25.2	SMB/DO-214AA
P6SMBJ13(C)A	LG	BG	13	14.4	16.5	1.0	5	5	21.5	27.9	SMB/DO-214AA
P6SMBJ14(C)	LH	BH	14	15.6	19.8	1.0	5	5	25.8	23.3	SMB/DO-214AA
P6SMBJ14(C)A	LK	BK	14	15.6	17.9	1.0	5	5	23.2	25.8	SMB/DO-214AA
P6SMBJ15(C)	LL	BL	15	16.7	21.1	1.0	5	5	26.9	22.3	SMB/DO-214AA
P6SMBJ15(C)A	LM	BM	15	16.7	19.2	1.0	5	5	24.4	24.0	SMB/DO-214AA
P6SMBJ16(C)	LN	BN	16	17.8	22.6	1.0	5	5	28.8	20.8	SMB/DO-214AA
P6SMBJ16(C)A	LP	BP	16	17.8	20.5	1.0	5	5	26.0	23.1	SMB/DO-214AA
P6SMBJ17(C)	LQ	BQ	17	18.9	23.9	1.0	5	5	30.5	19.7	SMB/DO-214AA
P6SMBJ17(C)A	LR	BR	17	18.9	21.7	1.0	5	5	27.6	21.7	SMB/DO-214AA
P6SMBJ18(C)	LS	BS	18	20.0	25.3	1.0	5	5	32.2	18.6	SMB/DO-214AA
P6SMBJ18(C)A	LT	BT	18	20.0	23.3	1.0	5	5	29.2	20.5	SMB/DO-214AA
P6SMBJ20(C)	LU	BU	20	22.2	28.1	1.0	5	5	35.8	16.7	SMB/DO-214AA
P6SMBJ20(C)A	LV	BV	20	22.2	25.5	1.0	5	5	32.4	18.5	SMB/DO-214AA
P6SMBJ22(C)	LW	BW	22	24.4	30.9	1.0	5	5	39.4	15.2	SMB/DO-214AA
P6SMBJ22(C)A	LX	BX	22	24.4	28.0	1.0	5	5	35.5	16.9	SMB/DO-214AA
P6SMBJ24(C)	LZ	BZ	24	26.7	33.8	1.0	5	5	43.0	14.0	SMB/DO-214AA
P6SMBJ24(C)A	LY	BY	24	26.7	30.7	1.0	5	5	38.9	15.4	SMB/DO-214AA
P6SMBJ26(C)	MD	CD	26	28.9	36.6	1.0	5	5	46.6	12.4	SMB/DO-214AA
P6SMBJ26(C)A	ME	CE	26	28.9	33.2	1.0	5	5	42.1	14.2	SMB/DO-214AA
P6SMBJ28(C)	MF	CF	28	31.1	39.4	1.0	5	5	50.0	12.0	SMB/DO-214AA
P6SMBJ28(C)A	MG	CG	28	31.1	35.8	1.0	5	5	45.4	13.2	SMB/DO-214AA
P6SMBJ30(C)	MH	CH	30	33.3	42.2	1.0	5	5	53.5	11.2	SMB/DO-214AA
P6SMBJ30(C)A	MK	CK	30	33.3	38.3	1.0	5	5	48.4	12.4	SMB/DO-214AA
P6SMBJ33(C)	ML	CL	33	36.7	46.5	1.0	5	5	59.0	10.2	SMB/DO-214AA
P6SMBJ33(C)A	MM	CM	33	36.7	42.2	1.0	5	5	53.3	11.3	SMB/DO-214AA
P6SMBJ36(C)	MN	CN	36	40.0	50.7	1.0	5	5	64.3	9.3	SMB/DO-214AA
P6SMBJ36(C)A	MP	CP	36	40.0	46.0	1.0	5	5	58.1	10.3	SMB/DO-214AA
P6SMBJ40(C)	MQ	CQ	40	44.4	56.3	1.0	5	5	71.4	8.4	SMB/DO-214AA
P6SMBJ40(C)A	MR	CR	40	44.4	51.1	1.0	5	5	64.5	9.3	SMB/DO-214AA



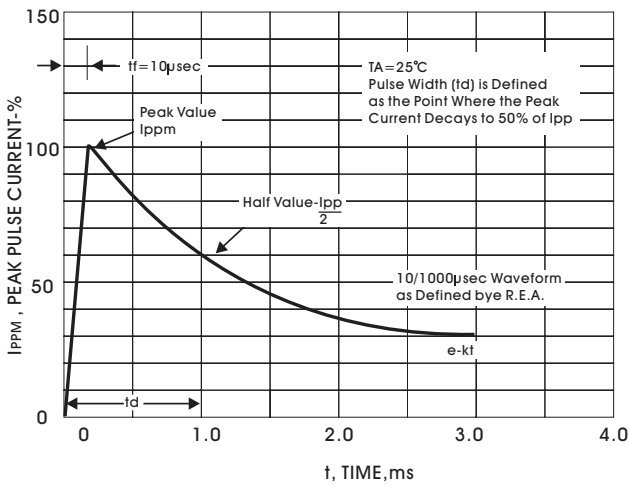
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	UNI-	BI-		Min.	Max.	I <sub>T</sub>	UNI-	BI-	V	A	
			V	V	mA	uA					
<b>600W Transient Voltage Suppressor</b>											
P6SMBJ43(C)	MS	CS	43	47.8	60.5	1.0	5	5	76.7	7.8	SMB/DO-214AA
P6SMBJ43(C)A	MT	CT	43	47.8	54.9	1.0	5	5	69.4	8.6	SMB/DO-214AA
P6SMBJ45(C)	MU	CU	45	50.0	63.3	1.0	5	5	80.3	7.5	SMB/DO-214AA
P6SMBJ45(C)A	MV	CV	45	50.0	57.5	1.0	5	5	72.7	8.3	SMB/DO-214AA
P6SMBJ48(C)	MW	CW	48	53.3	67.5	1.0	5	5	85.5	7.0	SMB/DO-214AA
P6SMBJ48(C)A	MX	CX	48	53.3	61.3	1.0	5	5	77.4	7.7	SMB/DO-214AA
P6SMBJ51(C)	MY	CY	51	56.7	71.8	1.0	5	5	91.1	6.6	SMB/DO-214AA
P6SMBJ51(C)A	MZ	CZ	51	56.7	65.2	1.0	5	5	82.4	7.3	SMB/DO-214AA
P6SMBJ54(C)	ND	DD	54	60.0	76.0	1.0	5	5	96.3	6.2	SMB/DO-214AA
P6SMBJ54(C)A	NE	DE	54	60.0	69.0	1.0	5	5	87.1	6.9	SMB/DO-214AA
P6SMBJ58(C)	NF	DF	58	64.4	81.6	1.0	5	5	103	5.8	SMB/DO-214AA
P6SMBJ58(C)A	NG	DG	58	64.4	74.1	1.0	5	5	93.6	6.4	SMB/DO-214AA
P6SMBJ60(C)	NH	DH	60	66.7	84.5	1.0	5	5	107	5.6	SMB/DO-214AA
P6SMBJ60(C)A	NK	DK	60	66.7	76.7	1.0	5	5	96.8	6.2	SMB/DO-214AA
P6SMBJ64(C)	NL	DL	64	71.1	90.1	1.0	5	5	114	5.3	SMB/DO-214AA
P6SMBJ64(C)A	NM	DM	64	71.1	81.8	1.0	5	5	103	5.8	SMB/DO-214AA
P6SMBJ70(C)	NN	DN	70	77.8	98.6	1.0	5	5	125	4.8	SMB/DO-214AA
P6SMBJ70(C)A	NP	DP	70	77.8	89.5	1.0	5	5	113	5.3	SMB/DO-214AA
P6SMBJ75(C)	NQ	DQ	75	83.3	105.7	1.0	5	5	134	4.5	SMB/DO-214AA
P6SMBJ75(C)A	NR	DR	75	83.3	95.8	1.0	5	5	121	4.9	SMB/DO-214AA
P6SMBJ78(C)	NS	DS	78	86.7	109.8	1.0	5	5	139	4.3	SMB/DO-214AA
P6SMBJ78(C)A	NT	DT	78	86.7	99.7	1.0	5	5	126	4.7	SMB/DO-214AA
P6SMBJ85(C)	NU	DU	85	94.4	119.2	1.0	5	5	151	3.9	SMB/DO-214AA
P6SMBJ85(C)A	NV	DV	85	94.4	108.2	1.0	5	5	137	4.4	SMB/DO-214AA
P6SMBJ90(C)	NW	DW	90	100	126.5	1.0	5	5	160	3.8	SMB/DO-214AA
P6SMBJ90(C)A	NX	DX	90	100	115.5	1.0	5	5	146	4.1	SMB/DO-214AA
P6SMBJ100(C)	NZ	DZ	100	111	141.0	1.0	5	5	179	3.4	SMB/DO-214AA
P6SMBJ100(C)A	NY	DY	100	111	128.0	1.0	5	5	162	3.7	SMB/DO-214AA
P6SMBJ110(C)	PD	ED	110	122	154.5	1.0	5	5	196	3.0	SMB/DO-214AA
P6SMBJ110(C)A	PE	EE	110	122	140.5	1.0	5	5	177	3.4	SMB/DO-214AA
P6SMBJ120(C)	PF	EF	120	133	169.0	1.0	5	5	214	2.8	SMB/DO-214AA
P6SMBJ120(C)A	PG	EG	120	133	153.0	1.0	5	5	193	3.1	SMB/DO-214AA
P6SMBJ130(C)	PH	EH	130	144	182.5	1.0	5	5	231	2.6	SMB/DO-214AA
P6SMBJ130(C)A	PK	EK	130	144	165.5	1.0	5	5	209	2.9	SMB/DO-214AA
P6SMBJ150(C)	PL	EL	150	167	211.5	1.0	5	5	268	2.2	SMB/DO-214AA
P6SMBJ150(C)A	PM	EM	150	167	192.5	1.0	5	5	243	2.5	SMB/DO-214AA
P6SMBJ160(C)	PN	EN	160	178	226.0	1.0	5	5	287	2.1	SMB/DO-214AA
P6SMBJ160(C)A	PP	EP	160	178	205.0	1.0	5	5	259	2.3	SMB/DO-214AA
P6SMBJ170(C)	PQ	EQ	170	189	239.5	1.0	5	5	304	2.0	SMB/DO-214AA
P6SMBJ170(C)A	PR	ER	170	189	217.5	1.0	5	5	275	2.2	SMB/DO-214AA
P6SMBJ180(C)	PS	ES	180	198	253.8	1.0	5	5	322	1.9	SMB/DO-214AA
P6SMBJ180(C)A	PT	ET	180	198	230.4	1.0	5	5	292	2.1	SMB/DO-214AA
P6SMBJ190(C)	PU	EU	190	209	267.9	1.0	5	5	340	1.8	SMB/DO-214AA
P6SMBJ190(C)A	PV	EV	190	209	243.2	1.0	5	5	308	2.0	SMB/DO-214AA
P6SMBJ200(C)	PW	EW	200	220	282.0	1.0	5	5	358	1.7	SMB/DO-214AA
P6SMBJ200(C)A	PX	EX	200	220	256.0	1.0	5	5	324	1.9	SMB/DO-214AA
P6SMBJ210(C)	PY	EY	210	231	296.1	1.0	5	5	376	1.6	SMB/DO-214AA
P6SMBJ210(C)A	PZ	EZ	210	231	268.8	1.0	5	5	340	1.8	SMB/DO-214AA
P6SMBJ220(C)	QD	FD	220	242	310.2	1.0	5	5	394	1.5	SMB/DO-214AA
P6SMBJ220(C)A	QE	FE	220	242	281.6	1.0	5	5	356	1.7	SMB/DO-214AA



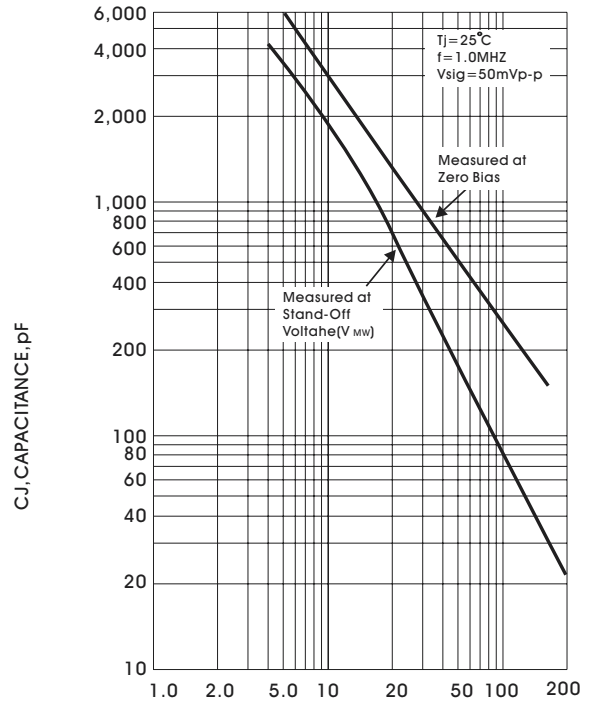
td, PULSE WIDTH, SEC  
**FIGURE 1-PEAK PULSE POWER RATING CURVE**



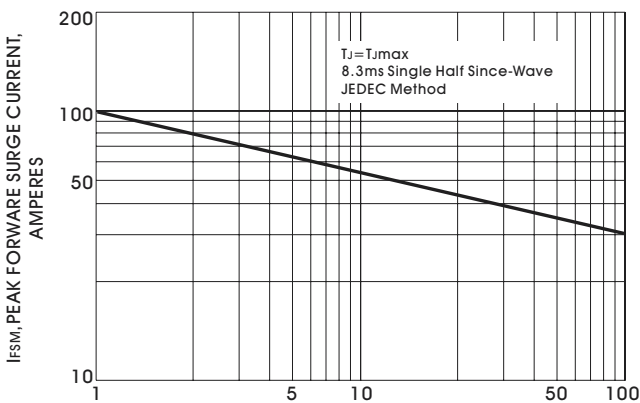
TA, AMBIENT TEMPERATURE, °C  
**FIGURE 2 DERATING CURVE**



**FIGURE 3-PULSE WAVEFORM**



V(BR), BREAKDOWN VOLTAGE, VOLTS  
**FIGURE 4 TYPICAL CAPACITANCE**



TL, LEAD TEMPERATURE, °C  
**FIG. 5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL**