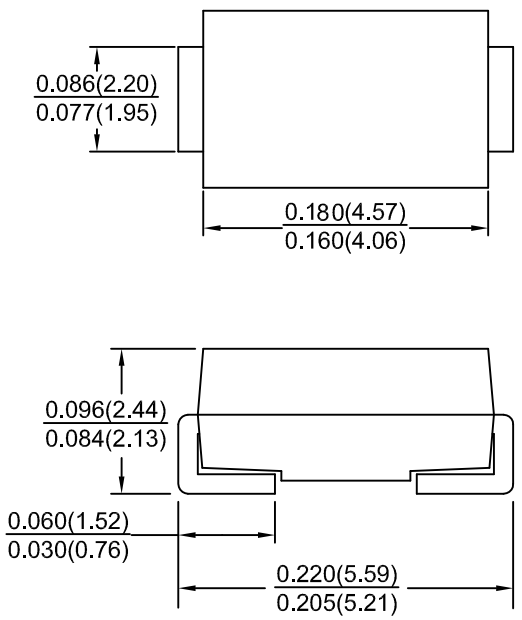
P6SMBJ5.0(A) THRU P6SMBJ170(A)
P6SMBJ5.0A(CA) THRU P6SMBJ170A(CA)

VOLTAGE - 5.0 TO 170 VOLTS 600 WATT PEAK POWER

FEATURES:

- Plastic package has Underwrites Laboratory Flammability Classification 94V-0
- Optimized for lan protection application
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time : typicaly less than 1.0 ps from 0 volts to $V_{(BR)\ min}$
- Typical I_R less than 1uA above 10V
- 600W peak pulse power capability with a 10/1000us waveform , repetition rate (duty cycle) : 0.01%
- High temperature soldering guaranteed : 250℃ /10 seconds at terminal

SMB/DO-214AA



Suffix " ","A"
UNDIRECTIONAL

Suffix "C","CA"
DIRECTIONAL

Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic
Terminals: Solder plated, Solderable per MIL-STD-705, Method 2026
Polarity: Indicated by cathode band band
Weight: 0.093 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25° C ambient temp. unless otherwise specified.
Single phase, half sine wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20 %.

Characteristic	Symbol	Value	Units
Minimum peak power dissipation on 10/1000us wavefrom (note1,fig.1)	P_{PK}	600	W
Maximum peak pulse current of on 10/1000us wavefrom (note1,fig3)	I_{PPM}	SEE TABLE1～3	Amps
Stedy state power dissipation at T_L=75 ℃ (note 2)	$P_{M(AV)}$	1.0	Watts
Maximum forward Surge current, 8.3ms Single Hlaf Sine-Wave Supermposed on rated load Unidirectional only (Note 3)	I_{FSM}	100	Amps
Maximum instantaneous forward voltage at 25A for unidirectional only(note 5)	V_F	3.5/5.0	Volts
Operating and storage temperature range	T_J, Tstg	-55 to+150	℃

NOTES :
1. Non-repetitive current pulse, per Fig.3 and derated above Ta=25℃ per Fig.2
2. Mounted on 5.0mmx5.0mm copper pads to each terminal
3. Measured on 8.3mS Singal half sine-wave or equivalent square wave ,duty cycle =4pulses per minute maximum for uni-directinal devices only
4. Peak pulse power wavefrom is 10/1000us
5. VF=3.5V on P6SMBJ5.0THRU P6SMBJ90 devices and VF=5.0V on P6SMBJ100 THRU P6SMBJ170

Figure 1.-Pulse Rating Cure

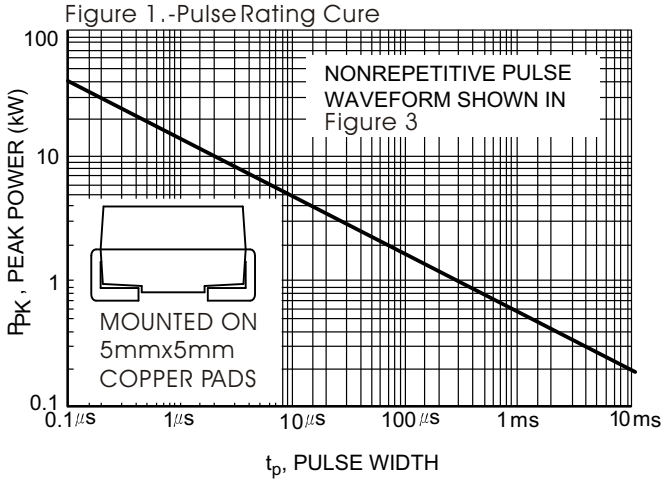


Figure 2.-Pulse Derating Curve

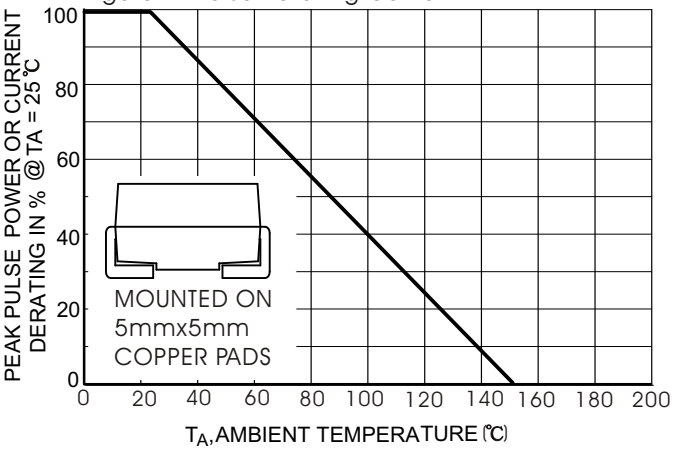


Figure 3.-Pulse Waveform

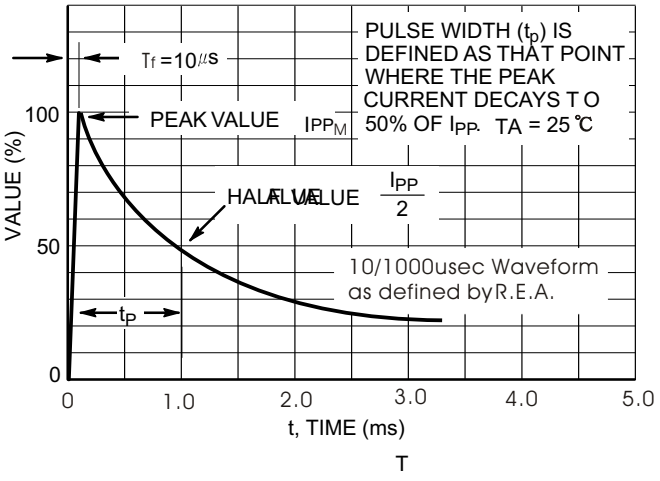


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Figure 4.-TYPICAL JUNCTION CAPACITANCE
UNIDIRECTIONAL

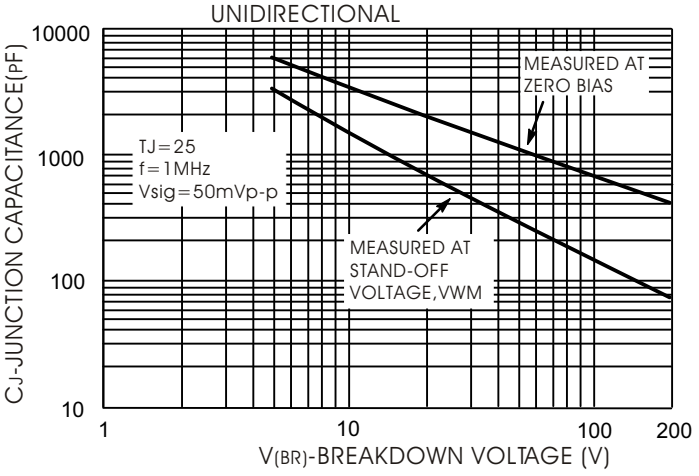


Figure 5.-TYPICAL JUNCTION CAPACITANCE
BIDIRECTIONAL

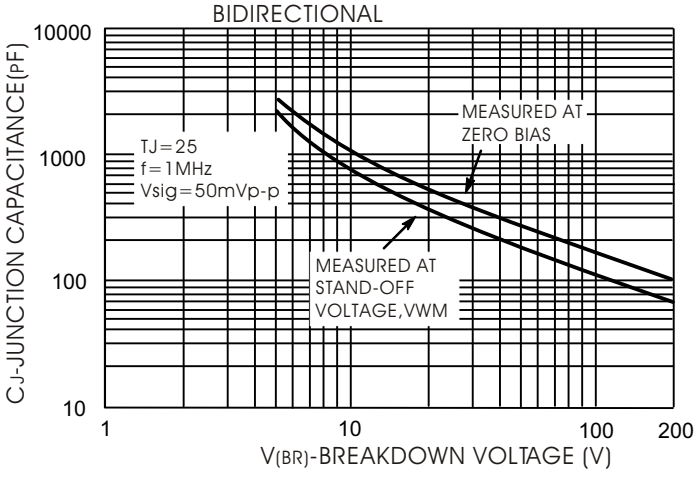
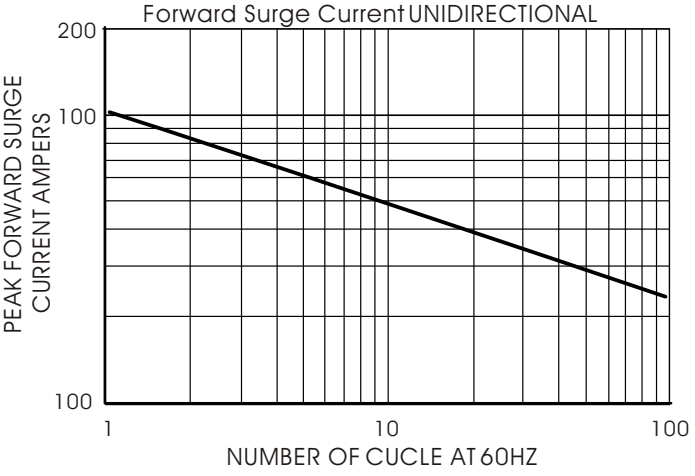


Figure 6.-Maximum Non-Repetitive Peak
Forward Surge Current UNIDIRECTIONAL



RATINGS AND CHARACTERISTIC CURVES P6SMBJ5.0(A)(C)(CA) THRU P6SMBJ170(A)(C)(CA)

TABLE 1

Device Type	Breakdown V_{BR} Voltage at I_T(Voltage)		Test Current I_T	Working Peak Reverse Voltage V_{RWM}	Maximun Reverse Leakage at V_{RWM} I_R(uA)	Maximun Peak Pulse Surge Current I_{PPM}(NOTE5)	Maximmum Clamping Voltage (V_C)atI_{PPM}(NOTE5)	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
P6SMBJ5.0(C)	6.40	7.82	10	5.00	800	62.5	9.60	KD	AD
P6SMBJ5.0A(CA)	6.40	7.07	10	5.00	800	65.2	9.20	KE	AE
P6SMBJ6.0(C)	6.67	8.15	10	6.00	800	52.6	11.4	KF	AF
P6SMBJ6.0A(CA)	6.67	7.37	10	6.00	800	58.3	10.3	KG	AG
P6SMBJ6.5(C)	7.22	8.82	10	6.50	500	48.8	12.3	KH	AH
P6SMBJ6.5A(CA)	7.22	7.98	10	6.50	500	53.6	11.2	KK	AK
P6SMBJ7.0(C)	7.78	9.51	10	7.00	200	45.1	13.3	KL	AL
P6SMBJ7.0A(CA)	7.78	8.60	10	7.00	200	50.0	12.0	KM	AM
P6SMBJ7.5(C)	8.33	10.2	1.0	7.50	100	42.0	14.3	KN	AN
P6SMBJ7.5A(CA)	8.33	9.21	1.0	7.50	100	46.5	12.9	KP	AP
P6SMBJ8.0(C)	8.89	10.9	1.0	8.00	50	40.0	15.0	KQ	AQ
P6SMBJ8.0A(CA)	8.89	9.83	1.0	8.00	50	44.1	13.6	KR	AR
P6SMBJ8.5(C)	9.44	11.5	1.0	8.50	10	37.7	15.9	KS	AS
P6SMBJ8.5(CA)	9.44	10.4	1.0	8.50	10	41.7	14.4	KT	AT
P6SMBJ9.0(C)	10.0	12.2	1.0	9.00	5.0	35.5	16.9	KU	AU
P6SMBJ9.0A(CA)	10.0	11.1	1.0	9.00	5.0	39.0	15.4	KV	AV
P6SMBJ10(C)	11.1	13.6	1.0	10.0	5.0	31.9	18.8	KW	AW
P6SMBJ10A(CA)	11.1	12.3	1.0	10.0	5.0	35.3	17.0	KX	AX
P6SMBJ11(C)	12.2	14.9	1.0	11.0	5.0	29.9	20.1	KY	AY
P6SMBJ11A(CA)	12.2	13.5	1.0	11.0	5.0	33.0	18.2	KZ	AZ
P6SMBJ12(C)	13.3	16.3	1.0	12.0	5.0	27.3	22.0	LD	BD
P6SMBJ12A(CA)	13.3	14.7	1.0	12.0	5.0	30.2	19.9	LE	BE
P6SMBJ13(C)	14.4	17.6	1.0	13.0	5.0	25.2	23.8	LF	BF
P6SMBJ13A(CA)	14.4	15.9	1.0	13.0	5.0	27.9	21.5	LG	BG
P6SMBJ14(C)	15.6	19.1	1.0	14.0	5.0	23.3	25.8	LH	BH
P6SMBJ14A(CA)	15.6	17.2	1.0	14.0	5.0	25.9	23.2	LK	BK
P6SMBJ15(C)	16.7	20.4	1.0	15.0	5.0	22.3	26.9	LL	BL
P6SMBJ15A(CA)	16.7	18.5	1.0	15.0	5.0	24.6	24.4	LM	BM
P6SMBJ16(C)	17.8	21.8	1.0	16.0	5.0	20.8	28.8	LN	BN
P6SMBJ16A(CA)	17.8	19.7	1.0	16.0	5.0	23.1	26.0	LP	BP
P6SMBJ17(C)	18.9	23.1	1.0	17.0	5.0	19.7	30.5	LQ	BQ
P6SMBJ17A(CA)	18.9	20.9	1.0	17.0	5.0	21.7	27.6	LR	BR
P6SMBJ18(C)	20.0	24.4	1.0	18.0	5.0	18.6	32.2	LS	BS
P6SMBJ18A(CA)	20.0	22.1	1.0	18.0	5.0	20.5	29.2	LT	BT
P6SMBJ20(C)	22.2	27.1	1.0	20.0	5.0	16.8	35.8	LU	BU
P6SMBJ20A(CA)	22.2	24.5	1.0	20.0	5.0	18.5	32.4	LV	BV
P6SMBJ22(C)	24.4	29.8	1.0	22.0	5.0	15.2	39.4	LW	BW
P6SMBJ22A(CA)	24.4	26.9	1.0	22.0	5.0	16.9	35.5	LX	BX
P6SMBJ24(C)	26.7	32.6	1.0	24.0	5.0	14.0	43.0	LY	BY
P6SMBJ24A(CA)	26.7	29.5	1.0	24.0	5.0	15.4	38.9	LZ	BZ
P6SMBJ26(C)	28.9	35.3	1.0	26.0	5.0	12.9	46.6	MD	CD
P6SMBJ26A(CA)	28.9	31.9	1.0	26.0	5.0	14.3	42.1	ME	CE

RATINGS AND CHARACTERISTIC CURVES P6SMBJ5.0(A)(C)(CA) THRU P6SMBJ170(A)(C)(CA)

TABLE 2

Device Type	Breakdown V_{BR} Voltage at I_T		Test Current I_T	Working Peak Reverse Voltage V_{RWM}	Maximun Reverse Leakage at V_{RWM} I_R(uA)	Maximun Peak Pulse Current I_{PPM}(NOTE5)	Maximmum Clamping Voltage (V_C)atI_{PPM}(NOTE5)	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
P6SMBJ28(C)	31.1	38.0	1.0	28.0	5.0	12.0	50.0	MF	CF
P6SMBJ28A(CA)	31.1	34.4	1.0	28.0	5.0	13.2	45.4	MG	CG
P6SMBJ30(C)	33.3	40.7	1.0	30.0	5.0	11.2	53.5	MH	CH
P6SMBJ30A(CA)	33.3	36.8	1.0	30.0	5.0	12.4	48.4	MK	CK
P6SMBJ33(C)	36.7	44.9	1.0	33.0	5.0	10.2	59.0	ML	CL
P6SMBJ33A(CA)	36.7	40.6	1.0	33.0	5.0	11.3	53.3	MM	CM
P6SMBJ36(C)	40.0	48.9	1.0	36.0	5.0	9.3	64.3	MN	CN
P6SMBJ36A(CA)	40.0	44.2	1.0	36.0	5.0	10.3	58.1	MP	CP
P6SMBJ40(C)	44.4	54.3	1.0	40.0	5.0	8.4	71.4	MQ	CQ
P6SMBJ40A(CA)	44.4	49.1	1.0	40.0	5.0	9.3	64.5	MR	CR
P6SMBJ43(C)	47.8	58.4	1.0	43.0	5.0	7.8	76.7	MS	CS
P6SMBJ43A(CA)	47.8	52.8	1.0	43.0	5.0	8.6	69.4	MT	CT
P6SMBJ45(C)	50.0	61.1	1.0	45.0	5.0	7.5	80.3	MU	CU
P6SMBJ45(CA)	50.0	55.3	1.0	45.0	5.0	8.3	72.7	MV	CV
P6SMBJ48(C)	53.3	65.1	1.0	48.0	5.0	7.0	85.5	MW	CW
P6SMBJ48A(CA)	53.3	58.9	1.0	48.0	5.0	7.8	77.4	MX	CX
P6SMBJ51(C)	56.7	69.3	1.0	51.0	5.0	6.6	91.1	MY	CY
P6SMBJ51A(CA)	56.7	62.7	1.0	51.0	5.0	7.3	82.4	MZ	CZ
P6SMBJ54(C)	60.0	73.3	1.0	54.0	5.0	6.2	96.3	ND	DD
P6SMBJ54A(CA)	60.0	66.3	1.0	54.0	5.0	6.9	87.1	NE	DE
P6SMBJ58(C)	64.4	78.7	1.0	58.0	5.0	5.8	103	NF	DF
P6SMBJ58A(CA)	64.4	71.2	1.0	58.0	5.0	6.4	93.6	NG	DG
P6SMBJ60(C)	66.7	81.5	1.0	60.0	5.0	5.6	107	NH	DH
P6SMBJ60A(CA)	66.7	73.7	1.0	60.0	5.0	6.2	96.8	NK	DK
P6SMBJ64(C)	71.1	86.9	1.0	64.0	5.0	5.3	114	NL	DL
P6SMBJ64A(CA)	71.1	78.6	1.0	64.0	5.0	5.8	103	NM	DM
P6SMBJ70(C)	77.8	95.1	1.0	70.0	5.0	4.8	125	NN	DN
P6SMBJ70A(CA)	77.8	86.0	1.0	70.0	5.0	5.3	113	NP	DP
P6SMBJ75(C)	83.3	102	1.0	75.0	5.0	4.5	134	NQ	DQ
P6SMBJ75A(CA)	83.3	92.1	1.0	75.0	5.0	5.0	121	NR	DR
P6SMBJ78(C)	86.7	106	1.0	78.0	5.0	4.3	139	NS	DS
P6SMBJ78A(CA)	86.7	95.8	1.0	78.0	5.0	4.8	126	NT	DT
P6SMBJ85(C)	94.4	115	1.0	85.0	5.0	4.0	151	NU	DU
P6SMBJ85A(CA)	94.4	104	1.0	85.0	5.0	4.4	137	NV	DV
P6SMBJ90(C)	100	122	1.0	90.0	5.0	3.8	160	NW	DW
P6SMBJ90A(CA)	100	111	1.0	90.0	5.0	4.1	146	NX	DX
P6SMBJ100(C)	111	136	1.0	100	5.0	3.4	179	NY	DY
P6SMBJ100A(CA)	111	123	1.0	100	5.0	3.7	162	NZ	DZ
P6SMBJ110(C)	122	149	1.0	110	5.0	3.1	196	PD	ED
P6SMBJ110A(CA)	122	135	1.0	110	5.0	3.4	177	PE	EE
P6SMBJ120(C)	133	163	1.0	120	5.0	2.8	214	PF	EF
P6SMBJ120A(CA)	133	147	1.0	120	5.0	3.1	193	PG	EG

TABLE 2

Device Type	Breakdown V_{BR} Voltage at I_T(Voltage)		Test Current I_T	Working Peak Reverse Voltage V_{RWM}	Maximun Reverse Leakage at V_{RWM} I_R(uA)	Maximun Peak Pulse Current I_{PPM}(NOTE5)	Maximmum Clamping Voltage (V_C)atI_{PPM}(NOTE5)	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
P6SMBJ130(C)	144	176	1.0	130.0	5.0	2.6	231.0	PH	EH
P6SMBJ130A(CA)	144	159	1.0	130.0	5.0	2.9	209.0	PK	EK
P6SMBJ150(C)	167	204	1.0	150.0	5.0	2.2	268.0	PL	EL
P6SMBJ150A(CA)	167	185	1.0	150.0	5.0	2.5	243.0	PM	EM
P6SMBJ160(C)	178	218	1.0	160.0	5.0	2.1	287.0	PN	EN
P6SMBJ160A(CA)	178	197	1.0	160.0	5.0	2.3	259.0	PP	EP
P6SMBJ170(C)	189	231	1.0	170.0	5.0	2.0	304.0	PQ	EQ
P6SMBJ170A(CA)	189	209	1.0	170.0	5.0	2.2	275.0	PR	ER