SMBJ5.0A(CA) THRU SMBJ440A(CA)

VOLTAGE - 5.0 TO 440 VOLTS 600 WATT PEAK POWER

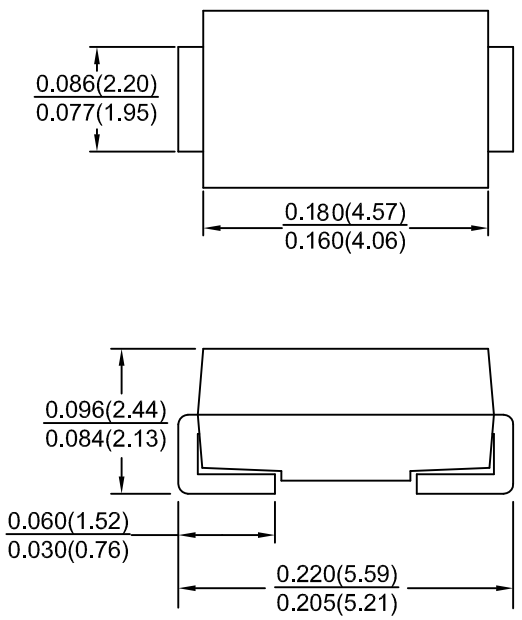
FEATURES:

- Low profile package
- For surface mounted application inorder to optimize board space
- Bulit-in strainrelief
- Glass passivated junction
- Excellent clamping capability
- Repetition rate (duty cycle) : 0.01%
- Fast response time : typically less thatn 1.0 ps from 0 volts to V(br) for unidirectional types
- Hgh temperature soldering guaranteed : 250℃ /10 seconds at terminal
- Typical IR less than 1uA ABOVE 10V U
- Plastic package has Underwriters Laboratory Flammability 94V-0

MECHANICAL DATA

Case:JEDEC DO-214AA, Molded plastic over glass passivated
Terminals: Solder plated, Solderable per MIL-STD-705, Method 2026
Polarity: Color band denots positive end(cathode) except Bidirectional
Weight: 0.093 grams

SMB/DO-214AA



Suffix " ","A"
UNDIRECTIONAL

Suffix "C","CA"
DIRECTIONAL

Dimensions in inches and (millimeters)

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 (note1～2,fig.1)	P_{PK}	600	W
Maximum peak pulse current of on 10/1000us wavefrom (note1,fig3)	I_{PPM}	SEE TABLE1～2	Amps
Maximum forward Surge current, 8.3ms Single Hlaf Sine-Wave Supermposed on rated load Unidirectional only (Note2～ 3)	I_{FSM}	100	Amps
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

Figure 1.-Pulse Rating Cure

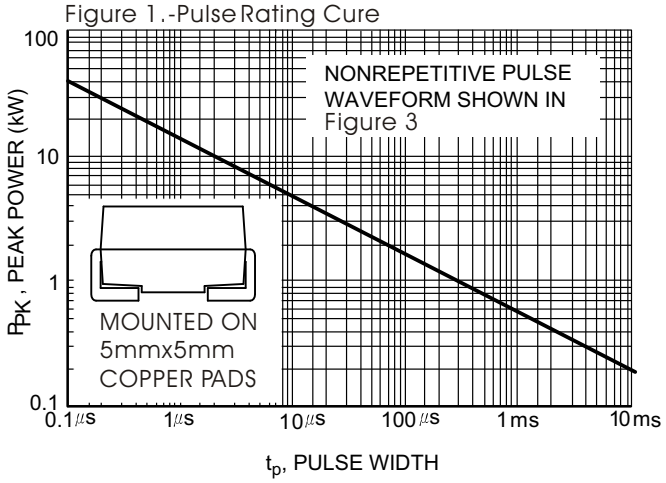


Figure 2.-Pulse Derating Curve

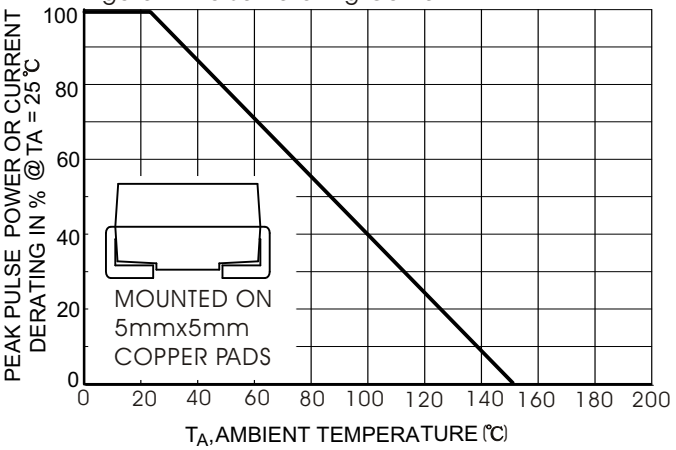


Figure 3.-Pulse Waveform

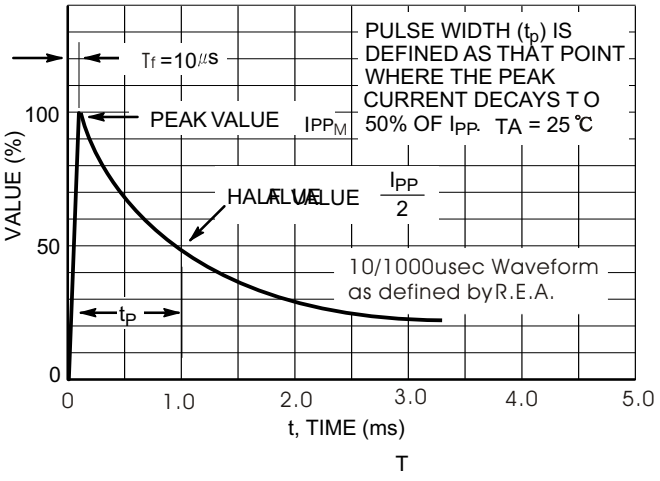


Figure 4.-TYPICAL JUNCTION CAPACITANCE
UNIDIRECTIONAL

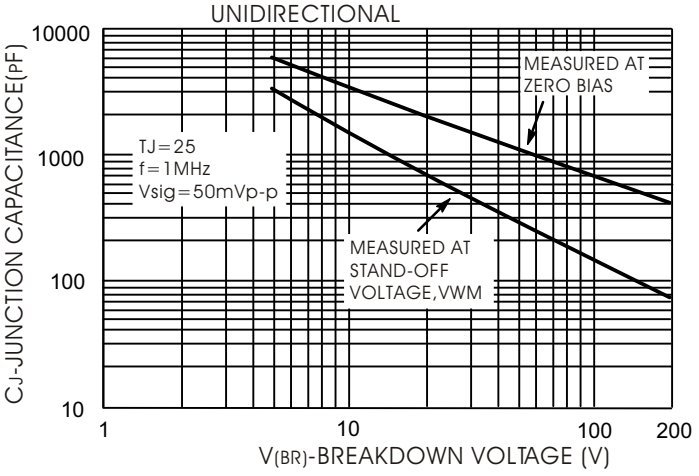


Figure 5.-TYPICAL JUNCTION CAPACITANCE
BIDIRECTIONAL

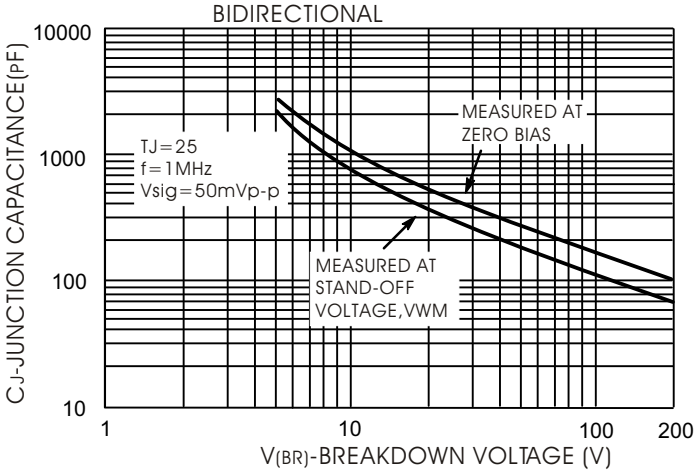
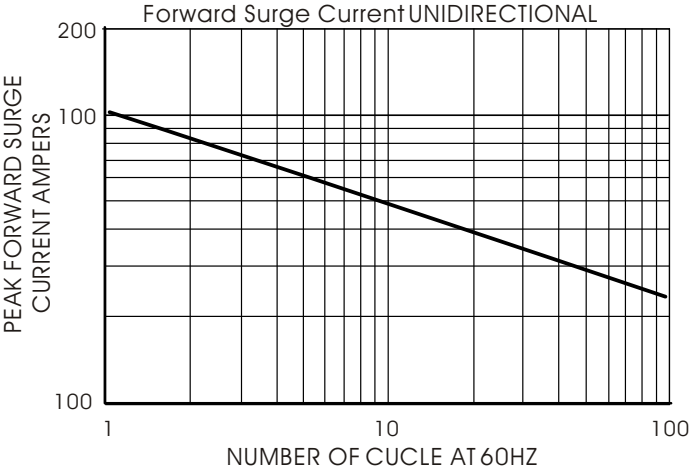


Figure 6.-Maximum Non-Repetitive Peak
Forward Surge Current UNIDIRECTIONAL



RATINGS AND CHARACTERISTIC CURVES SMBJ5.0A(CA) THRU SMBJ440A(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(mA)	Maximun Peak Pulse Surge Current I_{PPM}	Maximmum Clamping Voltage (V_C) atI_{PPM}	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
SMBJ5.0A(CA)	6.40	7.00	10	5.00	800	65.2	9.20	KE	AE
SMBJ6.0A(CA)	6.67	7.37	10	6.00	800	58.3	10.3	KG	AG
SMBJ6.5A(CA)	7.22	7.98	10	6.50	500	53.6	11.2	KK	AK
SMBJ7.0A(CA)	7.78	8.60	10	7.00	200	50.0	12.0	KM	AM
SMBJ7.5A(CA)	8.33	9.21	1.0	7.50	100	46.5	12.9	KP	AP
SMBJ8.0A(CA)	8.89	9.83	1.0	8.00	50	44.1	13.6	KR	AR
SMBJ8.5(CA)	9.44	10.4	1.0	8.50	10	41.7	14.4	KT	AT
SMBJ9.0A(CA)	10.0	11.1	1.0	9.00	5.0	39.0	15.4	KV	AV
SMBJ10A(CA)	11.1	12.3	1.0	10.0	5.0	35.3	17.0	KX	AX
SMBJ11A(CA)	12.2	13.5	1.0	11.0	5.0	33.0	18.2	KZ	AZ
SMBJ12A(CA)	13.3	14.7	1.0	12.0	5.0	30.2	19.9	LE	BE
SMBJ13A(CA)	14.4	15.9	1.0	13.0	5.0	28.0	21.5	LG	BG
SMBJ14A(CA)	15.6	17.2	1.0	14.0	5.0	25.9	23.2	LK	BK
SMBJ15A(CA)	16.7	18.5	1.0	15.0	5.0	24.6	24.4	LM	BM
SMBJ16A(CA)	17.8	19.7	1.0	16.0	5.0	23.1	26.0	LP	BP
SMBJ17A(CA)	18.9	20.9	1.0	17.0	5.0	21.8	27.6	LR	BR
SMBJ18A(CA)	20.0	22.1	1.0	18.0	5.0	20.6	29.2	LT	BT
SMBJ20A(CA)	22.2	24.5	1.0	20.0	5.0	18.6	32.4	LV	BV
SMBJ22A(CA)	24.4	26.9	1.0	22.0	5.0	16.9	35.5	LX	BX
SMBJ24A(CA)	26.7	29.5	1.0	24.0	5.0	15.5	38.9	LZ	BZ
SMBJ26A(CA)	28.9	31.9	1.0	26.0	5.0	14.3	42.1	ME	CE
SMBJ28A(CA)	31.1	34.4	1.0	28.0	5.0	13.3	45.4	MG	CG
SMBJ30A(CA)	33.3	36.8	1.0	30.0	5.0	12.4	48.4	MK	CK
SMBJ33A(CA)	36.7	40.6	1.0	33.0	5.0	11.3	53.3	MM	CM
SMBJ36A(CA)	40.0	44.2	1.0	36.0	5.0	10.3	58.1	MP	CP
SMBJ40A(CA)	44.4	49.1	1.0	40.0	5.0	9.3	64.5	MR	CR
SMBJ43A(CA)	47.8	52.8	1.0	43.0	5.0	8.6	69.4	MT	CT
SMBJ45(CA)	50.0	55.3	1.0	45.0	5.0	8.3	72.7	MV	CV
SMBJ48A(CA)	53.3	58.9	1.0	48.0	5.0	7.8	77.4	MX	CX
SMBJ51A(CA)	56.7	62.7	1.0	51.0	5.0	7.3	82.4	MZ	CZ
SMBJ54A(CA)	60.0	66.3	1.0	54.0	5.0	6.9	87.1	NE	DE
SMBJ58A(CA)	64.4	71.2	1.0	58.0	5.0	6.5	93.6	NG	DG
SMBJ60A(CA)	66.7	73.7	1.0	60.0	5.0	6.2	96.8	NK	DK
SMBJ64A(CA)	71.1	78.6	1.0	64.0	5.0	5.9	103	NM	DM
SMBJ70A(CA)	77.8	86.0	1.0	70.0	5.0	5.3	113	NP	DP
SMBJ75A(CA)	83.3	92.1	1.0	75.0	5.0	5.0	121	NR	DR
SMBJ78A(CA)	86.7	95.8	1.0	78.0	5.0	4.8	126	NT	DT
SMBJ85A(CA)	94.4	104	1.0	85.0	5.0	4.4	137	NV	DV
SMBJ90A(CA)	100	111	1.0	90.0	5.0	4.1	146	NX	DX
SMBJ100A(CA)	111	123	1.0	100	5.0	3.7	162	NZ	DZ
SMBJ110A(CA)	122	135	1.0	110	5.0	3.4	177	PE	EE
SMBJ120A(CA)	133	147	1.0	120	5.0	3.1	193	PG	EG

For bidirectional type having Vrwm of 10 Volts and less. The IR limit is double.
For parts without A, the VBR is +/- 10%

RATINGS AND CHARACTERISTIC CURVES SMBJ5.0A(CA) THRU SMBJ440A(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(mA)	Maximun Peak Pulse Current I_{PPM}	Maximmum Clamping Voltage (V_C) atI_{PPM}	Device Marking code	
	Min	Max	mA	Volts	μA	Amps	Volts	UNI	BI
SMBJ130A(CA)	144	159	1.0	130.0	5.0	2.9	209.0	PK	EK
SMBJ150A(CA)	167	185	1.0	150.0	5.0	2.5	243.0	PM	EM
SMBJ160A(CA)	178	197	1.0	160.0	5.0	2.3	259.0	PP	EP
SMBJ170A(CA)	189	209	1.0	170.0	5.0	2.2	275.0	PR	ER
SMBJ180A(CA)	201	222	1.0	180.0	5.0	2.1	292.0	PT	ET
SMBJ200A(CA)	224	247	1.0	200.0	5.0	1.9	324.0	PV	EV
SMBJ220A(CA)	246	272	1.0	220.0	5.0	1.7	356.0	PX	EX
SMBJ250A(CA)	279	309	1.0	250.0	5.0	1.5	405.0	PZ	EZ
SMBJ300A(CA)	335	371	1.0	300.0	5.0	1.3	486.0	QE	FE
SMBJ350A(CA)	391	432	1.0	350.0	5.0	1.1	567.0	QG	FG
SMBJ400A(CA)	447	494	1.0	400.0	5.0	0.9	648.0	QK	FK
SMBJ440A(CA)	492	543	1.0	440.0	5.0	0.9	713.0	QM	FM

For bidirectional type having Vrwm of 10 Volts and less. The IR limit is double.
For parts without A, the VBR is +/- 10%