

RoHS Compliant Product

A suffix of "-C" specifies halogen-free and lead-free

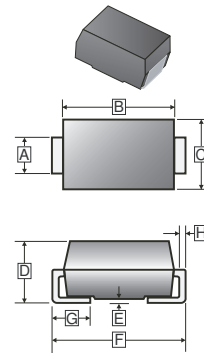
## FEATURES

- For surface mount application
- Glass passivated chip
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- Typical  $I_R$  less than 1mA above 10V
- High temperature soldering guaranteed:  
260°C / 10 seconds at terminals

## MECHANICAL DATA

- Case: Molded Plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solder-able per MIL-STD-750,  
Method 2026 Guaranteed
- Polarity: Color band denotes cathode end except bidirectional
- Mounting position: Any

**SMB**



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.91	2.11	E	-	0.203
B	4.06	4.7	F	5.08	5.59
C	3.3	3.94	G	0.76	1.27
D	2.13	2.44	H	0.15	0.31

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SMB	3K	13 inch

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

Rating	Symbol	Value	Unit
Minimum Peak Power Dissipation@ 10ms waveform <sup>1</sup>	$P_{PK}$	600	W
Minimum Peak Pulsed Current@ 10ms waveform <sup>1</sup>	$I_{PP}$	(See next table.)	A
Power Dissipation@ on an infinite heatsink at $T_L=75^\circ\text{C}$	$P_D$	5	W
Peak Forward Surge Current@ 8.3ms single half sine-wave for unidirectional only <sup>2</sup>	$I_{FSM}$	100	A
Maximum Instantaneous Forward Voltage@ 50A for unidirectional only <sup>3</sup>	$V_F$	3.5/ 5	V
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 ~ 150	°C

Notes:

1. Non-repetitive current pulse on Fig. 5 and it derates above  $T_A=25^\circ\text{C}$  on Fig. 1.
2. 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
3.  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

**ELECTRICAL CHARACTERISTICS** (Rating  $T_A=25^\circ\text{C}$  unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$		Test Current	Maximum Clamping Voltage $V_C$ @ $I_{PP}$	Peak Pulse Current	Reverse Leakage $I_R$ @ $V_{RWM}$
			Min	Max				
Directional		$V_{RWM}$	$V_{BR}$		$I_T$	$V_C$	$I_{PP}$	$I_R$
Uni	Bi	V	V	V	mA	V	A	$\mu\text{A}$
SMBJ5.0A	SMBJ5.0CA	5	6.4	7	10	9.2	65.22	800
SMBJ6.0A	SMBJ6.0CA	6	6.67	7.37	10	10.3	58.25	800
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	11.2	53.57	500
SMBJ7.0A	SMBJ7.0CA	7	7.78	8.6	10	12.0	50	200
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	12.9	46.51	100
SMBJ8.0A	SMBJ8.0CA	8	8.89	9.83	1	13.6	44.12	50
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.4	1	14.4	41.67	10
SMBJ9.0A	SMBJ9.0CA	9	10.0	11.1	1	15.4	38.96	5
SMBJ10A	SMBJ10CA	10	11.1	12.3	1	17.0	35.29	5
SMBJ11A	SMBJ11CA	11	12.2	13.5	1	18.2	32.97	5
SMBJ12A	SMBJ12CA	12	13.3	14.7	1	19.9	30.15	5
SMBJ13A	SMBJ13CA	13	14.4	15.9	1	21.5	27.91	5
SMBJ14A	SMBJ14CA	14	15.6	17.2	1	23.2	25.86	5
SMBJ15A	SMBJ15CA	15	16.7	18.5	1	24.4	24.59	5
SMBJ16A	SMBJ16CA	16	17.8	19.7	1	26.0	23.08	5
SMBJ17A	SMBJ17CA	17	18.9	20.9	1	27.6	21.74	5
SMBJ18A	SMBJ18CA	18	20	22.1	1	29.2	20.55	5
SMBJ19A	SMBJ19CA	19	21.1	23.3	1	30.8	19.49	5
SMBJ20A	SMBJ20CA	20	22.2	24.5	1	32.4	18.52	5
SMBJ22A	SMBJ22CA	22	24.4	26.9	1	35.5	16.9	5
SMBJ24A	SMBJ24CA	24	26.7	29.5	1	38.9	15.42	5
SMBJ26A	SMBJ26CA	26	28.9	31.9	1	42.1	14.25	5
SMBJ28A	SMBJ28CA	28	31.1	34.4	1	45.4	13.22	5
SMBJ30A	SMBJ30CA	30	33.3	36.8	1	48.4	12.4	5
SMBJ33A	SMBJ33CA	33	36.7	40.6	1	53.3	11.26	5
SMBJ36A	SMBJ36CA	36	40.0	44.2	1	58.1	10.33	5
SMBJ40A	SMBJ40CA	40	44.4	49.1	1	64.5	9.3	5
SMBJ43A	SMBJ43CA	43	47.8	52.8	1	69.4	8.65	5
SMBJ45A	SMBJ45CA	45	50.0	55.3	1	72.7	8.25	5
SMBJ48A	SMBJ48CA	48	53.3	58.9	1	77.4	7.75	5
SMBJ51A	SMBJ51CA	51	56.7	62.7	1	82.4	7.28	5

**ELECTRICAL CHARACTERISTICS** (Rating  $T_A=25^\circ\text{C}$  unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$		Test Current	Maximum Clamping Voltage $V_C$ @ $I_{PP}$	Peak Pulse Current	Reverse Leakage $I_R$ @ $V_{RWM}$
			Min	Max				
Directional		$V_{RWM}$	$V_{BR}$		$I_T$	$V_C$	$I_{PP}$	$I_R$
Uni	Bi	V	V	V	mA	V	A	$\mu\text{A}$
SMBJ54A	SMBJ54CA	54	60.0	66.3	1	87.1	6.89	5
SMBJ58A	SMBJ58CA	58	64.4	71.2	1	93.6	6.41	5
SMBJ60A	SMBJ60CA	60	66.7	73.7	1	96.8	6.2	5
SMBJ64A	SMBJ64CA	64	71.1	78.6	1	103	5.83	5
SMBJ70A	SMBJ70CA	70	77.8	86	1	113	5.31	5
SMBJ75A	SMBJ75CA	75	83.3	92.1	1	121	4.96	5
SMBJ78A	SMBJ78CA	78	86.7	95.8	1	126	4.76	5
SMBJ80A	SMBJ80CA	80	88.8	97.6	1	129.6	4.63	5
SMBJ85A	SMBJ85CA	85	94.4	104	1	137	4.38	5
SMBJ90A	SMBJ90CA	90	100	111	1	146	4.11	5
SMBJ100A	SMBJ100CA	100	111	123	1	162	3.7	5
SMBJ110A	SMBJ110CA	110	122	135	1	177	3.39	5
SMBJ120A	SMBJ120CA	120	133	147	1	193	3.11	5
SMBJ130A	SMBJ130CA	130	144	159	1	209	2.87	5
SMBJ140A	SMBJ130CA	140	155	171	1	226.8	2.65	5
SMBJ150A	SMBJ150CA	150	167	185	1	243	2.47	5
SMBJ160A	SMBJ160CA	160	178	197	1	259	2.32	5
SMBJ170A	SMBJ170CA	170	189	209	1	275	2.18	5
SMBJ180A	SMBJ180CA	180	200	220	1	291.6	2.06	5
SMBJ190A	SMBJ190CA	190	211	232	1	307.8	1.95	5
SMBJ200A	SMBJ200CA	200	224	247	1	324	1.9	5
SMBJ220A	SMBJ220CA	220	246	272	1	356	1.69	5
SMBJ250A	SMBJ250CA	250	279	309	1	405	1.5	5
SMBJ300A	SMBJ300CA	300	335	371	1	486	1.23	5
SMBJ350A	SMBJ350CA	350	391	432	1	567	1.06	5
SMBJ400A	SMBJ400CA	400	447	494	1	648	0.9	5
SMBJ440A	SMBJ440CA	440	492	543	1	713	0.84	5

Notes:

1. Suffix 'A' denotes 5% tolerance device.
2. For Bidirectional devices, CA suffix is used for the types from SMBJ5.0CA to SMBJ440CA.
3. Electrical Characteristics are applied in both directions.
4. For Bi-directional devices which have 10V and under 10V volts, the  $I_R$  limit is double.

**RATINGS AND CHARACTERISTIC CURVES**

Fig. 1 - Pulse Derating Curve

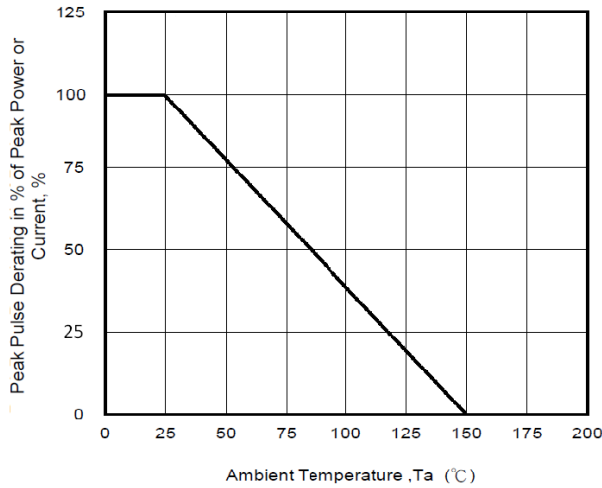


Fig. 3 - Steady State Power Derating Curve

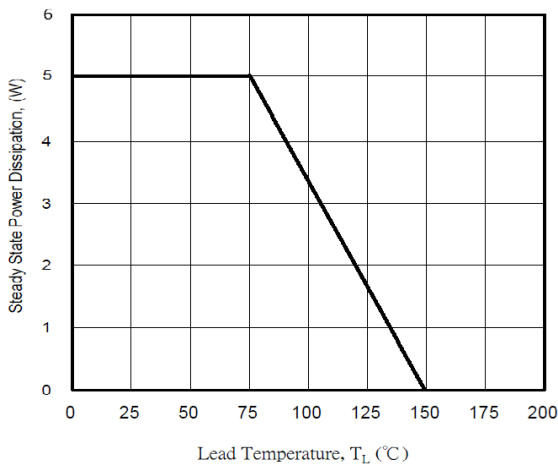


Fig. 5 - Pulse Waveform

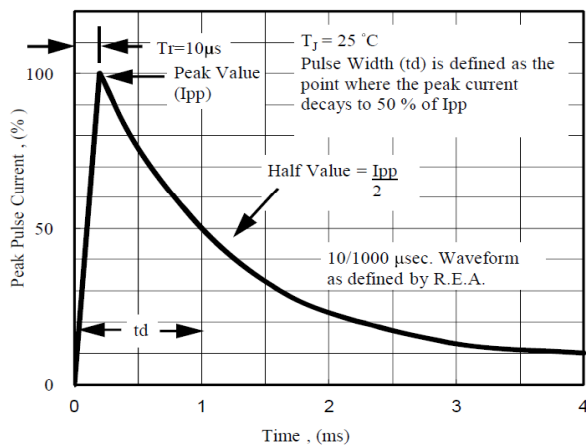


Fig. 2 - Maximum Non-Repetitive Surge Current

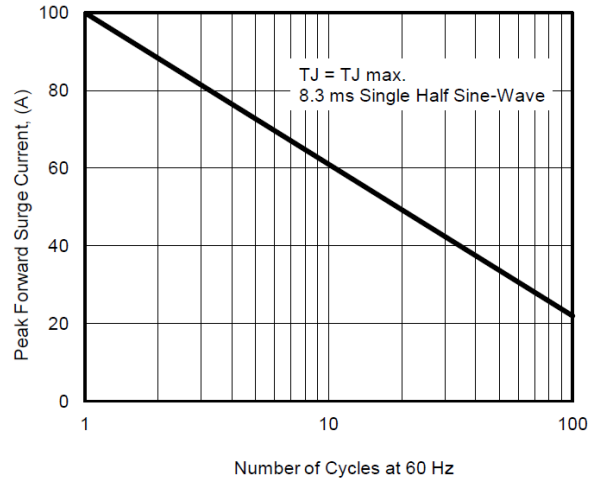


Fig. 4 - Peak Pulse Power Rating Curve

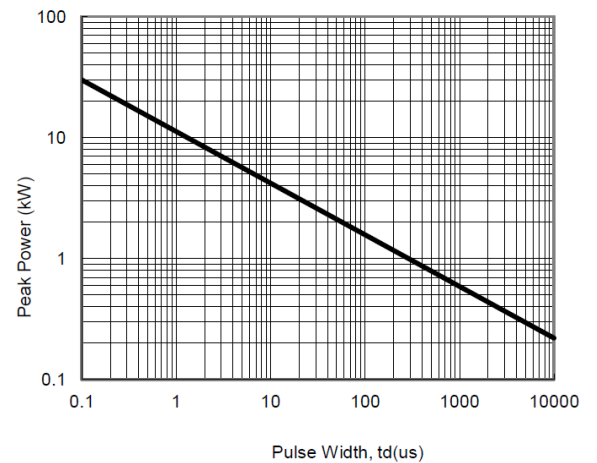


Fig. 6 - Typical Junction Capacitance

