

RoHS Compliant Product

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

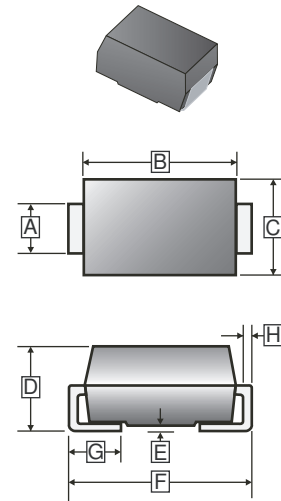
### FEATURES

- For surface mount application
- Glass passivated chip
- 1000W peak pulse power capability with a 10/1000us Waveform, repetitive rate (duty cycle): 0.01%
- Excellent clamping capability
- Fast response time
- Low leakage
- High temperature soldering guaranteed

### 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**



### PACKAGE INFORMATION

Package	MPQ	Leader Size
SMB	3K	13 inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.85	2.20	E	-	0.25
B	4.00	4.85	F	5.07	5.59
C	3.25	3.94	G	0.75	1.52
D	1.99	2.61	H	0.15	0.31

### ORDER INFORMATION

Part Number	Type
SMB10J Series-C	Lead (Pb)-free and Halogen-free

### 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%.)

Parameter	Symbol	Ratings	Unit
Peak Power Dissipation @10/1000us waveform <sup>1</sup>	P <sub>PP</sub>	1000	W
Peak Pulsed Current @10/1000us waveform <sup>1</sup>	I <sub>PP</sub>	(See next table.)	A
Power Dissipation on infinite heatsink @T <sub>L</sub> =75°C	P <sub>D</sub>	5	W
Peak Forward Surge Current @8.3ms single half sine-wave for unidirectional only <sup>2</sup>	I <sub>FSM</sub>	100	A
Maximum Instantaneous Forward Voltage @25A for unidirectional only <sup>3</sup>	V <sub>F</sub>	3.5/5	V
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 ~ 150	°C

Notes:

1. Non-repetitive current pulse on Fig. 5 and it derated above T<sub>A</sub>=25°C on Fig. 1.
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
3. V<sub>F</sub><3.5V for devices of V<sub>BR</sub><50V.

**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 $V_C$ @ $I_{PP}$	Maximum Reverse Surge Current	Maximum 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	$\mu\text{A}$
SMB10J5.0A-C	SMB10J5.0CA-C	5	6.4	7	10	9.2	108.7	800
SMB10J6.0A-C	SMB10J6.0CA-C	6	6.67	7.37	10	10.3	97.09	800
SMB10J6.5A-C	SMB10J6.5CA-C	6.5	7.22	7.98	10	11.2	89.29	500
SMB10J7.0A-C	SMB10J7.0CA-C	7	7.78	8.6	10	12	83.33	200
SMB10J7.5A-C	SMB10J7.5CA-C	7.5	8.33	9.21	1	12.9	77.52	100
SMB10J8.0A-C	SMB10J8.0CA-C	8	8.89	9.83	1	13.6	73.53	50
SMB10J8.5A-C	SMB10J8.5CA-C	8.5	9.44	10.4	1	14.4	69.44	10
SMB10J9.0A-C	SMB10J9.0CA-C	9	10	11.1	1	15.4	64.94	5
SMB10J10A-C	SMB10J10CA-C	10	11.1	12.3	1	17	58.82	5
SMB10J11A-C	SMB10J11CA-C	11	12.2	13.5	1	18.2	54.95	5
SMB10J12A-C	SMB10J12CA-C	12	13.3	14.7	1	19.9	50.25	5
SMB10J13A-C	SMB10J13CA-C	13	14.4	15.9	1	21.5	46.51	1
SMB10J14A-C	SMB10J14CA-C	14	15.6	17.2	1	23.2	43.1	1
SMB10J15A-C	SMB10J15CA-C	15	16.7	18.5	1	24.4	40.98	1
SMB10J16A-C	SMB10J16CA-C	16	17.8	19.7	1	26	38.46	1
SMB10J17A-C	SMB10J17CA-C	17	18.9	20.9	1	27.6	36.23	1
SMB10J18A-C	SMB10J18CA-C	18	20	22.1	1	29.2	34.25	1
SMB10J19A-C	SMB10J19CA-C	19	21.1	23.3	1	30.8	32.49	1
SMB10J20A-C	SMB10J20CA-C	20	22.2	24.5	1	32.4	30.86	1
SMB10J22A-C	SMB10J22CA-C	22	24.4	26.9	1	35.5	28.17	1
SMB10J24A-C	SMB10J24CA-C	24	26.7	29.5	1	38.9	25.71	1
SMB10J26A-C	SMB10J26CA-C	26	28.9	31.9	1	42.1	23.75	1
SMB10J28A-C	SMB10J28CA-C	28	31.1	34.4	1	45.4	22.03	1
SMB10J30A-C	SMB10J30CA-C	30	33.3	36.8	1	48.4	20.66	1
SMB10J33A-C	SMB10J33CA-C	33	36.7	40.6	1	53.3	18.76	1
SMB10J36A-C	SMB10J36CA-C	36	40	44.2	1	58.1	17.21	1
SMB10J40A-C	SMB10J40CA-C	40	44.4	49.1	1	64.5	15.5	1
SMB10J43A-C	SMB10J43CA-C	43	47.8	52.8	1	69.4	14.41	1
SMB10J45A-C	SMB10J45CA-C	45	50	55.3	1	72.7	13.76	1
SMB10J48A-C	SMB10J48CA-C	48	53.3	58.9	1	77.4	12.92	1
SMB10J51A-C	SMB10J51CA-C	51	56.7	62.7	1	82.4	12.14	1

**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 $V_C$ @ $I_{PP}$	Maximum Reverse Surge 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	$\mu\text{A}$
SMB10J54A-C	SMB10J54CA-C	54	60	66.3	1	87.1	11.48	1
SMB10J58A-C	SMB10J58CA-C	58	64.4	71.2	1	93.6	10.68	1
SMB10J60A-C	SMB10J60CA-C	60	66.7	73.7	1	96.8	10.33	1
SMB10J64A-C	SMB10J64CA-C	64	71.1	78.6	1	103	9.71	1
SMB10J70A-C	SMB10J70CA-C	70	77.8	86	1	113	8.85	1
SMB10J75A-C	SMB10J75CA-C	75	83.3	92.1	1	121	8.26	1
SMB10J78A-C	SMB10J78CA-C	78	86.7	95.8	1	126	7.94	1
SMB10J80A-C	SMB10J80CA-C	80	88.8	97.6	1	129.6	7.72	1
SMB10J85A-C	SMB10J85CA-C	85	94.4	104	1	137	7.3	1
SMB10J90A-C	SMB10J90CA-C	90	100	111	1	146	6.85	1
SMB10J100A-C	SMB10J100CA-C	100	111	123	1	162	6.17	1
SMB10J110A-C	SMB10J110CA-C	110	122	135	1	177	5.65	1
SMB10J120A-C	SMB10J120CA-C	120	133	147	1	193	5.18	1

Notes:

- Suffix 'A' denotes 5% tolerance device.
- For Bi-directional devices, CA suffix is used for the types from SMB10J5.0CA-C to SMB10J120CA-C.
- For Bi-directional devices having VR of 10V and under, the  $I_R$  limit is double.

**RATINGS AND CHARACTERISTIC CURVES**

Fig. 1 - Pulse Derating Curve

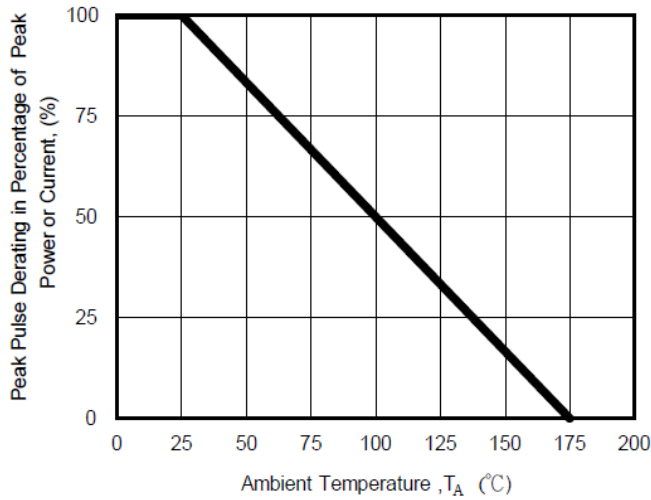


Fig. 2 - Maximum Non-Repetitive Surge Current

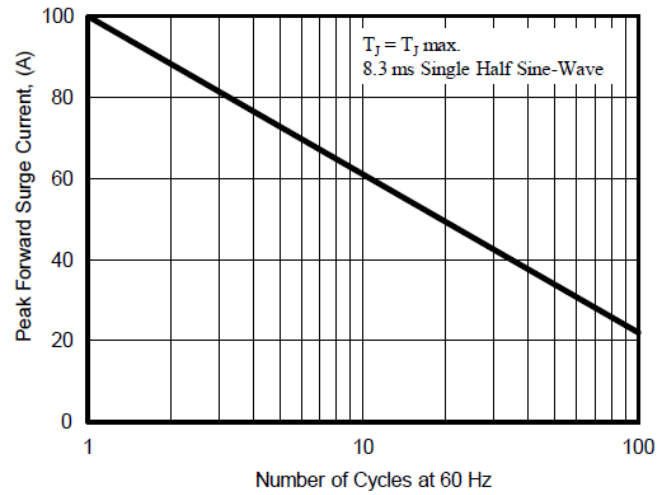


Fig. 3 - Steady State Power Derating Curve

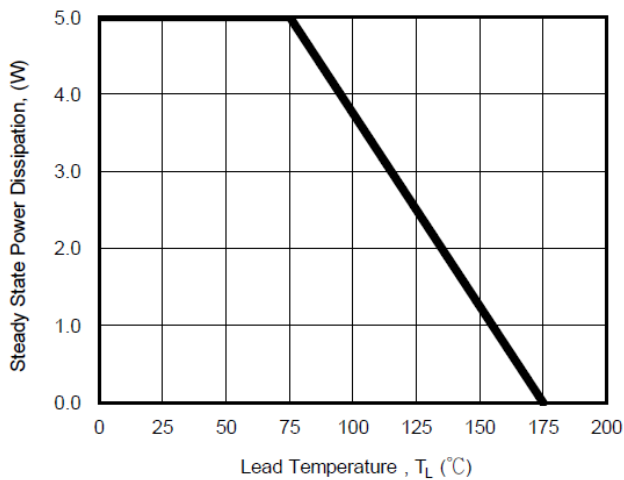


Fig. 4 - Peak Pulse Power Rating Curve

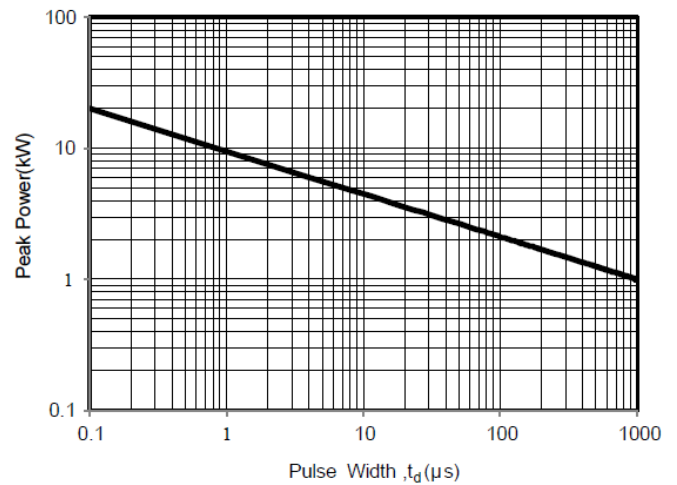


Fig. 5 - Pulse Waveform

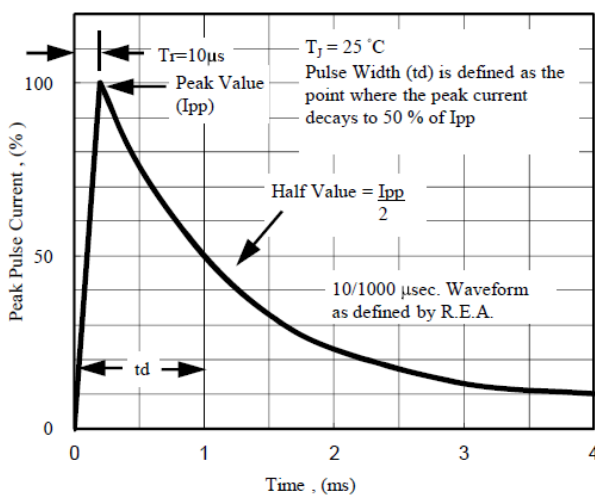


Fig. 6 - Typical Junction Capacitance

