

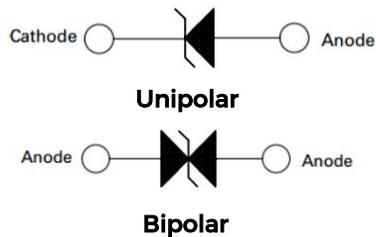
## SMBJ SERIES SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 600W Peak Pulse Power Dissipation
- 5.0V- 200V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- “-A” is an AEC-Q101 qualified device
- RoHS Compliant
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



### Mechanical Data

- Case: SMB Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight:0.093 grams(approx.)

### Maximum Ratings and Thermal Characteristics@ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ by 10x1000 $\mu\text{s}$ Waveform (Fig.1)(Note 1), (Note 2)	$P_{PPM}$	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2),(Note 3)	$I_{FSM}$	100	A
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	$^{\circ}\text{C}/\text{W}$
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to 150	$^{\circ}\text{C}$

- 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> (0.013mm thick) land areas.
  3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

Technical Data  
Data Sheet N0193, Rev. D

*Automotive Qualified*

**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(M A)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(μA)
		UNI	BI							
SMBJ5.0A	SMBJ5.0CA	KE	AE	5	6.4	7	10	9.2	65.3	800
SMBJ6.0A	SMBJ6.0CA	KG	AC	6	6.67	7.37	10	10.3	58.3	800
SMBJ6.5A	SMBJ6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7.0A	SMBJ7.0CA	KM	AM	7	7.78	8.6	10	12	50	200
SMBJ7.5A	SMBJ7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	46.6	100
SMBJ8.0A	SMBJ8.0CA	KR	AR	8	8.89	9.83	1	13.6	44.2	50
SMBJ8.5A	SMBJ8.5CA	KT	AT	8.5	9.44	10.4	1	14.4	41.7	20
SMBJ9.0A	SMBJ9.0CA	KV	AV	9	10	11.1	1	15.4	39	10
SMBJ10A	SMBJ10CA	KX	AX	10	11.1	12.3	1	17	35.3	5
SMBJ11A	SMBJ11CA	KZ	AZ	11	12.2	13.5	1	18.2	33	5
SMBJ12A	SMBJ12CA	LE	BE	12	13.3	14.7	1	19.9	30.2	5
SMBJ13A	SMBJ13CA	LG	BC	13	14.4	15.9	1	21.5	28	5
SMBJ14A	SMBJ14CA	LK	BK	14	15.6	17.2	1	23.2	25.9	5
SMBJ15A	SMBJ15CA	LM	BM	15	16.7	18.5	1	24.4	24.6	5
SMBJ16A	SMBJ16CA	LP	BP	16	17.8	19.7	1	26	23.1	5
SMBJ17A	SMBJ17CA	LR	BR	17	18.9	20.9	1	27.6	21.8	5
SMBJ18A	SMBJ18CA	LT	BT	18	20	22.1	1	29.2	20.6	5
SMBJ20A	SMBJ20CA	LV	BV	20	22.2	24.5	1	32.4	18.6	5
SMBJ22A	SMBJ22CA	LX	BX	22	24.4	26.9	1	35.5	16.9	5
SMBJ24A	SMBJ24CA	LZ	BZ	24	26.7	29.5	1	38.9	15.5	5
SMBJ26A	SMBJ26CA	ME	CE	26	28.9	31.9	1	42.1	14.3	5
SMBJ28A	SMBJ28CA	MG	CG	28	31.1	34.4	1	45.4	13.3	5
SMBJ30A	SMBJ30CA	MK	CK	30	33.3	36.8	1	48.4	12.4	5
SMBJ33A	SMBJ33CA	MM	CM	33	36.7	40.6	1	53.3	11.3	5
SMBJ36A	SMBJ36CA	MP	CP	36	40	44.2	1	58.1	10.4	5
SMBJ40A	SMBJ40CA	MR	CR	40	44.4	49.1	1	64.5	9.3	5
SMBJ43A	SMBJ43CA	MT	CT	43	47.8	52.8	1	69.4	8.7	5
SMBJ45A	SMBJ45CA	MV	CV	45	50	55.3	1	72.7	8.3	5
SMBJ48A	SMBJ48CA	MX	CX	48	53.3	58.9	1	77.4	7.8	5
SMBJ51A	SMBJ51CA	MZ	CZ	51	56.7	62.7	1	82.4	7.3	5
SMBJ54A	SMBJ54CA	NE	DE	54	60	66.3	1	87.1	6.9	5
SMBJ58A	SMBJ58CA	NG	DC	58	64.4	71.2	1	93.6	6.5	5
SMBJ60A	SMBJ60CA	NK	DK	60	66.7	73.7	1	96.8	6.2	5
SMBJ64A	SMBJ64CA	NM	DM	64	71.1	78.6	1	103	5.9	5
SMBJ70A	SMBJ70CA	NP	DP	70	77.8	86	1	113	5.3	5
SMBJ75A	SMBJ75CA	NR	DR	75	83.3	92.1	1	121	5	5
SMBJ78A	SMBJ78CA	NT	DT	78	86.7	95.8	1	126	4.8	5
SMBJ85A	SMBJ85CA	NV	DV	85	94.4	104	1	137	4.4	5
SMBJ90A	SMBJ90CA	NX	DX	90	100	111	1	146	4.1	5
SMBJ100A	SMBJ100CA	NZ	DZ	100	111	123	1	162	3.7	5
SMBJ110A	SMBJ110CA	PE	EE	110	122	135	1	177	3.4	5
SMBJ120A	SMBJ120CA	PG	EG	120	133	147	1	193	3.1	5
SMBJ130A	SMBJ130CA	PK	EK	130	144	159	1	209	2.9	5
SMBJ150A	SMBJ150CA	PM	EM	150	167	185	1	243	2.5	5
SMBJ160A	SMBJ160CA	PP	EP	160	178	197	1	259	2.3	5
SMBJ170A	SMBJ170CA	PR	ER	170	189	209	1	275	2.2	5
SMBJ180A	SMBJ180CA	PT	ET	180	201	222	1	292	2.1	1
SMBJ200A	SMBJ200CA	PV	EV	200	224	247	1	324	1.9	1

**Ratings and Characteristics Curves**

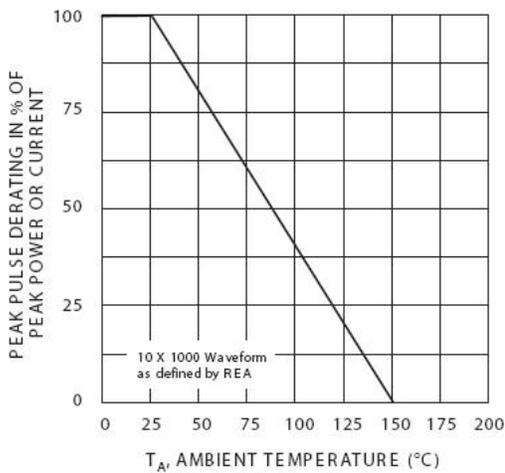


Fig. 1 Pulse Derating Curve

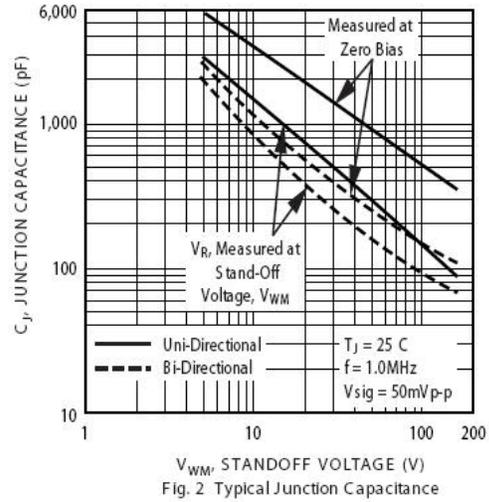


Fig. 2 Typical Junction Capacitance

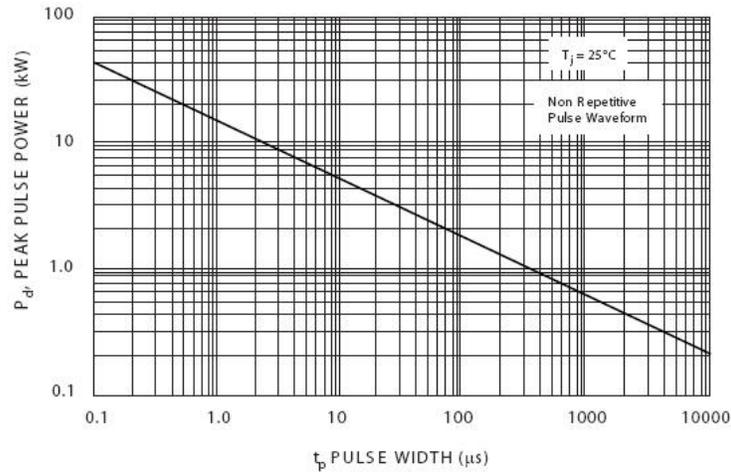


Fig. 3 Pulse Rating Curve

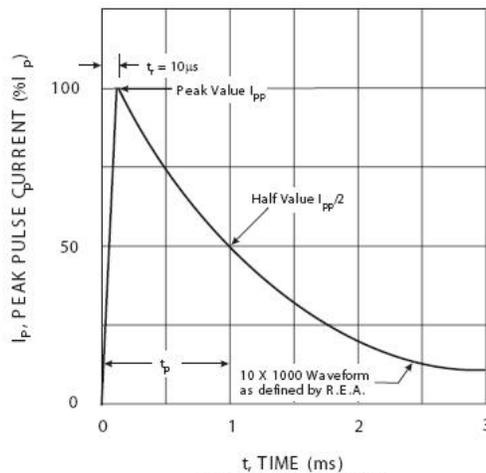


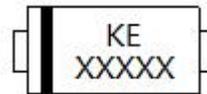
Fig. 4 Pulse Waveform

**Ordering Information**

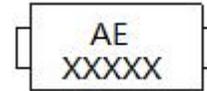
Device	Package	Shipping
SMBJ SERIES	SMB (Pb-Free)	3000pcs / reel
SMBJ SERIES TR	SMB (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**



SMBJ5.0A



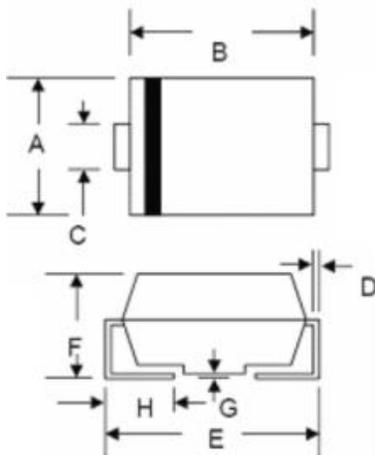
SMBJ5.0CA

Where XXXXX is YYWWL

KE/AE = Marking code  
YY = Year  
WW = Week  
L = Lot Number

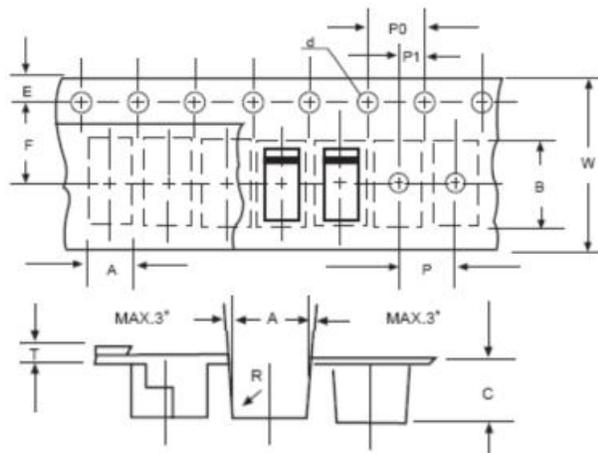
**Cautions:** Molding resin  
Epoxy resin UL-94V-0

**Mechanical Dimensions SMB**



Dim.	SMB/DO-214AA			
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.06	4.70	0.160	0.185
C	1.80	2.20	0.071	0.087
D	0.152	0.305	0.006	0.012
E	4.80	5.59	0.189	0.220
F	2.10	2.60	0.083	0.102
G	0.051	0.203	0.002	0.008
H	0.76	1.52	0.030	0.060
	In Millimeters		In inches	

**Carrier Tape Specification SMB**



SYMBOL	Millimeters	
	Min.	Max.
A	3.99	4.19
B	5.72	5.92
C	3.23	3.43
d	1.40	1.60
E	1.40	1.60
F	5.60	5.70
P	7.90	8.10
P0	3.90	4.10
P1	1.90	2.10
T	-	0.60
W	11.80	12.20

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