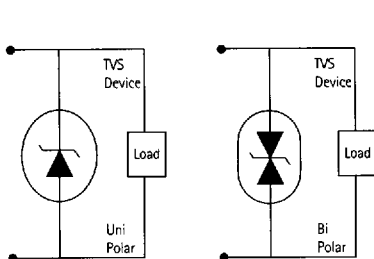


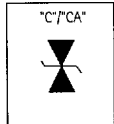
SMBJ Series

Mechanical Details

all dimensions in inches and (millimetres)

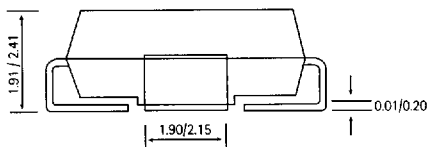
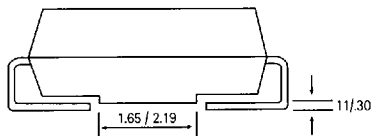
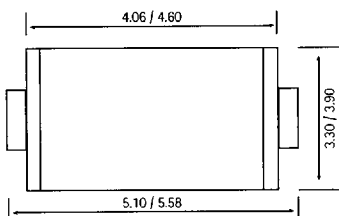


For Bipolar Applications
Specify "C" or "CA"



Features:

- 600 Watt Peak Power Protection
- Excellent Clamping Capability
- Fast Response Time
- Meets or Exceeds UL Flammability Spec. 94V-0
- Typical $I_{r} < 1\mu\text{a}$ above 10v
- Glass Passivated Chip Construction



Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

P_{PK}	Peak Pulse Power Dissipation at $T_p=1\text{ms}$	Min 600 W
P_d	Steady State Power Dissipation @ $T_t=75^\circ\text{C}$ (Note 2)	5.00 W
I_{FSM}	Peak Forward Surge Current, 8.3ms single half Sine-Wave Superimposed on Rated Load (JEDEC method. Note 3)	100 A
G_{RM}	Weight	0.12 grammes
S_t	Soldering requirements (Time and temp) 250°C	10 Sec min to solder
T_j	Operating temperature	-65 to +175°C
T_{stg}	Storage temperature	-65 to +175°C

Notes:

- For BiDirectional applications use C or CA Electrical Characteristics apply in both directions
- Mounted on 20mm copper pads to each terminal.
- 8.3ms single half sine-wave duty cycle, @ 4 pulses per minutes maximum
- V_{br} measured after it applies for 300 us It = Square Wave Pulse or equivalent
- Non-repetitive Current Pulse. Per Fig.3 and Derated above $T_a = 25^\circ\text{C}$

SMBJ Series

Device	Device Marking Code	Breakdown Voltage (Vbr)			Reverse Stand-Off Voltage Vwm	Max Reverse Leakage @ Vrw	Max Peak Impulse Surge Current Ippm	Max Clamping Voltage @ Ippm (Note 5)
		Min	Max	IT mA	VOLTS	Id(μA)	AMPS	VOLTS
SMBJ5.0C	KD	6.40	7.55	10	5.0	1600.0	62.5	9.6
SMBJ5.0CA	KE	6.40	7.25	10	5.0	1600.0	65.2	9.2
SMBJ6.0C	KF	6.67	8.45	10	6.0	1600.0	52.6	11.4
SMBJ6.0CA	KG	6.67	7.67	10	6.0	1600.0	58.3	10.3
SMBJ6.5C	AH	7.22	9.14	10	6.5	1000.0	48.7	12.3
SMBJ6.5CA	AK	7.22	8.30	10	6.5	1000.0	53.6	11.2
SMBJ7.0C	KL	7.78	9.86	10	7.0	400.0	45.1	13.3
SMBJ7.0CA	KM	7.78	8.95	10	7.0	400.0	50.0	12.0
SMBJ7.5C	AN	8.33	10.67	1.0	7.5	200.0	42.0	14.3
SMBJ7.5CA	AP	8.33	9.58	1.0	7.5	200.0	46.5	12.9
SMBJ8.0C	AQ	8.89	11.3	1.0	8.0	100.0	40.0	15.0
SMBJ8.0CA	AR	8.89	10.23	1.0	8.0	100.0	44.1	13.6
SMBJ8.5C	AS	9.44	11.92	1.0	8.5	20.0	37.7	15.9
SMBJ8.5CA	A7	9.44	10.82	1.0	8.5	20.0	41.7	14.4
SMBJ9.0C	AU	10.00	12.60	1.0	9.0	10.0	35.5	16.9
SMBJ9.0CA	AV	10.00	11.50	1.0	9.0	10.0	39.0	15.4
SMBJ10C	AW	11.1	14.1	1.0	10.0	5.0	31.9	18.8
SMBJ10CA	AX	11.1	12.8	1.0	10.0	5.0	35.3	17.0
SMBJ11C	KY	12.2	15.4	1.0	11.0	5.0	29.9	20.1
SMBJ11CA	KZ	12.2	14.0	1.0	11.0	5.0	33.0	18.2
SMBJ12C	BD	13.3	16.9	1.0	12.0	5.0	27.3	22.0
SMBJ12CA	BE	13.3	15.3	1.0	12.0	5.0	30.2	19.9
SMBJ13C	LF	14.4	18.2	1.0	13.0	5.0	25.2	23.8
SMBJ13CA	LG	14.4	16.5	1.0	13.0	5.0	27.9	21.5
SMBJ14C	BH	15.6	19.8	1.0	14.0	5.0	23.3	25.8
SMBJ14CA	BK	15.6	17.9	1.0	14.0	5.0	25.8	23.2
SMBJ15C	BL	16.7	21.1	1.0	15.0	5.0	22.3	26.9
SMBJ15CA	BM	16.7	19.2	1.0	15.0	5.0	24.0	24.4
SMBJ16C	LN	17.8	22.6	1.0	16.0	5.0	20.8	28.8
SMBJ16CA	LM	17.8	20.5	1.0	16.0	5.0	23.1	26.0
SMBJ17C	LQ	18.9	23.9	1.0	17.0	5.0	19.7	30.5
SMBJ17CA	LR	18.9	21.7	1.0	17.0	5.0	21.7	27.6
SMBJ18C	BS	20.0	25.3	1.0	18.0	5.0	18.6	32.2
SMBJ18CA	BT	20.0	23.3	1.0	18.0	5.0	20.5	29.2
SMBJ20C	LU	22.2	28.1	1.0	20.0	5.0	16.7	35.8
SMBJ20CA	LV	22.2	25.5	1.0	20.0	5.0	18.5	32.4
SMBJ22C	BW	24.4	30.9	1.0	22.0	5.0	15.2	39.4
SMBJ22CA	BX	24.4	28.0	1.0	22.0	5.0	16.9	35.5
SMBJ24C	BY	26.7	33.8	1.0	24.0	5.0	14.0	43.0
SMBJ24CA	BZ	26.7	30.7	1.0	24.0	5.0	15.4	38.9
SMBJ26C	CD	28.9	36.6	1.0	26.0	5.0	12.4	46.6
SMBJ26CA	CE	28.9	33.2	1.0	26.0	5.0	14.2	42.1
SMBJ28C	MF	31.1	39.4	1.0	28.0	5.0	12.0	50.0
SMBJ28CA	MG	31.1	35.8	1.0	28.0	5.0	13.2	45.4
SMBJ30C	CH	33.3	42.2	1.0	30.0	5.0	11.2	53.5
SMBJ30CA	CK	33.1	38.3	1.0	30.0	5.0	12.4	46.6
SMBJ33C	CL	36.7	46.5	1.0	33.0	5.0	10.2	59.0
SMBJ33CA	CM	36.7	42.5	1.0	33.0	5.0	11.3	53.3
SMBJ36C	CN	40.0	50.7	1.0	36.0	5.0	9.3	64.3
SMBJ36CA	CP	40.0	46.0	1.0	36.0	5.0	10.3	58.1
SMBJ40C	CQ	44.4	56.3	1.0	40.0	5.0	8.4	71.4
SMBJ40CA	CR	44.4	51.1	1.0	40.0	5.0	9.3	64.5
SMBJ43C	CS	47.8	60.5	1.0	43.0	5.0	7.8	76.7
SMBJ43CA	CT	47.8	54.9	1.0	43.0	5.0	8.6	69.4
SMBJ45C	MU	50.0	63.3	1.0	45.0	5.0	7.5	80.3
SMBJ45CA	MV	50.0	57.5	1.0	45.0	5.0	8.3	72.7
SMBJ48C	MW	53.3	67.5	1.0	48.0	5.0	7.0	85.5
SMBJ48CA	MX	53.3	61.3	1.0	48.0	5.0	7.7	69.4
SMBJ51C	MY	56.7	71.8	1.0	51.0	5.0	6.6	91.1
SMBJ51CA	MZ	56.7	65.2	1.0	51.0	5.0	7.3	82.4
SMBJ54C	ND	60.0	76.0	1.0	54	5.0	6.2	96.3
SMBJ54CA	ND	60.0	69.0	1.0	54	5.0	6.9	87.1

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SMBJ Series

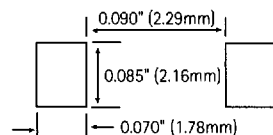
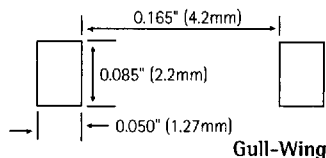
Device	Device Marking Code	Breakdown Voltage (Vbr)		IT mA	Reverse Stand-Off Voltage Vwm	Max Reverse Leakage @ Vwm	Max Peak Impulse Surge Current Ippm (Note 5)	Max Clamping Voltage at Ippm (Note 5)
		Min	Max					
SMBJ58C	NF	64.4	81.6	1.0	58.0	5.0	5.8	103.0
SMBJ58CA	NG	64.4	74.1	1.0	58.0	5.0	6.4	93.6
SMBJ60C	NH	66.7	84.5	1.0	60.0	5.0	5.6	107.0
SMBJ60CA	NK	66.7	76.7	1.0	60.0	5.0	6.2	96.8
SMBJ64C	NL	71.1	90.1	1.0	64.0	5.0	5.3	114.0
SMBJ64CA	NM	71.1	81.8	1.0	64.0	5.0	5.8	103.0
SMBJ70C	NN	77.8	98.6	1.0	70.0	5.0	4.8	125.0
SMBJ70CA	NP	77.8	89.5	1.0	70.0	5.0	5.3	113.0
SMBJ75C	NQ	83.3	105.7	1.0	75.0	5.0	4.5	134.0
SMBJ75CA	NR	83.3	95.8	1.0	75.0	5.0	4.9	121.0
SMBJ78C	NS	86.7	109.8	1.0	78.0	5.0	4.3	139.0
SMBJ78CA	NT	86.7	99.7	1.0	78.0	5.0	4.7	126.0
SMBJ85C	NU	94.4	119.2	1.0	85.0	5.0	3.9	151.0
SMBJ85CA	NV	94.4	108.2	1.0	85.0	5.0	4.4	137.0
SMBJ90C	NW	100.0	126.5	1.0	90.0	5.0	3.8	160.0
SMBJ90CA	NX	100.0	115.5	1.0	90.0	5.0	4.1	146.0
SMBJ100C	NY	111.0	141.0	1.0	100.0	5.0	3.4	179.0
SMBJ100CA	NZ	111.0	128.0	1.0	100.0	5.0	3.7	162.0
SMBJ110C	PD	122.0	154.5	1.0	110.0	5.0	3.0	196.0
SMBJ110CA	PE	122.0	140.5	1.0	110.0	5.0	3.4	177.0
SMBJ120C	PF	133.0	169.0	1.0	120.0	5.0	2.8	214.0
SMBJ120CA	PG	133.0	153.0	1.0	120.0	5.0	3.1	193.0
SMBJ130C	PH	144.0	182.5	1.0	130.0	5.0	2.6	231.0
SMBJ130CA	PK	144.0	165.5	1.0	130.0	5.0	2.9	209.0
SMBJ150C	PL	167.0	211.5	1.0	150.0	5.0	2.2	268.0
SMBJ150CA	PM	167.0	192.5	1.0	150.0	5.0	2.5	243.0
SMBJ160C	PN	178.0	226.0	1.0	160.0	5.0	2.1	287.0
SMBJ160CA	PP	178.0	205.0	1.0	160.0	5.0	2.3	259.0
SMBJ170C	PQ	189.0	239.5	1.0	170.0	5.0	2.0	304.0
SMBJ170CA	PR	189.0	217.5	1.0	170.0	5.0	2.2	275.0

Notes:

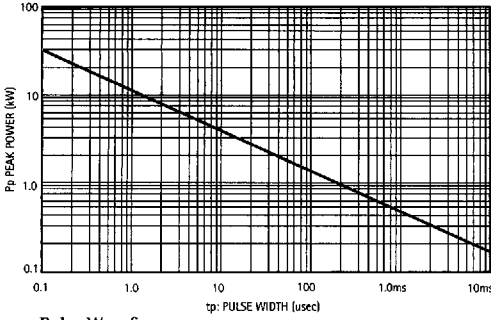
1. V(BR) measured after IT applied for 300µs IT = Square Wave Pulse or equivalent.
2. Surge Current Waveform per form Figure 3 and Derate per figure 2.
3. A Transient TVS is normally selected according to the reverse "Stand Off Voltage" (VWM) which should be equal to or greater than the DC or continuous peak operating voltage level.
4. All terms and symbols are consistent with ANSI/IEEE C62.35 specifications.

Recommended Pad Layout

The pad dimensions should be 0.010" (.25mm) longer than the contact size, in the lead axis. This allows a solder fillet to form, see figure below. Contact factory for soldering methods.

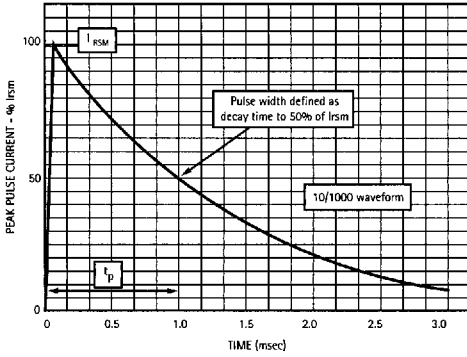


Pulse Rating Curve

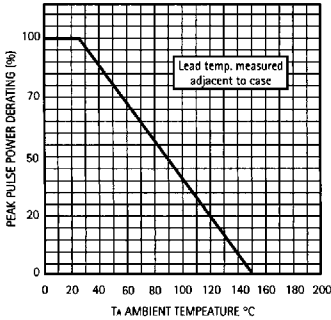


SMBJ Series

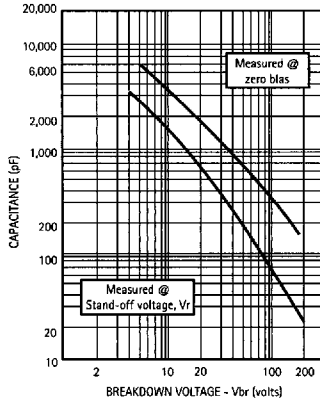
Pulse Waveform



Pulse Derating Curve



Typical Junction Capacitance



Peak Forward Surge Current

