

**SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS**

STAND-OFF VOLTAGE - **5.0 to 170 Volts**
POWER DISSIPATION - **600 WATTS**

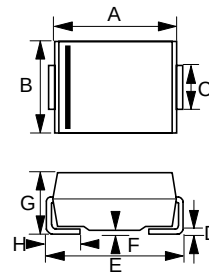
FEATURES

- Rating to 200V VBR
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min

MECHANICAL DATA

- Case : Molded plastic
- Polarity : by cathode band denotes uni-directional device
none cathode band denotes bi-directional device
- Weight : 0.003 ounces, 0.093 gram

SMB



SMB		
DIM.	MIN.	MAX.
A	4.06	4.57
B	3.30	3.94
C	1.96	2.21
D	0.15	0.31
E	5.21	5.59
F	0.05	0.20
G	2.01	2.62
H	0.76	1.52
All Dimensions in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT $T_A = 25^\circ\text{C}$, $T_P = 1\text{ms}$ (Note 1,2)	P_{PK}	Minimum 600	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD)	I_{FSM}	100	AMPS.
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$	$P_{M(AV)}$	5.0	WATTS
Maximum Instantaneous forward voltage at 50A for unidirectional devices only (Note 4)	V_F	SEE NOTE 4	Volts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

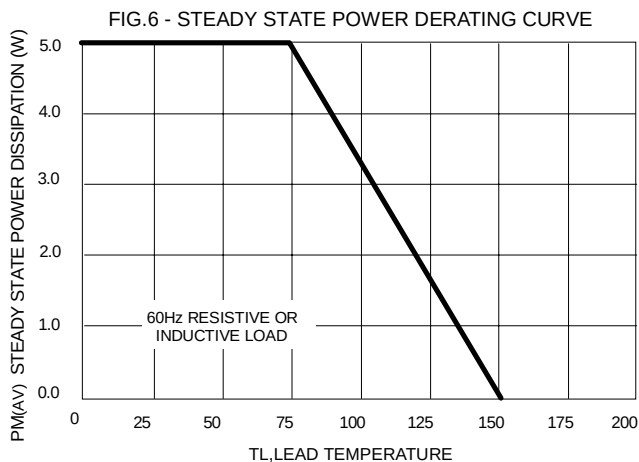
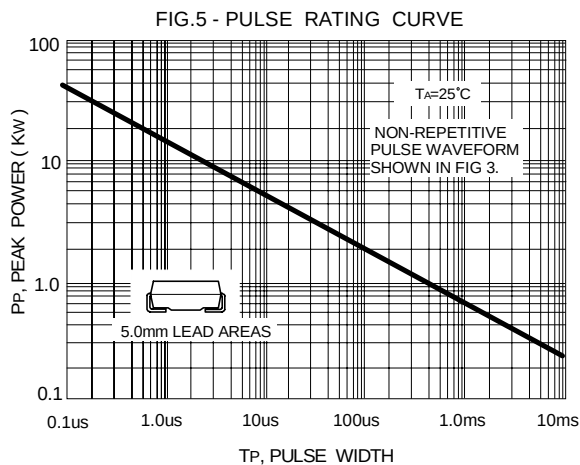
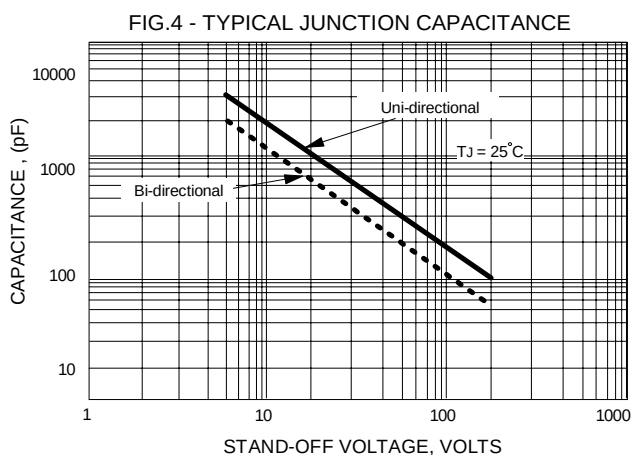
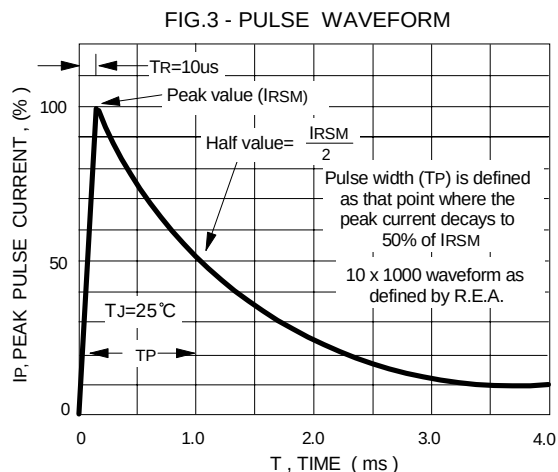
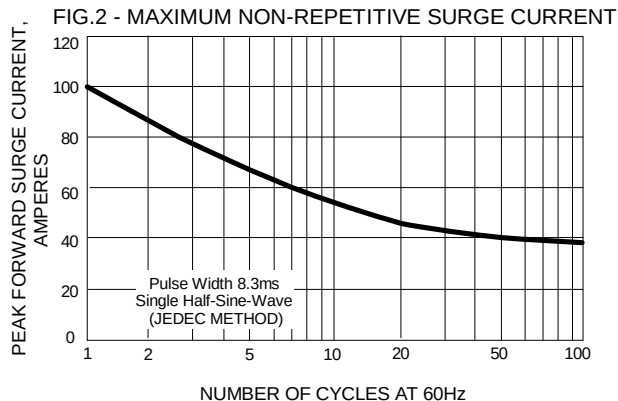
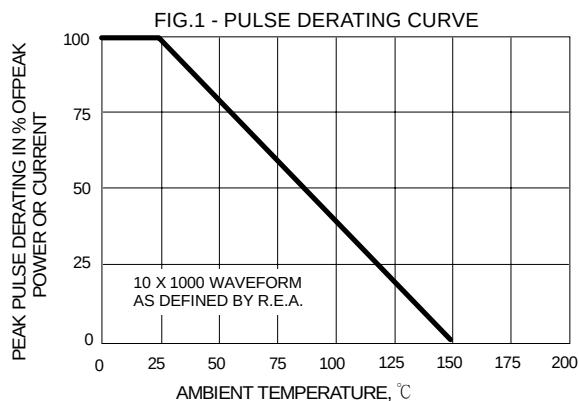
NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25^\circ\text{C}$ per fig.1.

2. Thermal Resistance junction to Lead

3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).

4. $V_F = 3.5\text{V}$ on SMBJ5.0 thru SMBJ90A devices and $V_F = 5.0\text{V}$ on SMBJ100 thru SMBJ170A devices.

REV. 4, 12-Janr-2004, KSIB02



Device Uni- directional	Device Bi- directional	Device Marking code		Working PeakReverse Voltage	Breakdown voltage VBR Volts			Maximum Reverse Voltage at IRSM (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at VRWM
		(UNI)	(BI)		Min.	Max.	@IT(mA)			
SMBJ5.0	SMBJ5.0C	KD	AD	5.0	6.40	7.55	10	9.6	62.5	800
SMBJ5.0A	SMBJ5.0CA	KE	AE	5.0	6.40	7.25	10	9.2	65.2	800
SMBJ6.0	SMBJ6.0C	KF	AF	6.0	6.67	8.45	10	11.4	52.6	800
SMBJ6.0A	SMBJ6.0CA	KG	AG	6.0	6.67	7.67	10	10.3	58.3	800
SMBJ6.5	SMBJ6.5C	KH	AH	6.5	7.22	9.14	10	12.3	48.7	500
SMBJ6.5A	SMBJ6.5CA	KK	AK	6.5	7.22	8.30	10	11.2	53.6	500
SMBJ7.0	SMBJ7.0C	KL	AL	7.0	7.78	9.86	10	13.3	45.1	200
SMBJ7.0A	SMBJ7.0CA	KM	AM	7.0	7.78	8.95	10	12.0	50.0	200
SMBJ7.5	SMBJ7.5C	KN	AN	7.5	8.33	10.8	1.0	14.3	42.0	100
SMBJ7.5A	SMBJ7.5CA	KP	AP	7.5	8.33	9.58	1.0	12.9	46.5	100
SMBJ8.0	SMBJ8.0C	KQ	AQ	8.0	8.89	11.3	1.0	15.0	40.0	50.0
SMBJ8.0A	SMBJ8.0CA	KR	AR	8.0	8.89	10.20	1.0	13.6	44.1	50.0
SMBJ8.5	SMBJ8.5C	KS	AS	8.5	9.44	11.9	1.0	15.9	37.7	20.0
SMBJ8.5A	SMBJ8.5CA	KT	AT	8.5	9.44	10.8	1.0	14.4	41.7	20.0
SMBJ9.0	SMBJ9.0C	KU	AU	9.0	10.0	12.8	1.0	16.9	35.5	10.0
SMBJ9.0A	SMBJ9.0CA	KV	AV	9.0	10.0	11.5	1.0	15.4	39.0	10.0
SMBJ10	SMBJ10C	KW	AW	10	11.1	14.1	1.0	18.8	31.9	5.0
SMBJ10A	SMBJ10CA	KX	AX	10	11.1	12.8	1.0	17.0	35.3	5.0
SMBJ11	SMBJ11C	KY	AY	11	12.2	15.4	1.0	20.1	29.9	5.0
SMBJ11A	SMBJ11CA	KZ	AZ	11	12.2	14.4	1.0	18.2	33.0	5.0
SMBJ12	SMBJ12C	LD	BD	12	13.3	16.9	1.0	22.0	27.3	5.0
SMBJ12A	SMBJ12CA	LE	BE	12	13.3	15.3	1.0	19.9	30.2	5.0
SMBJ13	SMBJ13C	LF	BF	13	14.4	18.2	1.0	23.8	25.2	5.0
SMBJ13A	SMBJ13CA	LG	BG	13	14.4	16.5	1.0	21.5	27.9	5.0
SMBJ14	SMBJ14C	LH	BH	14	15.6	19.8	1.0	25.8	23.3	5.0
SMBJ14A	SMBJ14CA	LK	BK	14	15.6	17.9	1.0	23.2	25.8	5.0
SMBJ15	SMBJ15C	LL	BL	15	16.7	21.1	1.0	26.9	22.3	5.0
SMBJ15A	SMBJ15CA	LM	BM	15	16.7	19.2	1.0	24.4	24.0	5.0
SMBJ16	SMBJ16C	LN	BN	16	17.8	22.6	1.0	28.8	20.8	5.0
SMBJ16A	SMBJ16CA	LP	BP	16	17.8	20.5	1.0	26.0	23.1	5.0
SMBJ17	SMBJ17C	LQ	BQ	17	18.9	23.9	1.0	30.5	19.7	5.0
SMBJ17A	SMBJ17CA	LR	BR	17	18.9	21.7	1.0	27.6	21.7	5.0
SMBJ18	SMBJ18C	LS	BS	18	20.0	25.3	1.0	32.2	18.6	5.0
SMBJ18A	SMBJ18CA	LT	BT	18	20.0	23.3	1.0	29.2	20.5	5.0
SMBJ20	SMBJ20C	LU	BU	20	22.2	28.1	1.0	35.8	16.7	5.0
SMBJ20A	SMBJ20CA	LV	BV	20	22.2	25.5	1.0	32.4	18.5	5.0
SMBJ22	SMBJ22C	LW	BW	22	24.4	30.9	1.0	39.4	15.2	5.0
SMBJ22A	SMBJ22CA	LX	BX	22	24.4	28.0	1.0	35.5	16.9	5.0
SMBJ24	SMBJ24C	LY	BY	24	26.7	33.8	1.0	43.0	14.0	5.0
SMBJ24A	SMBJ24CA	LZ	BZ	24	26.7	30.7	1.0	38.9	15.4	5.0
SMBJ26	SMBJ26C	MD	CD	26	28.9	36.8	1.0	46.6	12.4	5.0
SMBJ26A	SMBJ26CA	ME	CE	26	28.9	32.2	1.0	42.1	14.2	5.0
SMBJ28	SMBJ28C	MF	CF	28	31.1	39.4	1.0	50.0	12.0	5.0
SMBJ28A	SMBJ28CA	MG	CG	28	31.1	35.8	1.0	45.4	13.2	5.0
SMBJ30	SMBJ30C	MH	CH	30	33.3	42.4	1.0	53.5	11.2	5.0
SMBJ30A	SMBJ30CA	MK	CK	30	33.3	38.3	1.0	48.4	12.4	5.0
SMBJ33	SMBJ33C	ML	CL	33	36.7	46.9	1.0	59.0	10.2	5.0
SMBJ33A	SMBJ33CA	MM	CM	33	36.7	42.2	1.0	53.3	11.3	5.0

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		(UNI)	(BI)		Min.	Max.	@IT(mA)			
SMBJ36	SMBJ36C	MN	CN	36	40.0	50.7	1.0	64.3	9.3	5.0
SMBJ36A	SMBJ36CA	MP	CP	36	40.0	46.0	1.0	58.1	10.3	5.0
SMBJ40	SMBJ40C	MQ	CQ	40	44.4	56.3	1.0	71.4	8.4	5.0
SMBJ40A	SMBJ40CA	MR	CR	40	44.4	51.1	1.0	64.5	9.3	5.0
SMBJ43	SMBJ43C	MS	CS	43	47.8	60.5	1.0	76.7	7.8	5.0
SMBJ43A	SMBJ43CA	MT	CT	43	47.8	54.9	1.0	69.4	8.6	5.0
SMBJ45	SMBJ45C	MU	CU	45	50.0	63.3	1.0	80.3	7.5	5.0
SMBJ45A	SMBJ45CA	MV	CV	45	50.0	57.5	1.0	72.7	8.3	5.0
SMBJ48	SMBJ48C	MW	CW	48	53.3	67.5	1.0	85.5	7.0	5.0
SMBJ48A	SMBJ48CA	MX	CX	48	53.3	61.3	1.0	77.4	7.7	5.0
SMBJ51	SMBJ51C	MY	CY	51	56.7	71.8	1.0	91.1	6.6	5.0
SMBJ51A	SMBJ51CA	MZ	CZ	51	56.7	65.2	1.0	82.4	7.3	5.0
SMBJ54	SMBJ54C	ND	DD	54	60.0	76.0	1.0	96.3	6.2	5.0
SMBJ54A	SMBJ54CA	NE	DE	54	60.0	69.0	1.0	87.1	6.9	5.0
SMBJ58	SMBJ58C	NF	DF	58	64.4	81.6	1.0	103	5.8	5.0
SMBJ58A	SMBJ58CA	NG	DG	58	64.4	74.6	1.0	93.6	6.4	5.0
SMBJ60	SMBJ60C	NH	DH	60	66.7	84.5	1.0	107	5.6	5.0
SMBJ60A	SMBJ60CA	NK	DK	60	66.7	76.7	1.0	96.8	6.2	5.0
SMBJ64	SMBJ64C	NL	DL	64	71.1	90.1	1.0	114	5.3	5.0
SMBJ64A	SMBJ64CA	NM	DM	64	71.1	81.8	1.0	103	5.8	5.0
SMBJ70	SMBJ70C	NN	DN	70	77.8	98.6	1.0	125	4.8	5.0
SMBJ70A	SMBJ70CA	NP	DP	70	77.8	89.5	1.0	113	5.3	5.0
SMBJ75	SMBJ75C	NQ	DQ	75	83.3	106	1.0	134	4.5	5.0
SMBJ75A	SMBJ75CA	NR	DR	75	83.3	95.8	1.0	121	4.9	5.0
SMBJ78	SMBJ78C	NS	DS	78	86.7	110	1.0	139	4.3	5.0
SMBJ78A	SMBJ78CA	NT	DT	78	86.7	99.7	1.0	126	4.7	5.0
SMBJ85	SMBJ85C	NU	DU	85	94.4	119.2	1.0	151	3.9	5.0
SMBJ85A	SMBJ85CA	NV	DV	85	94.4	108.2	1.0	137	4.4	5.0
SMBJ90	SMBJ90C	NW	DW	90	100	126.5	1.0	160	3.8	5.0
SMBJ90A	SMBJ90CA	NX	DX	90	100	115.5	1.0	146	4.1	5.0
SMBJ100	SMBJ100C	NY	DY	100	111	141.0	1.0	179	3.4	5.0
SMBJ100A	SMBJ100CA	NZ	DZ	100	111	128.0	1.0	162	3.7	5.0
SMBJ110	SMBJ110C	PD	ED	110	122	154.0	1.0	196	3.0	5.0
SMBJ110A	SMBJ110CA	PE	EE	110	122	140.0	1.0	177	3.4	5.0
SMBJ120	SMBJ120C	PF	EF	120	133	169.0	1.0	214	2.8	5.0
SMBJ120A	SMBJ120CA	PG	EG	120	133	153.0	1.0	193	3.1	5.0
SMBJ130	SMBJ130C	PH	EH	130	144	182.0	1.0	231	2.6	5.0
SMBJ130A	SMBJ130CA	PK	EK	130	144	165.0	1.0	209	2.9	5.0
SMBJ150	SMBJ150C	PL	EL	150	167	211.5	1.0	268	2.2	5.0
SMBJ150A	SMBJ150CA	PM	EM	150	167	192.0	1.0	243	2.5	5.0
SMBJ160	SMBJ160C	PN	EN	160	178	226.0	1.0	287	2.1	5.0
SMBJ160A	SMBJ160CA	PP	EP	160	178	205.0	1.0	259	2.3	5.0
SMBJ170	SMBJ170C	PQ	EQ	170	189	239.5	1.0	304	2.0	5.0
SMBJ170A	SMBJ170CA	PR	ER	170	189	217.5	1.0	275	2.2	5.0

NOTE :

- 1) Suffix 'A ' denotes 5% tolerance device, no suffix denotes 10 % tolerance device.
- 2) Add suffix 'C ' or ' CA ' after part number to specify Bi-directional devices.
- 3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .
- 4) For Uni-directional devices VF max=3.5v at if=35 A ,0.5 sine wave of 8.3 msec .pulse width.