

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

REVERSE VOLTAGE - **6.8 to 200** Volts  
POWER DISSIPATION - **600** WATTS

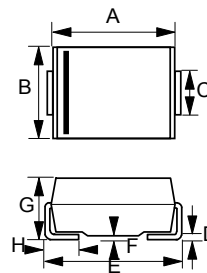
**FEATURES**

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-0
- 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
- For Electric Meter

**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	2.50
H	0.76	1.52
All Dimensions in millimeter		

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT T <sub>J</sub> = 25°C , TP = 1ms (Note 1)	P <sub>PK</sub>	600	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave@T <sub>J</sub> =25°C (Note 2)	I <sub>FSM</sub>	80	AMPS.
Steady State Power Dissipation at T <sub>L</sub> =120°C lead lengths 0.375" (9.5mm) , see fig.4 Without Heatshink	P <sub>M(AV)</sub>	1.5	WATTS
Maximum Instantaneous forward voltage at 50A for unidirectional devices only	V <sub>F</sub>	3.5	Volts
Typical Thermal Resistance (Note 3)	R <sub>θJA</sub> R <sub>θJL</sub> R <sub>θJC</sub>	90 21 25	°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +175	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C

- NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above T<sub>J</sub>= 25 °C per fig.1.  
2. Only for unidirectional units.  
3. Thermal resistance from junction to ambient, lead and case.

FIG.1 - PULSE DERATING CURVE

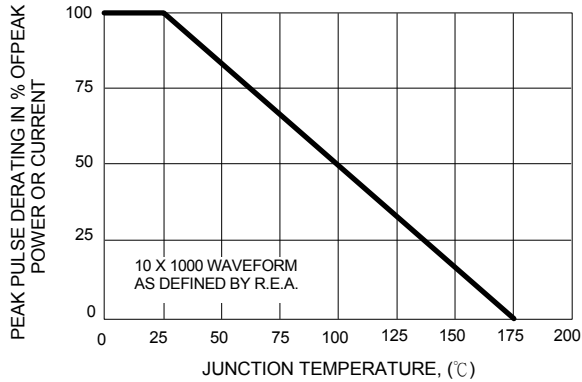


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

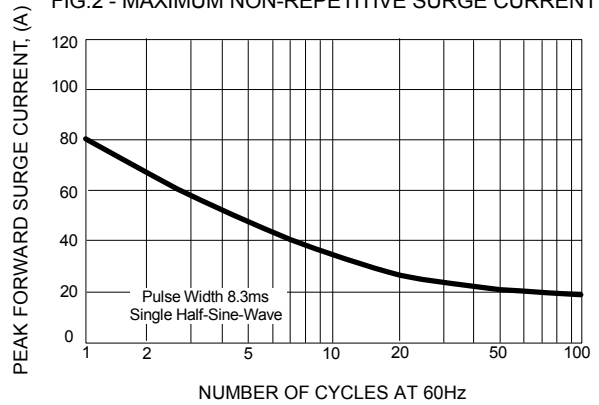


FIG.3 - PULSE WAVEFORM

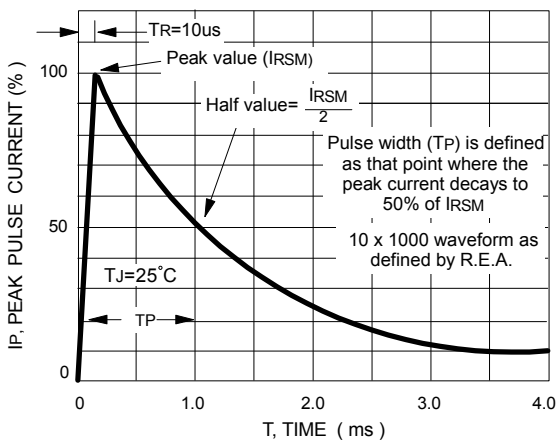


FIG.4 - TYPICAL JUNCTION CAPACITANCE

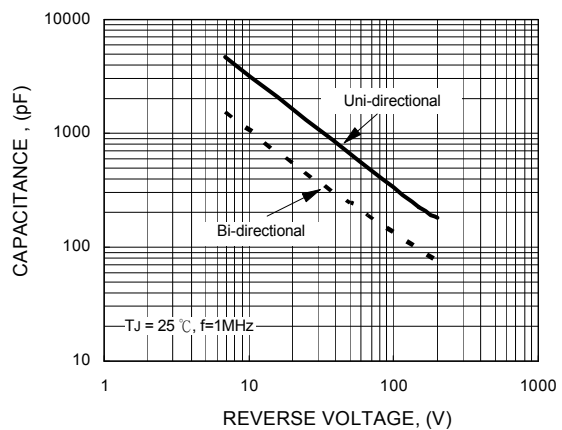


FIG.5 - PULSE RATING CURVE

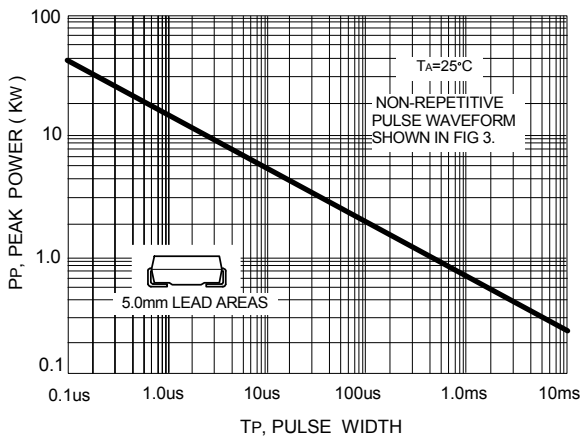
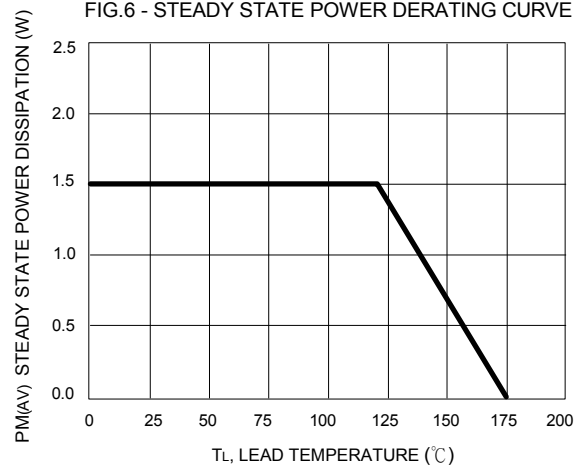


FIG.6 - STEADY STATE POWER DERATING CURVE



Type Number	Type Number	Device Marking code		Reverse Standoff Voltage	Breakdown Voltage BV Volts @It			Max. Reverse Leakage @VR	Max. Peak Pulse Current	Max. Clamping Voltage @Ipp	Max. Voltage Temp. Variation of Bv
		(UNI)	(BI)		VR (V)	Min (V)	Max (V)				
ESMBJ6.8A	ESMBJ6.8CA	E6V8A	E6V8C	5.8	6.45	7.13	10	1000	57.1	10.5	0.057
ESMBJ7.5A	ESMBJ7.5CA	E7V5A	E7V5C	6.4	7.13	7.88	10	500	53.1	11.3	0.061
ESMBJ8.2A	ESMBJ8.2CA	E8V2A	E8V2C	7.0	7.79	8.61	10	200	49.6	12.1	0.065
ESMBJ9.1A	ESMBJ9.1CA	E9V1A	E9V1C	7.8	8.65	9.56	1	50	44.8	13.4	0.068
ESMBJ10A	ESMBJ10CA	E10A	E10C	8.6	9.50	10.50	1	10	41.4	14.5	0.073
ESMBJ11A	ESMBJ11CA	E11A	E11C	9.4	10.5	11.6	1	5	38.5	15.6	0.075
ESMBJ12A	ESMBJ12CA	E12A	E12C	10.2	11.4	12.6	1	5	35.9	16.7	0.078
ESMBJ13A	ESMBJ13CA	E13A	E13C	11.1	12.4	13.7	1	5	33.0	18.2	0.081
ESMBJ15A	ESMBJ15CA	E15A	E15C	12.8	14.3	15.8	1	5	28.3	21.2	0.084
ESMBJ16A	ESMBJ16CA	E16A	E16C	13.6	15.2	16.8	1	5	26.7	22.5	0.086
ESMBJ18A	ESMBJ18CA	E18A	E18C	15.3	17.1	18.9	1	5	23.8	25.2	0.088
ESMBJ20A	ESMBJ20CA	E20A	E20C	17.1	19.0	21.0	1	5	21.7	27.7	0.090
ESMBJ22A	ESMBJ22CA	E22A	E22C	18.8	20.9	23.1	1	5	19.6	30.6	0.092
ESMBJ24A	ESMBJ24CA	E24A	E24C	20.5	22.8	25.2	1	5	18.1	33.2	0.094
ESMBJ27A	ESMBJ27CA	E27A	E27C	23.1	25.7	28.4	1	5	16.0	37.5	0.096
ESMBJ30A	ESMBJ30CA	E30A	E30C	25.6	28.5	31.5	1	5	14.5	41.4	0.097
ESMBJ33A	ESMBJ33CA	E33A	E33C	28.2	31.4	34.7	1	5	13.1	45.7	0.098
ESMBJ36A	ESMBJ36CA	E36A	E36C	30.8	34.2	37.8	1	5	12.0	49.9	0.099
ESMBJ39A	ESMBJ39CA	E39A	E39C	33.3	37.1	41.0	1	5	11.1	53.9	0.100
ESMBJ43A	ESMBJ43CA	E43A	E43C	36.8	40.9	45.2	1	5	10.1	59.3	0.101
ESMBJ47A	ESMBJ47CA	E47A	E47C	40.2	44.7	49.4	1	5	9.3	64.8	0.101
ESMBJ51A	ESMBJ51CA	E51A	E51C	43.6	48.5	53.6	1	5	8.6	70.1	0.102
ESMBJ56A	ESMBJ56CA	E56A	E56C	47.8	53.2	58.8	1	5	7.8	77.0	0.103
ESMBJ62A	ESMBJ62CA	E62A	E62C	53.0	58.9	65.1	1	5	7.1	85.0	0.104
ESMBJ68A	ESMBJ68CA	E68A	E68C	58.1	64.6	71.4	1	5	6.5	92.0	0.104
ESMBJ75A	ESMBJ75CA	E75A	E75C	64.7	71.3	78.8	1	5	5.8	103.0	0.105
ESMBJ82A	ESMBJ82CA	E82A	E82C	70.1	77.9	86.1	1	5	5.3	113.0	0.105
ESMBJ91A	ESMBJ91CA	E91A	E91C	77.8	86.5	95.6	1	5	4.8	125.0	0.106
ESMBJ100A	ESMBJ100CA	E100A	E100C	85.5	95.0	105.0	1	5	4.4	137.0	0.106
ESMBJ110A	ESMBJ110CA	E110A	E110C	94.0	105.0	116.1	1	5	3.9	152.0	0.107
ESMBJ120A	ESMBJ120CA	E120A	E120C	102.0	114.0	126.0	1	5	3.6	165.0	0.107
ESMBJ130A	ESMBJ130CA	E130A	E130C	111.0	124.0	137.1	1	5	3.4	179.0	0.107
ESMBJ150A	ESMBJ150CA	E150A	150C	128.0	143.0	158.1	1	5	2.9	207.0	0.108
ESMBJ160A	ESMBJ160CA	E160A	E160C	136.0	152.0	168.0	1	5	2.7	219.0	0.108
ESMBJ170A	ESMBJ170CA	E170A	E170C	145.0	162.0	179.1	1	5	2.6	234.0	0.108
ESMBJ180A	ESMBJ180CA	E180A	E180C	154.0	171.0	189.0	1	5	2.4	246.0	0.108
ESMBJ200A	ESMBJ200CA	E200A	E200C	171.0	190.0	210.0	1	5	2.2	274.0	0.108

**NOTE :**

Suffix 'C' denotes bidirectional device. Suffix 'A' denotes 5% tolerance device.

1. For bidirectional devices having VR of 10 volts and under, the IR limit is doubled .

## **Important Notice and Disclaimer**

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