

## 600W Surface Mount Transient Voltage Suppressors

**Peak Pulse Power  
600 Watt  
Stand-off Voltage  
5.0 To 170 VOLTS**

### Feature:

- \* 600 Watt Peak Power Dissipation
- \* Glass Passivated Die Construction
- \* Excellent Clamping Capability Fast Response Time
- \* Plastic Material Has UL Flammability Classification Rating 94V-0



**SMB(DO-214AA)**

### Mechanical Data

- \* Case: Transfer Molded Epoxy
- \* Polarity: Indicator by Cathode Band  
(Bi-directional Devices Has no Polarity Indicator)
- \* Terminals: Solderable per MIL-STD-202 Method 208
- \* Weight: 0.1grams(approx)

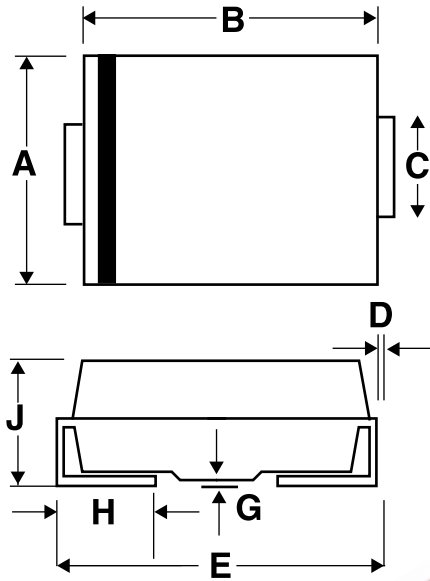
### Maximum Ratings

| Characteristics  | Symbol         | Value       | Unit        |
|--|----------------|-------------|-------------|
| Peak Pulse Power Dissipation on 10/1000us Waveform(1)(2)(Fig1)   | $P_{PPM}$      | 600         | W           |
| Peak Pulse Current of on 10/1000us Waveform(3)(Fig3)   | $I_{PPM}$      | see Table   | A           |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave, Superimposed on Rated Load(JEDEC Method)(2)(3) | $I_{FSM}$      | 100         | A           |
| Operating and Storage Junction Temperature Range   | $T_j, T_{STG}$ | -55 to -150 | $^{\circ}C$ |

- NOTE: 1. Non-Repetitive Current Pulse, per Fig3 and Derated above  $T_A=25^{\circ}C$  per Fig2  
 2. Mounted on 5.0mm<sup>2</sup> Copper Pads to each Terminal  
 3. 8.3ms Single Half Sine-Wave, or equivalent Square Wave, Duty Cycle=4 pulses per minutes Maximum.

**SMB Outline Dimension**

Unit:mm



| SMB |      |      |
|-----|------|------|
| Dim | Min  | Max  |
| A   | 3.30 | 3.94 |
| B   | 4.06 | 4.80 |
| C   | 1.96 | 2.21 |
| D   | 0.15 | 0.31 |
| E   | 5.00 | 5.59 |
| G   | 0.10 | 0.20 |
| H   | 0.76 | 1.52 |
| J   | 2.00 | 2.62 |

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FIG.1 - PULSE RATING CURVE

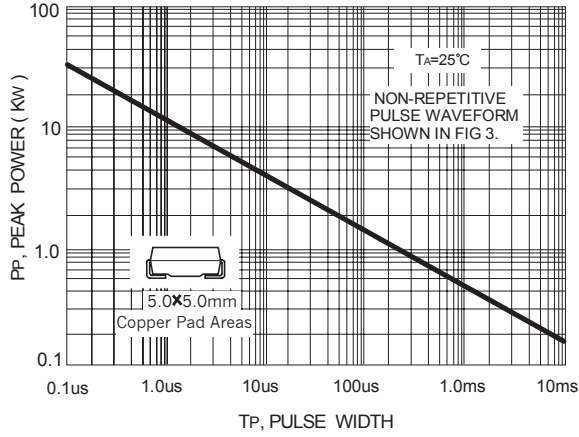


FIG.2 - PULSE DERATING CURVE

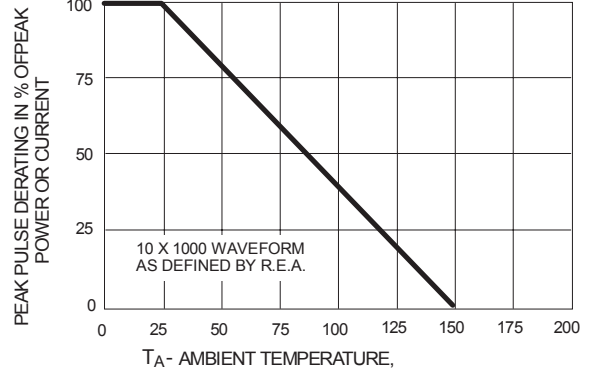


FIG.3 - PULSE WAVEFORM

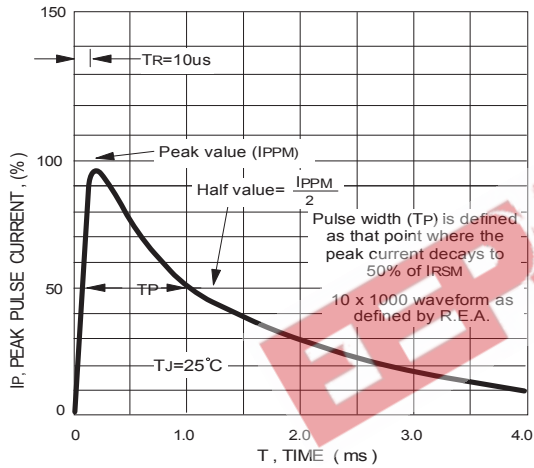
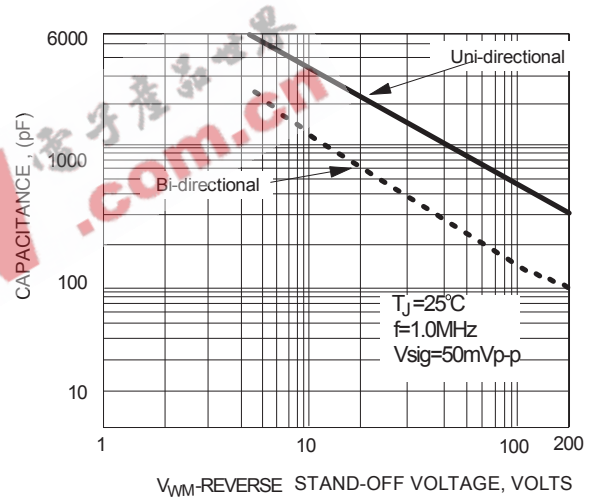


FIG.4 - TYPICAL JUNCTION CAPACITANCE



**Electrical characteristics**

| SMBJ<br>PART NUMBER |             | DEVICE<br>MARKING<br>CODE |    | REVERSE<br>STAND-<br>OFF<br>VOLTAGE<br>$V_{RWM}(V)$ | BREAK DOWN<br>VOLTAGE          |                                | TEST<br>CURRE<br>NT<br>$I_T$ (mA) | MAXIMUM<br>CLAMPING<br>VOLTAGE<br>@ $I_{pp}$ $V_c(V)$ | PEAK<br>PULSE<br>CURRENT<br>$I_{pp}$ (A) | REVERSE<br>LEAKAGE<br>@ $V_{RWM}$<br>$I_R(\mu A)(3)$ |
|---------------------|-------------|---------------------------|----|---|--------------------------------|--------------------------------|-----------------------------------|---|--|--|
| UNI- POLAR          | BI-POLAR(1) | UNI                       | BI |   | $V_{BR}(V)(1)$<br>MIN. @ $I_T$ | $V_{BR}(V)(2)$<br>MAX. @ $I_T$ |                                   |   |  |  |
| SMBJ5.0A            | SMBJ5.0CA   | KE                        | AE | 5.0   | 6.40                           | 7.00                           | 10                                | 9.2   | 65.3                                     | 800  |
| SMBJ6.0A            | SMBJ6.0CA   | KG                        | AG | 6.0   | 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 | 7.0   | 7.78                           | 8.60                           | 10                                | 12.0  | 50.0                                     | 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 | 8.0   | 8.89                           | 9.83                           | 1                                 | 13.6  | 44.2                                     | 50   |
| SMBJ8.5A            | SMBJ8.5CA   | KT                        | AT | 8.5   | 9.44                           | 10.40                          | 1                                 | 14.4  | 41.7                                     | 20   |
| SMBJ9.0A            | SMBJ9.0CA   | KV                        | AV | 9.0   | 10.00                          | 11.10                          | 1                                 | 15.4  | 39.0                                     | 10   |
| SMBJ10A             | SMBJ10CA    | KX                        | AX | 10.0  | 11.10                          | 12.30                          | 1                                 | 17.0  | 35.3                                     | 5  |
| SMBJ11A             | SMBJ11CA    | KZ                        | AZ | 11.0  | 12.20                          | 13.50                          | 1                                 | 18.2  | 33.0                                     | 5  |
| SMBJ12A             | SMBJ12CA    | LE                        | BE | 12.0  | 13.30                          | 14.70                          | 1                                 | 19.9  | 30.2                                     | 5  |
| SMBJ13A             | SMBJ13CA    | LG                        | BG | 13.0  | 14.40                          | 15.90                          | 1                                 | 21.5  | 28.0                                     | 5  |
| SMBJ14A             | SMBJ14CA    | LK                        | BK | 14.0  | 15.60                          | 17.20                          | 1                                 | 23.2  | 25.9                                     | 5  |
| SMBJ15A             | SMBJ15CA    | LM                        | BM | 15.0  | 16.70                          | 18.50                          | 1                                 | 24.4  | 24.6                                     | 5  |
| SMBJ16A             | SMBJ16CA    | LP                        | BP | 16.0  | 17.80                          | 19.70                          | 1                                 | 26.0  | 23.1                                     | 5  |
| SMBJ17A             | SMBJ17CA    | LR                        | BR | 17.0  | 18.90                          | 20.90                          | 1                                 | 27.6  | 21.8                                     | 5  |
| SMBJ18A             | SMBJ18CA    | LT                        | BT | 18.0  | 20.00                          | 22.10                          | 1                                 | 29.2  | 20.6                                     | 5  |
| SMBJ20A             | SMBJ20CA    | LV                        | BV | 20.0  | 22.20                          | 24.50                          | 1                                 | 32.4  | 18.6                                     | 5  |
| SMBJ22A             | SMBJ22CA    | LX                        | BX | 22.0  | 24.40                          | 26.90                          | 1                                 | 35.5  | 16.9                                     | 5  |
| SMBJ24A             | SMBJ24CA    | LZ                        | BZ | 24.0  | 26.70                          | 29.50                          | 1                                 | 38.9  | 15.5                                     | 5  |
| SMBJ26A             | SMBJ26CA    | ME                        | CE | 26.0  | 28.90                          | 31.90                          | 1                                 | 42.1  | 14.3                                     | 5  |
| SMBJ28A             | SMBJ28CA    | MG                        | CG | 28.0  | 31.10                          | 34.40                          | 1                                 | 45.4  | 13.3                                     | 5  |
| SMBJ30A             | SMBJ30CA    | MK                        | CK | 30.0  | 33.30                          | 36.80                          | 1                                 | 48.4  | 12.4                                     | 5  |
| SMBJ33A             | SMBJ33CA    | MM                        | CM | 33.0  | 36.70                          | 40.60                          | 1                                 | 53.3  | 11.3                                     | 5  |
| SMBJ36A             | SMBJ36CA    | MP                        | CP | 36.0  | 40.00                          | 44.20                          | 1                                 | 58.1  | 10.4                                     | 5  |
| SMBJ40A             | SMBJ40CA    | MR                        | CR | 40.0  | 44.40                          | 49.10                          | 1                                 | 64.5  | 9.3                                      | 5  |
| SMBJ43A             | SMBJ43CA    | MT                        | CT | 43.0  | 47.80                          | 52.80                          | 1                                 | 69.4  | 8.7                                      | 5  |
| SMBJ45A             | SMBJ45CA    | MV                        | CV | 45.0  | 50.00                          | 55.30                          | 1                                 | 72.7  | 8.3                                      | 5  |
| SMBJ48A             | SMBJ48CA    | MX                        | CX | 48.0  | 53.30                          | 58.90                          | 1                                 | 77.4  | 7.8                                      | 5  |
| SMBJ51A             | SMBJ51CA    | MZ                        | CZ | 51.0  | 56.70                          | 62.70                          | 1                                 | 82.4  | 7.3                                      | 5  |
| SMBJ54A             | SMBJ54CA    | NE                        | DE | 54.0  | 60.00                          | 66.30                          | 1                                 | 87.1  | 6.9                                      | 5  |
| SMBJ58A             | SMBJ58CA    | NG                        | DG | 58.0  | 64.40                          | 71.20                          | 1                                 | 93.6  | 6.5                                      | 5  |
| SMBJ60A             | SMBJ60CA    | NK                        | DK | 60.0  | 66.70                          | 73.70                          | 1                                 | 96.8  | 6.2                                      | 5  |
| SMBJ64A             | SMBJ64CA    | NM                        | DM | 64.0  | 71.10                          | 78.60                          | 1                                 | 103.0   | 5.9                                      | 5  |
| SMBJ70A             | SMBJ70CA    | NP                        | DP | 70.0  | 77.80                          | 86.00                          | 1                                 | 113.0   | 5.3                                      | 5  |
| SMBJ75A             | SMBJ75CA    | NR                        | DR | 75.0  | 83.30                          | 92.10                          | 1                                 | 121.0   | 5.0                                      | 5  |
| SMBJ78A             | SMBJ78CA    | NT                        | DT | 78.0  | 86.70                          | 95.80                          | 1                                 | 126.0   | 4.8                                      | 5  |
| SMBJ85A             | SMBJ85CA    | NV                        | DV | 85.0  | 94.40                          | 104.00                         | 1                                 | 137.0   | 4.4                                      | 5  |
| SMBJ90A             | SMBJ90CA    | NX                        | DX | 90.0  | 100.00                         | 111.00                         | 1                                 | 146.0   | 4.1                                      | 5  |
| SMBJ100A            | SMBJ100CA   | NZ                        | DZ | 100.0   | 111.00                         | 123.00                         | 1                                 | 162.0   | 3.7                                      | 5  |
| SMBJ110A            | SMBJ110CA   | PE                        | EE | 110.0   | 122.00                         | 135.00                         | 1                                 | 177.0   | 3.4                                      | 5  |
| SMBJ120A            | SMBJ120CA   | PG                        | EG | 120.0   | 133.00                         | 147.00                         | 1                                 | 193.0   | 3.1                                      | 5  |
| SMBJ130A            | SMBJ130CA   | PK                        | EK | 130.0   | 144.00                         | 159.00                         | 1                                 | 209.0   | 2.9                                      | 5  |
| SMBJ150A            | SMBJ150CA   | PM                        | EM | 150.0   | 167.00                         | 185.00                         | 1                                 | 243.0   | 2.5                                      | 5  |
| SMBJ160A            | SMBJ160CA   | PP                        | EP | 160.0   | 178.00                         | 197.00                         | 1                                 | 259.0   | 2.3                                      | 5  |
| SMBJ170A            | SMBJ170CA   | PR                        | ER | 170.0   | 189.00                         | 209.00                         | 1                                 | 275.0   | 2.2                                      | 5  |

NOTE: 1. Suffix C denotes Bi-direction device, Suffix A denotes the  $V_{BR}$  is  $\pm 5\%$  for parts without A, the  $V_{BR}$  is  $\pm 10\%$ .  
 2.  $V_{BR}$  measured with  $I_T$  Current pulse=300us.  
 3. For bidirectional type having  $V_{RWM}$  of 10 volts and less, the  $I_R$  limit is double.