

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

STAND-OFF VOLTAGE - **5.0** to **350** Volts  
POWER DISSIPATION - **600** WATTS

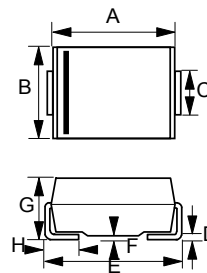
**FEATURES**

- 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

**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>   | 100         | 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 (Note 3)                             | V <sub>F</sub>     | SEE NOTE 3  | Volts |
| Typical Thermal Resistance (Note 4)   | R <sub>θJA</sub>   | 90          | °C/W  |
|   | R <sub>θJL</sub>   | 21          |       |
|   | R <sub>θJC</sub>   | 25          |       |
| 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.

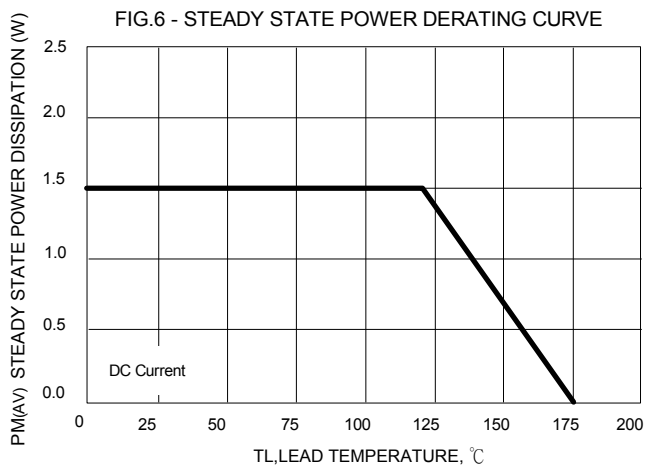
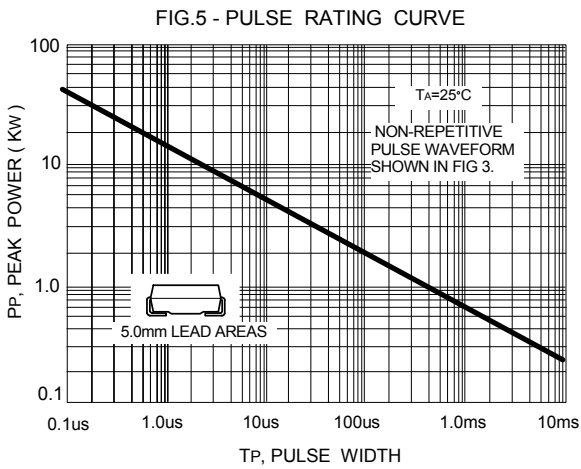
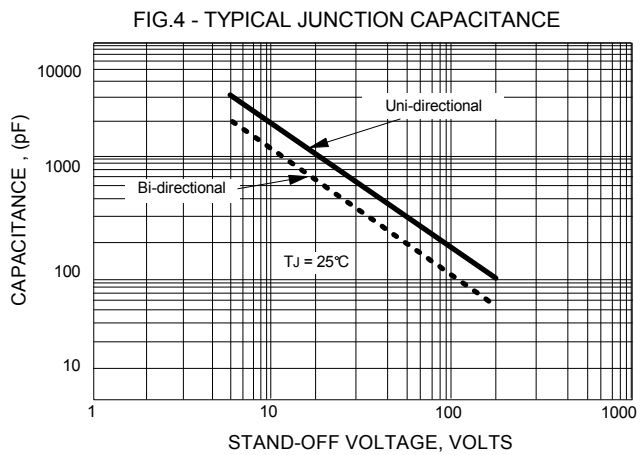
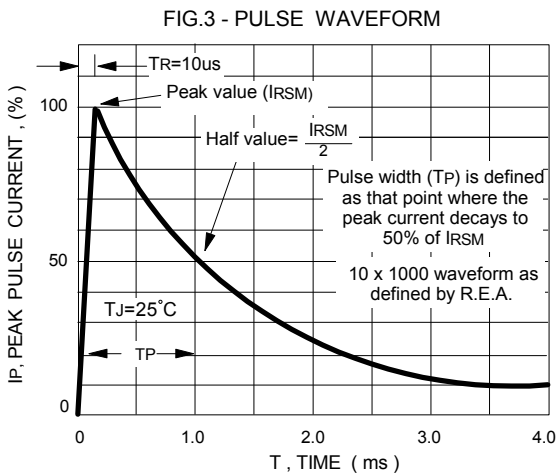
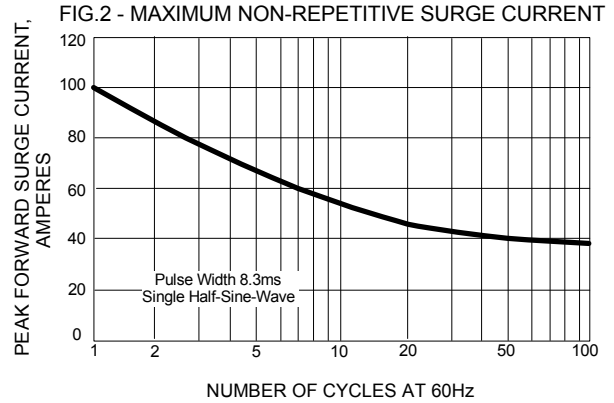
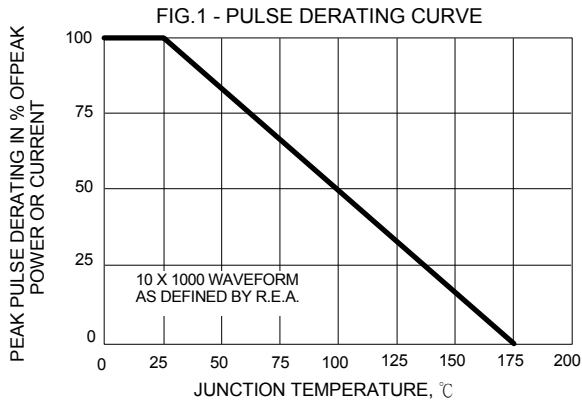
2. Only for unidirectional units.

3. V<sub>F</sub>= 3.5V on SMBJ5.0 thru SMBJ90A devices and V<sub>F</sub>= 5.0V on SMBJ100 thru SMBJ350A devices.

4. Thermal resistance from junction to ambient, lead and case.

REV. 10, Nov-2011, KSIB02

Datasheet.Support



| Device Uni-directional | Device Bi-directional | Device Marking code |      | Working Peak Reverse Voltage<br>V <sub>RWM</sub> (V) | Breakdown voltage VBR Volts |      |          | Maximum Reverse Voltage at I <sub>RSM</sub> (Clamping Voltage)<br>V <sub>RSM</sub> (V) | Maximum Reverse Surge Current<br>I <sub>RSM</sub> (A) | Maximum Reverse Leakage at V <sub>RWM</sub><br>IR (μA) |
|------------------------|-----------------------|---------------------|------|--|-----------------------------|------|----------|--|---|--|
|                        |                       | (UNI)               | (BI) |  | Min.                        | Max. | @IT( mA) |  |   |  |
| SMBJ5.0A               | SMBJ5.0CA             | KE                  | AE   | 5.0  | 6.40                        | 7.07 | 10       | 9.2  | 65.2  | 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 | 1.0      | 12.9   | 46.5  | 100  |
| SMBJ8.0A               | SMBJ8.0CA             | KR                  | AR   | 8.0  | 8.89                        | 9.83 | 1.0      | 13.6   | 44.1  | 50.0   |
| SMBJ8.5A               | SMBJ8.5CA             | KT                  | AT   | 8.5  | 9.44                        | 10.4 | 1.0      | 14.4   | 41.7  | 20.0   |
| SMBJ9.0A               | SMBJ9.0CA             | KV                  | AV   | 9.0  | 10.0                        | 11.1 | 1.0      | 15.4   | 39.0  | 10.0   |
| SMBJ10A                | SMBJ10CA              | KX                  | AX   | 10.0   | 11.1                        | 12.3 | 1.0      | 17.0   | 35.3  | 5.0  |
| SMBJ11A                | SMBJ11CA              | KZ                  | AZ   | 11.0   | 12.2                        | 13.5 | 1.0      | 18.2   | 33.0  | 5.0  |
| SMBJ12A                | SMBJ12CA              | LE                  | BE   | 12.0   | 13.3                        | 14.7 | 1.0      | 19.9   | 30.2  | 5.0  |
| SMBJ13A                | SMBJ13CA              | LG                  | BG   | 13.0   | 14.4                        | 15.9 | 1.0      | 21.5   | 27.9  | 5.0  |
| SMBJ14A                | SMBJ14CA              | LK                  | BK   | 14.0   | 15.6                        | 17.2 | 1.0      | 23.2   | 25.8  | 5.0  |
| SMBJ15A                | SMBJ15CA              | LM                  | BM   | 15.0   | 16.7                        | 18.5 | 1.0      | 24.4   | 24.0  | 5.0  |
| SMBJ16A                | SMBJ16CA              | LP                  | BP   | 16.0   | 17.8                        | 19.7 | 1.0      | 26.0   | 23.1  | 5.0  |
| SMBJ17A                | SMBJ17CA              | LR                  | BR   | 17.0   | 18.9                        | 20.9 | 1.0      | 27.6   | 21.7  | 5.0  |
| SMBJ18A                | SMBJ18CA              | LT                  | BT   | 18.0   | 20.0                        | 22.1 | 1.0      | 29.2   | 20.5  | 5.0  |
| SMBJ20A                | SMBJ20CA              | LV                  | BV   | 20.0   | 22.2                        | 24.5 | 1.0      | 32.4   | 18.5  | 5.0  |
| SMBJ22A                | SMBJ22CA              | LX                  | BX   | 22.0   | 24.4                        | 27.0 | 1.0      | 35.5   | 16.9  | 5.0  |
| SMBJ24A                | SMBJ24CA              | LZ                  | BZ   | 24.0   | 26.7                        | 29.5 | 1.0      | 38.9   | 15.4  | 5.0  |
| SMBJ26A                | SMBJ26CA              | ME                  | CE   | 26.0   | 28.9                        | 31.9 | 1.0      | 42.1   | 14.2  | 5.0  |
| SMBJ28A                | SMBJ28CA              | MG                  | CG   | 28.0   | 31.1                        | 34.4 | 1.0      | 45.4   | 13.2  | 5.0  |
| SMBJ30A                | SMBJ30CA              | MK                  | CK   | 30.0   | 33.3                        | 36.8 | 1.0      | 48.4   | 12.4  | 5.0  |
| SMBJ33A                | SMBJ33CA              | MM                  | CM   | 33.0   | 36.7                        | 40.6 | 1.0      | 53.3   | 11.3  | 5.0  |
| SMBJ36A                | SMBJ36CA              | MP                  | CP   | 36.0   | 40.0                        | 44.2 | 1.0      | 58.1   | 10.3  | 5.0  |
| SMBJ40A                | SMBJ40CA              | MR                  | CR   | 40.0   | 44.4                        | 49.1 | 1.0      | 64.5   | 9.3   | 5.0  |
| SMBJ43A                | SMBJ43CA              | MT                  | CT   | 43.0   | 47.8                        | 52.8 | 1.0      | 69.4   | 8.6   | 5.0  |
| SMBJ45A                | SMBJ45CA              | MV                  | CV   | 45.0   | 50.0                        | 55.3 | 1.0      | 72.7   | 8.3   | 5.0  |
| SMBJ48A                | SMBJ48CA              | MX                  | CX   | 48.0   | 53.3                        | 58.9 | 1.0      | 77.4   | 7.7   | 5.0  |
| SMBJ51A                | SMBJ51CA              | MZ                  | CZ   | 51.0   | 56.7                        | 62.7 | 1.0      | 82.4   | 7.3   | 5.0  |
| SMBJ54A                | SMBJ54CA              | NE                  | DE   | 54.0   | 60.0                        | 66.3 | 1.0      | 87.1   | 6.9   | 5.0  |
| SMBJ58A                | SMBJ58CA              | NG                  | DG   | 58.0   | 64.4                        | 71.2 | 1.0      | 93.6   | 6.4   | 5.0  |
| SMBJ60A                | SMBJ60CA              | NK                  | DK   | 60.0   | 66.7                        | 73.7 | 1.0      | 96.8   | 6.2   | 5.0  |
| SMBJ64A                | SMBJ64CA              | NM                  | DM   | 64.0   | 71.1                        | 78.6 | 1.0      | 103  | 5.8   | 5.0  |
| SMBJ70A                | SMBJ70CA              | NP                  | DP   | 70.0   | 77.8                        | 86.0 | 1.0      | 113  | 5.3   | 5.0  |
| SMBJ75A                | SMBJ75CA              | NR                  | DR   | 75.0   | 83.3                        | 92.1 | 1.0      | 121  | 4.9   | 5.0  |
| SMBJ78A                | SMBJ78CA              | NT                  | DT   | 78.0   | 86.7                        | 95.8 | 1.0      | 126  | 4.7   | 5.0  |
| SMBJ85A                | SMBJ85CA              | NV                  | DV   | 85.0   | 94.4                        | 104  | 1.0      | 137  | 4.4   | 5.0  |
| SMBJ90A                | SMBJ90CA              | NX                  | DX   | 90.0   | 100                         | 111  | 1.0      | 146  | 4.1   | 5.0  |
| SMBJ100A               | SMBJ100CA             | NZ                  | DZ   | 100.0  | 111                         | 123  | 1.0      | 162  | 3.7   | 5.0  |

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|------------------------|-----------------------|---------------------|------|--|-----------------------------|------|----------|--|---|--|
|                        |                       | (UNI)               | (BI) |  | Min.                        | Max. | @IT( mA) |  |   |  |
| SMBJ110A               | SMBJ110CA             | PE                  | EE   | 110.0  | 122                         | 135  | 1.0      | 177  | 3.4   | 5.0  |
| SMBJ120A               | SMBJ120CA             | PG                  | EG   | 120.0  | 133                         | 147  | 1.0      | 193  | 3.1   | 5.0  |
| SMBJ130A               | SMBJ130CA             | PK                  | EK   | 130.0  | 144                         | 159  | 1.0      | 209  | 2.9   | 5.0  |
| SMBJ150A               | SMBJ150CA             | PM                  | EM   | 150.0  | 167                         | 185  | 1.0      | 243  | 2.5   | 5.0  |
| SMBJ160A               | SMBJ160CA             | PP                  | EP   | 160.0  | 178                         | 197  | 1.0      | 259  | 2.3   | 5.0  |
| SMBJ170A               | SMBJ170CA             | PR                  | ER   | 170.0  | 189                         | 209  | 1.0      | 275  | 2.2   | 5.0  |
| SMBJ188A               | SMBJ188CA             | PT                  | ET   | 188.0  | 209                         | 231  | 1.0      | 328  | 1.83  | 5.0  |
| SMBJ200A               | SMBJ200CA             | PV                  | EV   | 200.0  | 224                         | 247  | 1.0      | 324  | 1.9   | 5.0  |
| SMBJ220A               | SMBJ220CA             | PX                  | EX   | 220.0  | 246                         | 272  | 1.0      | 356  | 1.7   | 5.0  |
| SMBJ350A               |                       | QG                  |      | 350.0  | 391                         | 432  | 1.0      | 567  | 1.1   | 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 .  
For Uni-directional devices VF max=3.5v at if=50 A ,0.5 sine wave of 8.3 msec .pulse width.

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