

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

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

FEATURES

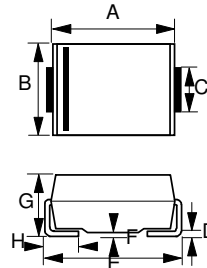
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min
- RoHS compliant

• Qualified to AEC-Q101 Rev_D

MECHANICAL DATA

- Case : Molded plastic
- Case Material: Molding compound, UL Flammability classification 94V-0, (No Br. Sb. Cl.) "Halogen-free".
- 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 _J = 25°C , TP = 1ms (Note 1) | P _{PK} | 600 | W |
| Peak Forward Surge Current 8.3ms single half sine-wave @ T _J = 25°C (Note 2) | I _{FSM} | 100 | A |
| Steady State Power Dissipation at T _L = 120°C lead lengths 0.375" (9.5mm) , see fig.4 Without Heatshink | P _{M(AV)} | 1.5 | W |
| Maximum Instantaneous forward voltage at 16A (Note 2, 3) | V _F | 2.5 | V |
| Typical Thermal Resistance (Note 4) | R _{θJA} R _{θJL} R _{θJC} | 90 21 25 | °C/W |
| Operating Temperature Range | T _J | -55 to +175 | °C |
| Storage Temperature Range | T _{STG} | -55 to +175 | °C |

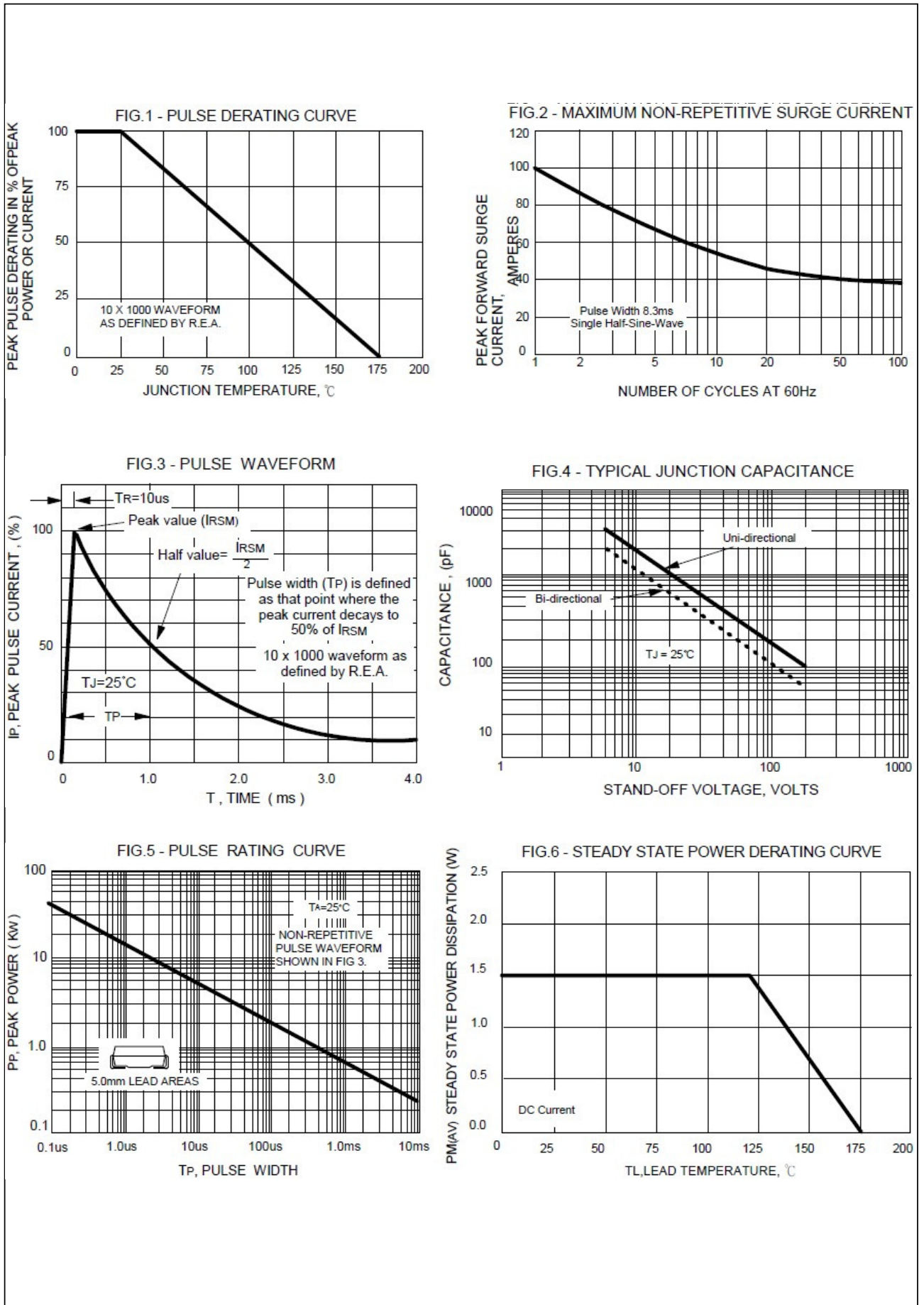
NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above T_J = 25 °C per fig.1.

2. Only for unidirectional units.

3. V_F max=2.5V at I_F=16 A 300us square wave pulse.

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

REV. 14, Feb-2016, KSIB02



| Device Uni-directional | Device Bi-directional | Device Marking code | | Working Peak Reverse Voltage V _{RWM} (V) | Breakdown voltage VBR Volts | | | Maximum Reverse Voltage at I _{RSM} (Clamping Voltage) V _{RSM} (V) | Maximum Reverse Surge Current I _{RSM} (A) | Maximum Reverse Leakage at V _{RWM} 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 | 0.5 |
| SMBJ12A | SMBJ12CA | LE | BE | 12.0 | 13.3 | 14.7 | 1.0 | 19.9 | 30.2 | 0.5 |
| SMBJ13A | SMBJ13CA | LG | BG | 13.0 | 14.4 | 15.9 | 1.0 | 21.5 | 27.9 | 0.5 |
| SMBJ14A | SMBJ14CA | LK | BK | 14.0 | 15.6 | 17.2 | 1.0 | 23.2 | 25.8 | 0.5 |
| SMBJ15A | SMBJ15CA | LM | BM | 15.0 | 16.7 | 18.5 | 1.0 | 24.4 | 24.0 | 0.5 |
| SMBJ16A | SMBJ16CA | LP | BP | 16.0 | 17.8 | 19.7 | 1.0 | 26.0 | 23.1 | 0.5 |
| SMBJ17A | SMBJ17CA | LR | BR | 17.0 | 18.9 | 20.9 | 1.0 | 27.6 | 21.7 | 0.5 |
| SMBJ18A | SMBJ18CA | LT | BT | 18.0 | 20.0 | 22.1 | 1.0 | 29.2 | 20.5 | 0.5 |
| SMBJ20A | SMBJ20CA | LV | BV | 20.0 | 22.2 | 24.5 | 1.0 | 32.4 | 18.5 | 0.5 |
| SMBJ22A | SMBJ22CA | LX | BX | 22.0 | 24.4 | 27.0 | 1.0 | 35.5 | 16.9 | 0.5 |
| SMBJ24A | SMBJ24CA | LZ | BZ | 24.0 | 26.7 | 29.5 | 1.0 | 38.9 | 15.4 | 0.5 |
| SMBJ26A | SMBJ26CA | ME | CE | 26.0 | 28.9 | 31.9 | 1.0 | 42.1 | 14.2 | 0.5 |
| SMBJ28A | SMBJ28CA | MG | CG | 28.0 | 31.1 | 34.4 | 1.0 | 45.4 | 13.2 | 0.5 |
| SMBJ30A | SMBJ30CA | MK | CK | 30.0 | 33.3 | 36.8 | 1.0 | 48.4 | 12.4 | 0.5 |
| SMBJ33A | SMBJ33CA | MM | CM | 33.0 | 36.7 | 40.6 | 1.0 | 53.3 | 11.3 | 0.5 |
| SMBJ36A | SMBJ36CA | MP | CP | 36.0 | 40.0 | 44.2 | 1.0 | 58.1 | 10.3 | 0.5 |
| SMBJ40A | SMBJ40CA | MR | CR | 40.0 | 44.4 | 49.1 | 1.0 | 64.5 | 9.3 | 0.5 |
| SMBJ43A | SMBJ43CA | MT | CT | 43.0 | 47.8 | 52.8 | 1.0 | 69.4 | 8.6 | 0.5 |
| SMBJ45A | SMBJ45CA | MV | CV | 45.0 | 50.0 | 55.3 | 1.0 | 72.7 | 8.3 | 0.5 |
| SMBJ48A | SMBJ48CA | MX | CX | 48.0 | 53.3 | 58.9 | 1.0 | 77.4 | 7.7 | 0.5 |
| SMBJ51A | SMBJ51CA | MZ | CZ | 51.0 | 56.7 | 62.7 | 1.0 | 82.4 | 7.3 | 0.5 |
| SMBJ54A | SMBJ54CA | NE | DE | 54.0 | 60.0 | 66.3 | 1.0 | 87.1 | 6.9 | 0.5 |
| SMBJ58A | SMBJ58CA | NG | DG | 58.0 | 64.4 | 71.2 | 1.0 | 93.6 | 6.4 | 0.5 |
| SMBJ60A | SMBJ60CA | NK | DK | 60.0 | 66.7 | 73.7 | 1.0 | 96.8 | 6.2 | 0.5 |
| SMBJ64A | SMBJ64CA | NM | DM | 64.0 | 71.1 | 78.6 | 1.0 | 103 | 5.8 | 0.5 |
| SMBJ70A | SMBJ70CA | NP | DP | 70.0 | 77.8 | 86.0 | 1.0 | 113 | 5.3 | 0.5 |
| SMBJ75A | SMBJ75CA | NR | DR | 75.0 | 83.3 | 92.1 | 1.0 | 121 | 4.9 | 0.5 |
| SMBJ78A | SMBJ78CA | NT | DT | 78.0 | 86.7 | 95.8 | 1.0 | 126 | 4.7 | 0.5 |
| SMBJ85A | SMBJ85CA | NV | DV | 85.0 | 94.4 | 104 | 1.0 | 137 | 4.4 | 0.5 |
| SMBJ90A | SMBJ90CA | NX | DX | 90.0 | 100 | 111 | 1.0 | 146 | 4.1 | 0.5 |
| SMBJ100A | SMBJ100CA | NZ | DZ | 100.0 | 111 | 123 | 1.0 | 162 | 3.7 | 0.5 |

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

NOTE :

Suffix 'A ' denotes 5% tolerance device.

1) Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.

2. The IR limit is double for Bi-Directional devices.

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