

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

STAND-OFF VOLTAGE - **6.8 to 200** Volts
POWER DISSIPATION - **600** WATTS

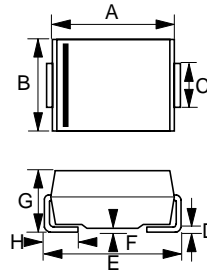
FEATURES

- 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 1.0ps 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 |

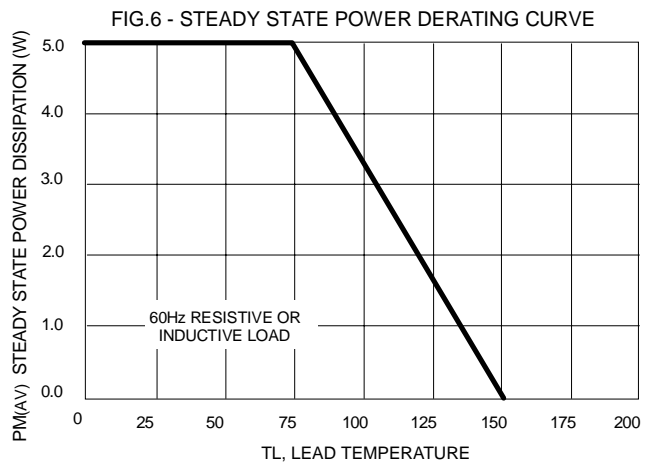
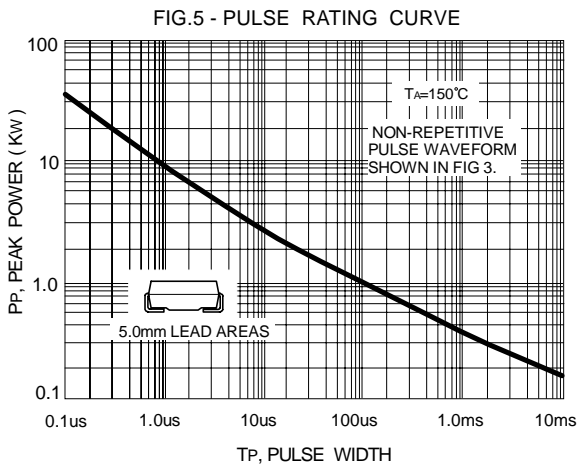
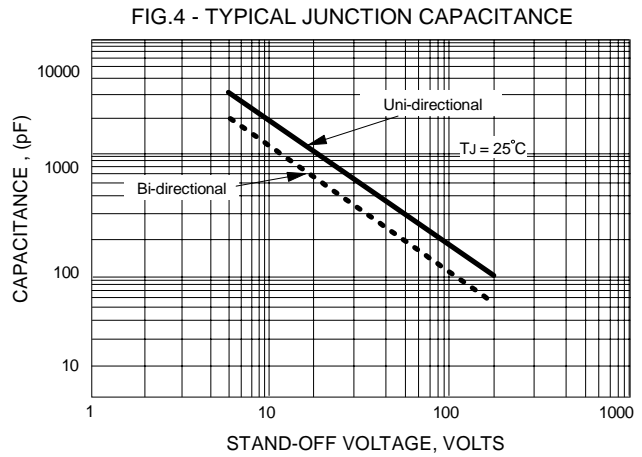
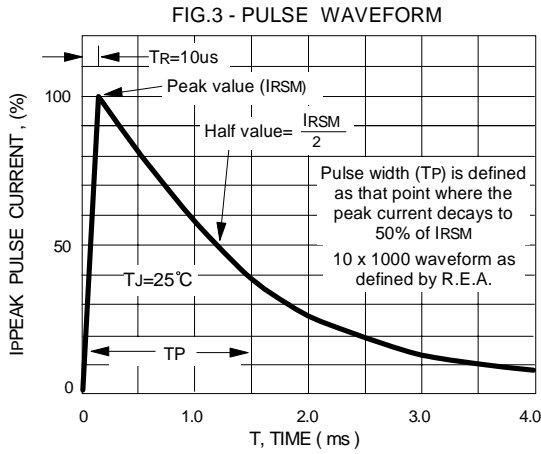
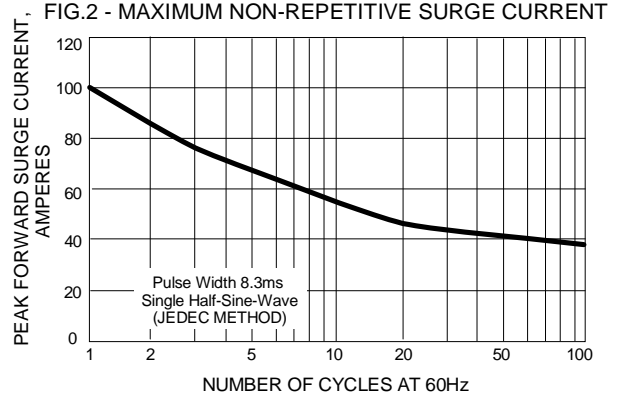
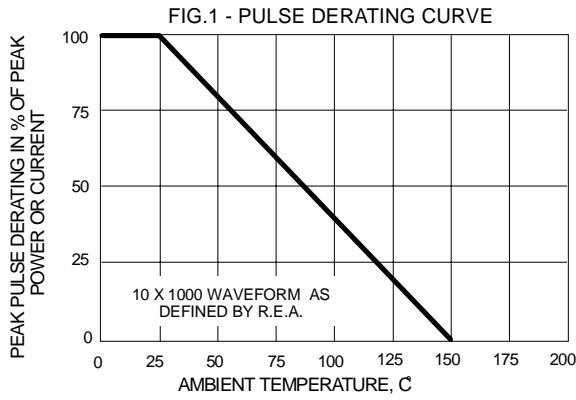
All Dimensions in millimeter

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 TA = 25°C, TP = 1ms (Note 1,2) | PPK | Minimum 600 | WATTS |
| Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD) | IFSM | 100 | AMPS. |
| Steady State Power Dissipation at TL = 75°C | PM(AV) | 5.0 | WATTS |
| Maximum Instantaneous forward voltage at 50A for unidirectional devices only (Note 3) | VF | SEE NOTE 4 | Volts |
| Operating Temperature Range | TJ | -55 to +150 | °C |
| Storage Temperature Range | TSTG | -55 to +175 | °C |

- NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above TA= 25°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. VF= 3.5V on SMB6.8 thru SMB90A devices and VF= 5.0V on SMB100 thru SMB200A devices.



| Device Uni-directional | Device Bi-directional | Device Marking code | | Breakdown voltage VBR Volts | | | Working Peak Reverse Voltage | Maximum Reverse Leakage at V _{RWM} | Maximum Reverse Surge Current | Maximum Reverse Voltage at I _{RSM} (Clamping Voltage) |
|------------------------|-----------------------|---------------------|------|-----------------------------|------|----------|------------------------------|---|-------------------------------|--|
| | | (UNI) | (BI) | Min. | Max. | @IT(mA) | V _{RWM} (Volts) | IR (uA) | I _{RSM} (Amps) | V _{RSM} (Volts) |
| SMB6.8 | SMB6.8C | KDK | KDM | 6.12 | 7.48 | 10.0 | 5.50 | 1000 | 55.6 | 10.8 |
| SMB6.8A | SMB6.8CA | KEK | KEM | 6.45 | 7.14 | 10.0 | 5.80 | 1000 | 57.1 | 10.5 |
| SMB7.5 | SMB7.5C | KFK | KFM | 6.75 | 8.25 | 10.0 | 6.05 | 500 | 51.3 | 11.7 |
| SMB7.5A | SMB7.5CA | KGK | KGM | 7.13 | 7.88 | 10.0 | 6.40 | 500 | 53.1 | 11.3 |
| SMB8.2 | SMB8.2C | KHK | KHM | 7.38 | 9.02 | 10.0 | 6.63 | 200 | 48.0 | 12.5 |
| SMB8.2A | SMB8.2CA | KKK | KKM | 7.79 | 8.61 | 10.0 | 7.02 | 200 | 49.6 | 12.1 |
| SMB9.1 | SMB9.1C | KLK | KLM | 8.19 | 10.0 | 10.0 | 7.37 | 50.0 | 44.0 | 13.8 |
| SMB9.1A | SMB9.1CA | KMK | KMM | 8.65 | 9.55 | 10.0 | 7.78 | 50.0 | 44.8 | 13.4 |
| SMB10 | SMB10C | KNK | KNM | 9.00 | 11.0 | 1.0 | 8.10 | 20.0 | 40.0 | 15.0 |
| SMB10A | SMB10CA | KPK | KPM | 9.50 | 10.5 | 1.0 | 8.55 | 20.0 | 41.4 | 14.5 |
| SMB11 | SMB11C | KQK | KQM | 9.90 | 12.1 | 1.0 | 8.92 | 5.0 | 37.0 | 16.2 |
| SMB11A | SMB11CA | KRK | KRM | 10.5 | 11.6 | 1.0 | 9.40 | 5.0 | 38.5 | 15.6 |
| SMB12 | SMB12C | KSK | KSM | 10.8 | 13.2 | 1.0 | 9.72 | 5.0 | 34.7 | 17.3 |
| SMB12A | SMB12CA | KTK | KTM | 11.4 | 12.6 | 1.0 | 10.2 | 5.0 | 35.9 | 16.7 |
| SMB13 | SMB13C | KUK | KUM | 11.7 | 14.3 | 1.0 | 10.5 | 5.0 | 31.6 | 19.0 |
| SMB13A | SMB13CA | KVK | KVM | 12.4 | 13.7 | 1.0 | 11.1 | 5.0 | 33.0 | 18.2 |
| SMB15 | SMB15C | KWK | KWM | 13.5 | 16.3 | 1.0 | 12.1 | 5.0 | 27.3 | 22.0 |
| SMB15A | SMB15CA | KXK | KXM | 14.3 | 15.8 | 1.0 | 12.8 | 5.0 | 28.3 | 21.2 |
| SMB16 | SMB16C | KYK | KYM | 14.4 | 17.6 | 1.0 | 12.9 | 5.0 | 25.5 | 23.5 |
| SMB16A | SMB16CA | KZK | KZM | 15.2 | 16.8 | 1.0 | 13.6 | 5.0 | 26.7 | 22.5 |
| SMB18 | SMB18C | LDK | LDM | 16.2 | 19.8 | 1.0 | 14.5 | 5.0 | 22.6 | 26.5 |
| SMB18A | SMB18CA | LEK | LEM | 17.1 | 18.9 | 1.0 | 15.3 | 5.0 | 23.5 | 25.5 |
| SMB20 | SMB20C | LFK | LFM | 18.0 | 22.0 | 1.0 | 16.2 | 5.0 | 20.6 | 29.1 |
| SMB20A | SMB20CA | LGK | LGM | 19.0 | 21.0 | 1.0 | 17.1 | 5.0 | 21.7 | 27.7 |
| SMB22 | SMB22C | LHK | LHM | 19.8 | 24.2 | 1.0 | 17.8 | 5.0 | 18.8 | 31.9 |
| SMB22A | SMB22CA | LKK | LKM | 20.9 | 23.1 | 1.0 | 18.8 | 5.0 | 19.6 | 30.6 |
| SMB24 | SMB24C | LLK | LLM | 21.6 | 26.4 | 1.0 | 19.4 | 5.0 | 17.3 | 34.7 |
| SMB24A | SMB24CA | LMK | LMM | 22.8 | 25.2 | 1.0 | 20.5 | 5.0 | 18.1 | 33.2 |
| SMB27 | SMB27C | LNK | LNM | 24.3 | 29.7 | 1.0 | 21.8 | 5.0 | 15.3 | 39.1 |
| SMB27A | SMB27CA | LPK | LPM | 25.7 | 28.4 | 1.0 | 23.1 | 5.0 | 16.0 | 37.5 |
| SMB30 | SMB30C | LQK | LQM | 27.0 | 33.0 | 1.0 | 24.3 | 5.0 | 13.8 | 43.5 |
| SMB30A | SMB30CA | LRK | LRM | 28.5 | 31.5 | 1.0 | 25.6 | 5.0 | 14.4 | 41.4 |
| SMB33 | SMB33C | LSK | LSM | 29.7 | 36.3 | 1.0 | 26.8 | 5.0 | 12.6 | 47.7 |
| SMB33A | SMB33CA | LTK | LTM | 31.4 | 34.7 | 1.0 | 28.2 | 5.0 | 13.2 | 45.7 |
| SMB36 | SMB36C | LUK | LUM | 32.4 | 39.6 | 1.0 | 29.1 | 5.0 | 11.6 | 52.0 |
| SMB36A | SMB36CA | LVK | LVM | 34.2 | 37.8 | 1.0 | 30.8 | 5.0 | 12.0 | 49.9 |
| SMB39 | SMB39C | LWK | LWM | 35.1 | 42.9 | 1.0 | 31.6 | 5.0 | 10.6 | 56.4 |
| SMB39A | SMB39CA | LXK | LXM | 37.1 | 41.0 | 1.0 | 33.3 | 5.0 | 11.2 | 53.9 |
| SMB43 | SMB43C | LYK | LYM | 38.7 | 47.3 | 1.0 | 34.8 | 5.0 | 9.6 | 61.9 |
| SMB43A | SMB43CA | LZK | LZM | 40.9 | 45.2 | 1.0 | 36.8 | 5.0 | 10.1 | 59.3 |

| Device Uni-directional | Device Bi-directional | Device Marking code | | Breakdown voltage VBR Volts | | | Working PeakReverse Voltage | Maximum Reverse Leakage at VRWM | Maximum Reverse Surge Current | Maximum Reverse Voltage at IRSM (Clamping Voltage) |
|------------------------|-----------------------|---------------------|------|-----------------------------|------|----------|-----------------------------|---------------------------------|-------------------------------|--|
| | | (UNI) | (BI) | Min. | Max. | @IT(mA) | VRWM(Volts) | IR (uA) | IRSM(Amps) | VRSM(Volts) |
| SMB47 | SMB47C | MDK | MDM | 42.3 | 51.7 | 1.0 | 38.1 | 5.0 | 8.85 | 67.8 |
| SMB47A | SMB47CA | MEK | MEM | 44.7 | 49.4 | 1.0 | 40.2 | 5.0 | 9.26 | 64.8 |
| SMB51 | SMB45C | MFK | MFM | 45.9 | 56.1 | 1.0 | 41.3 | 5.0 | 8.16 | 73.5 |
| SMB51A | SMB45CA | MGK | MGM | 48.5 | 53.6 | 1.0 | 43.6 | 5.0 | 8.56 | 70.1 |
| SMB56 | SMB56C | MHK | MHM | 50.4 | 61.6 | 1.0 | 45.4 | 5.0 | 7.45 | 80.5 |
| SMB56A | SMB56CA | MKK | MKM | 53.2 | 58.8 | 1.0 | 47.8 | 5.0 | 7.79 | 77.0 |
| SMB62 | SMB62C | MLK | MLM | 55.8 | 68.2 | 1.0 | 50.2 | 5.0 | 6.74 | 89.0 |
| SMB62A | SMB62CA | MMK | MMM | 58.9 | 65.1 | 1.0 | 53.0 | 5.0 | 7.06 | 85.0 |
| SMB68 | SMB68C | MNK | MNM | 61.2 | 74.8 | 1.0 | 55.1 | 5.0 | 6.12 | 98.0 |
| SMB68A | SMB68CA | MPK | MPM | 64.6 | 71.4 | 1.0 | 58.1 | 5.0 | 6.52 | 92.0 |
| SMB75 | SMB75C | MQK | MQM | 67.5 | 82.5 | 1.0 | 60.7 | 5.0 | 5.56 | 108 |
| SMB75A | SMB75CA | MRK | MRM | 71.3 | 78.8 | 1.0 | 64.1 | 5.0 | 5.83 | 103 |
| SMB82 | SMB82C | MSK | MSM | 73.8 | 90.2 | 1.0 | 66.4 | 5.0 | 5.08 | 118 |
| SMB82A | SMB82CA | MTK | MTM | 77.8 | 86.0 | 1.0 | 70.1 | 5.0 | 5.31 | 113 |
| SMB91 | SMB91C | MUK | MUM | 81.9 | 100 | 1.0 | 73.7 | 5.0 | 4.58 | 131 |
| SMB91A | SMB91CA | MVK | MVM | 86.5 | 95.5 | 1.0 | 77.8 | 5.0 | 4.80 | 125 |
| SMB100 | SMB100C | MWK | MWM | 90.0 | 110 | 1.0 | 81.0 | 5.0 | 4.17 | 144 |
| SMB100A | SMB100CA | MXK | MXM | 95.0 | 105 | 1.0 | 85.5 | 5.0 | 4.38 | 137 |
| SMB110 | SMB110C | MYK | MYM | 99.0 | 121 | 1.0 | 89.2 | 5.0 | 3.80 | 158 |
| SMB110A | SMB110CA | MZK | MZM | 105 | 116 | 1.0 | 94.0 | 5.0 | 3.95 | 152 |
| SMB120 | SMB120C | NDK | NDM | 108 | 132 | 1.0 | 97.2 | 5.0 | 3.47 | 173 |
| SMB120A | SMB120CA | NEK | NEM | 114 | 126 | 1.0 | 102 | 5.0 | 3.64 | 165 |
| SMB130 | SMB130C | NFK | NFM | 117 | 143 | 1.0 | 105 | 5.0 | 3.21 | 187 |
| SMB130A | SMB130CA | NGK | NGM | 124 | 137 | 1.0 | 111 | 5.0 | 3.35 | 179 |
| SMB150 | SMB150C | NHK | NHM | 135 | 165 | 1.0 | 121 | 5.0 | 2.79 | 215 |
| SMB150A | SMB150CA | NKK | NKM | 143 | 158 | 1.0 | 128 | 5.0 | 2.90 | 207 |
| SMB160 | SMB160C | NLK | NLM | 144 | 176 | 1.0 | 130 | 5.0 | 2.61 | 230 |
| SMB160A | SMB160CA | NMK | NMM | 152 | 168 | 1.0 | 136 | 5.0 | 2.74 | 219 |
| SMB170 | SMB170C | NNK | NNM | 153 | 187 | 1.0 | 138 | 5.0 | 2.46 | 244 |
| SMB170A | SMB170CA | NPK | NPM | 162 | 179 | 1.0 | 145 | 5.0 | 2.56 | 234 |
| SMB180 | SMB180C | NQK | NQM | 162 | 198 | 1.0 | 146 | 5.0 | 2.33 | 258 |
| SMB180A | SMB180CA | NRK | NRM | 171 | 189 | 1.0 | 154 | 5.0 | 2.44 | 246 |
| SMB200 | SMB200C | NSK | NSM | 180 | 220 | 1.0 | 162 | 5.0 | 2.09 | 287 |
| SMB200A | SMB200CA | NTK | NTM | 190 | 210 | 1.0 | 171 | 5.0 | 2.19 | 274 |

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 .