

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

STAND-OFF VOLTAGE - **5.0** to **170** Volts
POWER DISSIPATION - **1500** WATTS

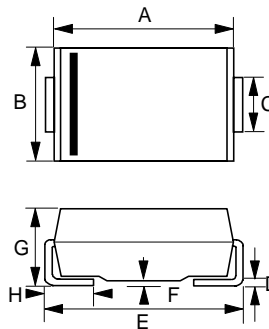
FEATURES

- 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,form 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 : 0.007 ounces, 0.21 gram

SMC



| SMC | | |
|------|------|------|
| DIM. | MIN. | MAX. |
| A | 6.60 | 7.11 |
| B | 5.59 | 6.22 |
| C | 2.92 | 3.18 |
| D | 0.15 | 0.31 |
| E | 7.75 | 8.13 |
| 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 1500 | WATTS |
| Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD) | IFSM | 200 | AMPS. |
| Steady State Power Dissipation at TL = 75°C | PM(AV) | 5.0 | WATTS |
| Maximum Instantaneous forward voltage at 100A 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 |

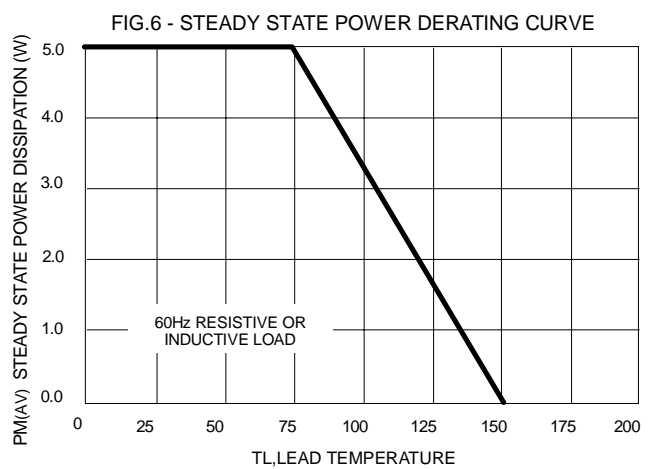
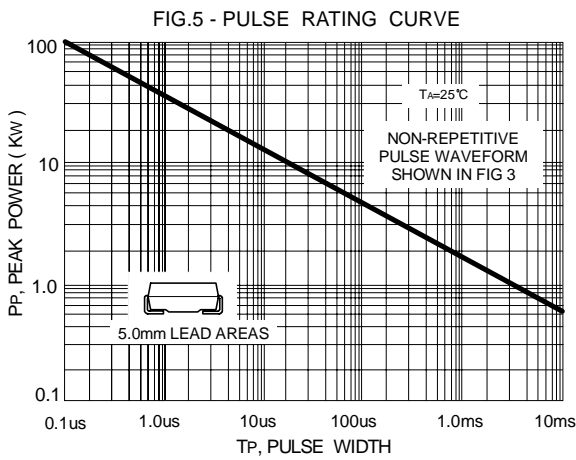
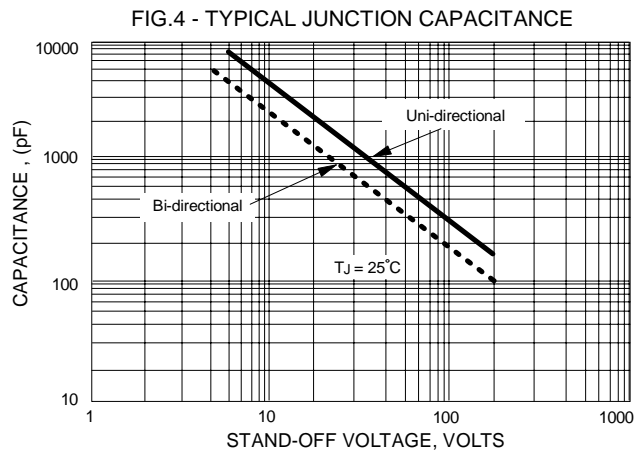
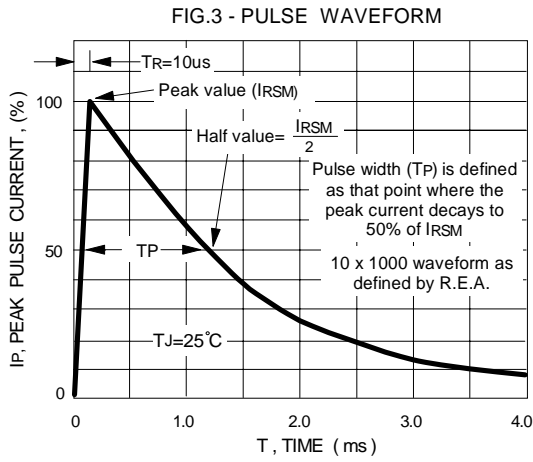
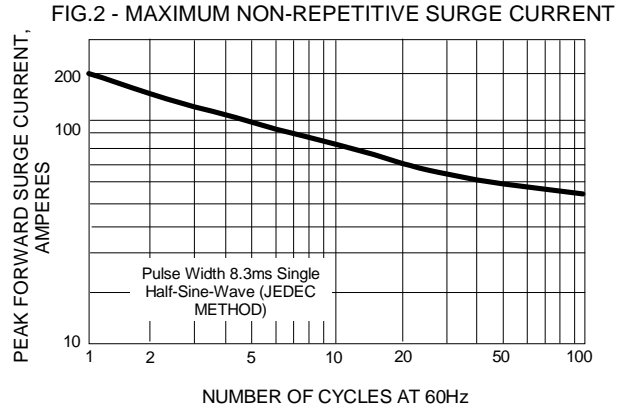
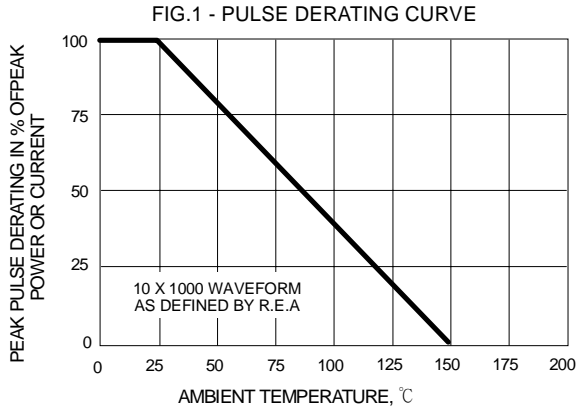
NOTES : 1. Non-repetitive current pulse, per fig. 3 and derated above TA= 25°C per fig.1.

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 SMCJ5.0 thru SMCJ90A devices and VF= 5.0V on SMCJ100 thru SMCJ170A devices.

REV. 2, 01-Dec-2000, KSIC02



| Device Uni-directional | Device Bi-directional | Device Marking code | | Working Peak Reverse Voltage | Breakdown voltage VBR Volts | | | Maximum Reverse Voltage at IRSM (Clamping Voltage) | Maximum Reverse Surge Current | Maximum Reverse Leakage at VRWM |
|------------------------|-----------------------|---------------------|------|------------------------------|-----------------------------|-------|------|--|-------------------------------|---------------------------------|
| | | (UNI) | (BI) | | VRWM(Volts) | Min. | Max. | | | |
| SMCJ5.0 | SMCJ5.0C | GDD | BDD | 5.0 | 6.40 | 7.55 | 10 | 9.6 | 156.3 | 1000 |
| SMCJ5.0A | SMCJ5.0CA | GDE | BDE | 5.0 | 6.40 | 7.23 | 10 | 9.2 | 163.0 | 1000 |
| SMCJ6.0 | SMCJ6.0C | GDF | BDF | 6.0 | 6.67 | 8.45 | 10 | 11.4 | 131.6 | 1000 |
| SMCJ6.0A | SMCJ6.0CA | GDG | BDG | 6.0 | 6.67 | 7.67 | 10 | 10.3 | 145.6 | 1000 |
| SMCJ6.5 | SMCJ6.5C | GDH | BDH | 6.5 | 7.22 | 9.14 | 10 | 12.3 | 122.0 | 500 |
| SMCJ6.5A | SMCJ6.5CA | GDK | BDK | 6.5 | 7.22 | 8.30 | 10 | 11.2 | 133.9 | 500 |
| SMCJ7.0 | SMCJ7.0C | GDL | BDL | 7.0 | 7.78 | 9.86 | 10 | 13.3 | 112.8 | 200 |
| SMCJ7.0A | SMCJ7.0CA | GDM | BDM | 7.0 | 7.78 | 8.95 | 10 | 12.0 | 125.0 | 200 |
| SMCJ7.5 | SMCJ7.5C | GDN | BDN | 7.5 | 8.33 | 10.8 | 1.0 | 14.3 | 104.9 | 100 |
| SMCJ7.5A | SMCJ7.5CA | GDP | BDP | 7.5 | 8.33 | 9.58 | 1.0 | 12.9 | 116.3 | 100 |
| SMCJ8.0 | SMCJ8.0C | GDQ | BDQ | 8.0 | 8.89 | 11.3 | 1.0 | 15.0 | 100.0 | 50.0 |
| SMCJ8.0A | SMCJ8.0CA | GDR | BDR | 8.0 | 8.89 | 10.20 | 1.0 | 13.6 | 110.3 | 50.0 |
| SMCJ8.5 | SMCJ8.5C | GDS | BDS | 8.5 | 9.44 | 11.9 | 1.0 | 15.9 | 95.3 | 20.0 |
| SMCJ8.5A | SMCJ8.5CA | GDT | BDT | 8.5 | 9.44 | 10.8 | 1.0 | 14.4 | 104.2 | 20.0 |
| SMCJ9.0 | SMCJ9.0C | GDU | BDU | 9.0 | 10.0 | 12.8 | 1.0 | 16.9 | 88.7 | 10.0 |
| SMCJ9.0A | SMCJ9.0CA | GDV | BDV | 9.0 | 10.0 | 11.5 | 1.0 | 15.4 | 97.4 | 10.0 |
| SMCJ10 | SMCJ10C | GDW | BDW | 10 | 11.1 | 14.1 | 1.0 | 18.8 | 79.8 | 5.0 |
| SMCJ10A | SMCJ10CA | GDX | BDX | 10 | 11.1 | 12.8 | 1.0 | 17.0 | 88.2 | 5.0 |
| SMCJ11 | SMCJ11C | GDY | BDY | 11 | 12.2 | 15.4 | 1.0 | 20.1 | 74.6 | 5.0 |
| SMCJ11A | SMCJ11CA | GDZ | BDZ | 11 | 12.2 | 14.4 | 1.0 | 18.2 | 82.4 | 5.0 |
| SMCJ12 | SMCJ12C | GED | BED | 12 | 13.3 | 16.9 | 1.0 | 22.0 | 68.2 | 5.0 |
| SMCJ12A | SMCJ12CA | GEE | BEE | 12 | 13.3 | 15.3 | 1.0 | 19.9 | 75.3 | 5.0 |
| SMCJ13 | SMCJ13C | GEF | BEF | 13 | 14.4 | 18.2 | 1.0 | 23.8 | 63.0 | 5.0 |
| SMCJ13A | SMCJ13CA | GEG | BEG | 13 | 14.4 | 16.5 | 1.0 | 21.5 | 69.7 | 5.0 |
| SMCJ14 | SMCJ14C | GEH | BEH | 14 | 15.6 | 19.8 | 1.0 | 25.8 | 58.1 | 5.0 |
| SMCJ14A | SMCJ14CA | GEK | BEK | 14 | 15.6 | 17.9 | 1.0 | 23.2 | 64.7 | 5.0 |
| SMCJ15 | SMCJ15C | GEL | BEL | 15 | 16.7 | 21.1 | 1.0 | 26.9 | 55.8 | 5.0 |
| SMCJ15A | SMCJ15CA | GEM | BEM | 15 | 16.7 | 19.2 | 1.0 | 24.4 | 61.5 | 5.0 |
| SMCJ16 | SMCJ16C | GEN | BEN | 16 | 17.8 | 22.6 | 1.0 | 28.8 | 52.1 | 5.0 |
| SMCJ16A | SMCJ16CA | GEP | BEP | 16 | 17.8 | 20.5 | 1.0 | 26.0 | 57.7 | 5.0 |
| SMCJ17 | SMCJ17C | GEQ | BEQ | 17 | 18.9 | 23.9 | 1.0 | 30.5 | 49.2 | 5.0 |
| SMCJ17A | SMCJ17CA | GER | BER | 17 | 18.9 | 21.7 | 1.0 | 27.6 | 53.3 | 5.0 |
| SMCJ18 | SMCJ18C | GES | BES | 18 | 20.0 | 25.3 | 1.0 | 32.2 | 46.6 | 5.0 |
| SMCJ18A | SMCJ18CA | GET | BET | 18 | 20.0 | 23.3 | 1.0 | 29.2 | 51.4 | 5.0 |
| SMCJ20 | SMCJ20C | GEU | BEU | 20 | 22.2 | 28.1 | 1.0 | 35.8 | 41.9 | 5.0 |
| SMCJ20A | SMCJ20CA | GEV | BEV | 20 | 22.2 | 25.5 | 1.0 | 32.4 | 46.3 | 5.0 |
| SMCJ22 | SMCJ22C | GEW | BEW | 22 | 24.4 | 30.9 | 1.0 | 39.4 | 38.1 | 5.0 |
| SMCJ22A | SMCJ22CA | GEX | BEX | 22 | 24.4 | 28.0 | 1.0 | 35.5 | 42.2 | 5.0 |
| SMCJ24 | SMCJ24C | GEY | BEY | 24 | 26.7 | 33.8 | 1.0 | 43.0 | 34.9 | 5.0 |
| SMCJ24A | SMCJ24CA | GEZ | BEZ | 24 | 26.7 | 30.7 | 1.0 | 38.9 | 38.6 | 5.0 |
| SMCJ26 | SMCJ26C | GFD | BFD | 26 | 28.9 | 36.8 | 1.0 | 46.6 | 32.2 | 5.0 |
| SMCJ26A | SMCJ26CA | GFE | BFE | 26 | 28.9 | 32.2 | 1.0 | 42.1 | 35.6 | 5.0 |
| SMCJ28 | SMCJ28C | GFF | BFF | 28 | 31.1 | 39.4 | 1.0 | 50.0 | 30.0 | 5.0 |
| SMCJ28A | SMCJ28CA | GFG | BFG | 28 | 31.1 | 35.8 | 1.0 | 45.4 | 33.0 | 5.0 |
| SMCJ30 | SMCJ30C | GFH | BFH | 30 | 33.3 | 42.4 | 1.0 | 53.5 | 28.0 | 5.0 |
| SMCJ30A | SMCJ30CA | GFK | BFK | 30 | 33.3 | 38.3 | 1.0 | 48.4 | 31.0 | 5.0 |
| SMCJ33 | SMCJ33C | GFL | BFL | 33 | 36.7 | 46.9 | 1.0 | 59.0 | 25.4 | 5.0 |
| SMCJ33A | SMCJ33CA | GFM | BFM | 33 | 36.7 | 42.2 | 1.0 | 53.3 | 28.1 | 5.0 |

| Device Uni-directional | Device Bi-directional | Device Marking code | | Working Peak Reverse Voltage VRWM(Volts) | Breakdown voltage VBR Volts | | | Maximum Reverse Voltage at IRSM (Clamping Voltage) VRSM(VOLTS) | Maximum Reverse Surge Current IRSM(Amps) | Maximum Reverse Leakage at VRWM IR (uA) |
|------------------------|-----------------------|---------------------|------|---|-----------------------------|-------|----------|---|---|--|
| | | (UND) | (BI) | | Min. | Max. | @IT(mA) | | | |
| SMCJ36 | SMCJ36C | GFN | BFN | 36 | 40.0 | 50.7 | 1.0 | 64.3 | 23.3 | 5.0 |
| SMCJ36A | SMCJ36CA | GFP | BFP | 36 | 40.0 | 46.0 | 1.0 | 58.1 | 25.8 | 5.0 |
| SMCJ40 | SMCJ40C | GFQ | BFQ | 40 | 44.4 | 56.3 | 1.0 | 71.4 | 21.0 | 5.0 |
| SMCJ40A | SMCJ40CA | GFR | BFR | 40 | 44.4 | 51.1 | 1.0 | 64.5 | 23.3 | 5.0 |
| SMCJ43 | SMCJ43C | GFS | BFS | 43 | 47.8 | 60.5 | 1.0 | 76.7 | 19.6 | 5.0 |
| SMCJ43A | SMCJ43CA | GFT | BFT | 43 | 47.8 | 54.9 | 1.0 | 69.4 | 21.6 | 5.0 |
| SMCJ45 | SMCJ45C | GFU | BFU | 45 | 50.0 | 63.3 | 1.0 | 80.3 | 18.7 | 5.0 |
| SMCJ45A | SMCJ45CA | GFV | BFV | 45 | 50.0 | 57.5 | 1.0 | 72.7 | 20.6 | 5.0 |
| SMCJ48 | SMCJ48C | GFW | BFW | 48 | 53.3 | 67.5 | 1.0 | 85.5 | 17.5 | 5.0 |
| SMCJ48A | SMCJ48CA | GFX | BFX | 48 | 53.3 | 61.3 | 1.0 | 77.4 | 19.4 | 5.0 |
| SMCJ51 | SMCJ51C | GFY | BFY | 51 | 56.7 | 71.8 | 1.0 | 91.1 | 16.5 | 5.0 |
| SMCJ51A | SMCJ51CA | GFZ | BFZ | 51 | 56.7 | 65.2 | 1.0 | 82.4 | 18.2 | 5.0 |
| SMCJ54 | SMCJ54C | GGD | BGD | 54 | 60.0 | 76.0 | 1.0 | 96.3 | 15.6 | 5.0 |
| SMCJ54A | SMCJ54CA | GGE | BGE | 54 | 60.0 | 69.0 | 1.0 | 87.1 | 17.2 | 5.0 |
| SMCJ58 | SMCJ58C | GGF | BGF | 58 | 64.4 | 81.6 | 1.0 | 103 | 14.6 | 5.0 |
| SMCJ58A | SMCJ58CA | GGG | BGG | 58 | 64.4 | 74.6 | 1.0 | 93.6 | 16.0 | 5.0 |
| SMCJ60 | SMCJ60C | GGH | BGH | 60 | 66.7 | 84.5 | 1.0 | 107 | 14.0 | 5.0 |
| SMCJ60A | SMCJ60CA | GGK | BGK | 60 | 66.7 | 76.7 | 1.0 | 96.8 | 15.5 | 5.0 |
| SMCJ64 | SMCJ64C | GGL | BGL | 64 | 71.1 | 90.1 | 1.0 | 114 | 13.2 | 5.0 |
| SMCJ64A | SMCJ64CA | GGM | BGM | 64 | 71.1 | 81.8 | 1.0 | 103 | 14.6 | 5.0 |
| SMCJ70 | SMCJ70C | GGN | BGN | 70 | 77.8 | 98.6 | 1.0 | 125 | 12.0 | 5.0 |
| SMCJ70A | SMCJ70CA | GGP | BGP | 70 | 77.8 | 89.5 | 1.0 | 113 | 13.3 | 5.0 |
| SMCJ75 | SMCJ75C | GGQ | BGQ | 75 | 83.3 | 106 | 1.0 | 134 | 11.2 | 5.0 |
| SMCJ75A | SMCJ75CA | GGR | BGR | 75 | 83.3 | 95.8 | 1.0 | 121 | 12.4 | 5.0 |
| SMCJ78 | SMCJ78C | GGS | BGS | 78 | 86.7 | 110 | 1.0 | 139 | 10.8 | 5.0 |
| SMCJ78A | SMCJ78CA | GGT | BGT | 78 | 86.7 | 99.7 | 1.0 | 126 | 11.4 | 5.0 |
| SMCJ85 | SMCJ85C | GGU | BGU | 85 | 94.4 | 119.2 | 1.0 | 151 | 9.9 | 5.0 |
| SMCJ85A | SMCJ85CA | GGV | BGV | 85 | 94.4 | 108.2 | 1.0 | 137 | 10.4 | 5.0 |
| SMCJ90 | SMCJ90C | GGW | BGW | 90 | 100 | 126.5 | 1.0 | 160 | 9.4 | 5.0 |
| SMCJ90A | SMCJ90CA | GGX | BGX | 90 | 100 | 115.5 | 1.0 | 146 | 10.3 | 5.0 |
| SMCJ100 | SMCJ100C | GGY | BGY | 100 | 111 | 141.0 | 1.0 | 179 | 8.4 | 5.0 |
| SMCJ100A | SMCJ100CA | GGZ | BGZ | 100 | 111 | 128.0 | 1.0 | 162 | 9.3 | 5.0 |
| SMCJ110 | SMCJ110C | GHD | BHD | 110 | 122 | 154.0 | 1.0 | 196 | 7.7 | 5.0 |
| SMCJ110A | SMCJ110CA | GHE | BHE | 110 | 122 | 140.0 | 1.0 | 177 | 8.4 | 5.0 |
| SMCJ120 | SMCJ120C | GHF | BHF | 120 | 133 | 169.0 | 1.0 | 214 | 7.0 | 5.0 |
| SMCJ120A | SMCJ120CA | GHG | BHG | 120 | 133 | 153.0 | 1.0 | 193 | 7.9 | 5.0 |
| SMCJ130 | SMCJ130C | GHH | BHH | 130 | 144 | 182.0 | 1.0 | 231 | 6.5 | 5.0 |
| SMCJ130A | SMCJ130CA | GHK | BHK | 130 | 144 | 165.0 | 1.0 | 209 | 7.2 | 5.0 |
| SMCJ150 | SMCJ150C | GHL | BHL | 150 | 167 | 211.5 | 1.0 | 268 | 5.6 | 5.0 |
| SMCJ150A | SMCJ150CA | GHM | BHM | 150 | 167 | 192.0 | 1.0 | 243 | 6.2 | 5.0 |
| SMCJ160 | SMCJ160C | GHN | BHN | 160 | 178 | 226.0 | 1.0 | 287 | 5.2 | 5.0 |
| SMCJ160A | SMCJ160CA | GHP | BHP | 160 | 178 | 205.0 | 1.0 | 259 | 5.8 | 5.0 |
| SMCJ170 | SMCJ170C | GHQ | BHQ | 170 | 189 | 239.5 | 1.0 | 304 | 4.9 | 5.0 |
| SMCJ170A | SMCJ170CA | GHR | BHR | 170 | 189 | 217.5 | 1.0 | 275 | 5.5 | 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 .
- 4) For Uni-directional devices VF max=3.5v at if=35 A ,0.5 sine wave of 8.3 msec .pulse width.