

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

STAND-OFF VOLTAGE - **4.0** to **200** Volts
POWER DISSIPATION - **400** WATTS

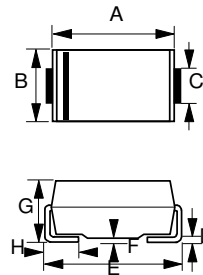
FEATURES

- 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

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 : 0.002 ounces, 0.064 gram

SMA



| SMA | | |
|------|------|------|
| DIM. | MIN. | MAX. |
| A | 4.06 | 4.57 |
| B | 2.29 | 2.92 |
| C | 1.27 | 1.63 |
| D | 0.15 | 0.31 |
| E | 4.83 | 5.59 |
| F | 0.05 | 0.20 |
| G | 1.96 | 2.40 |
| H | 0.76 | 1.52 |

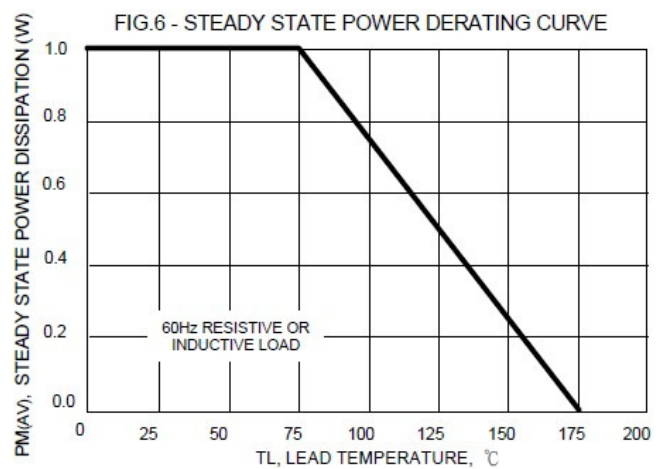
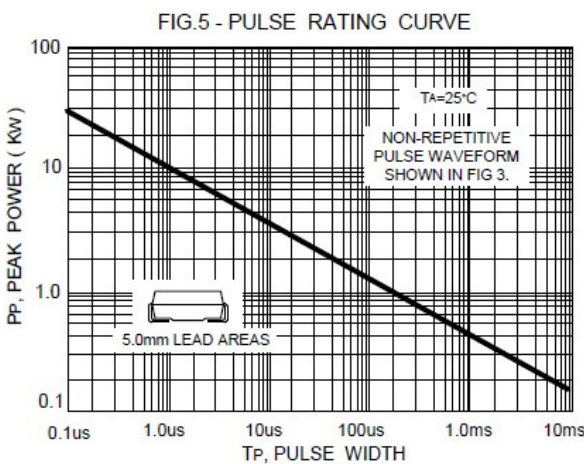
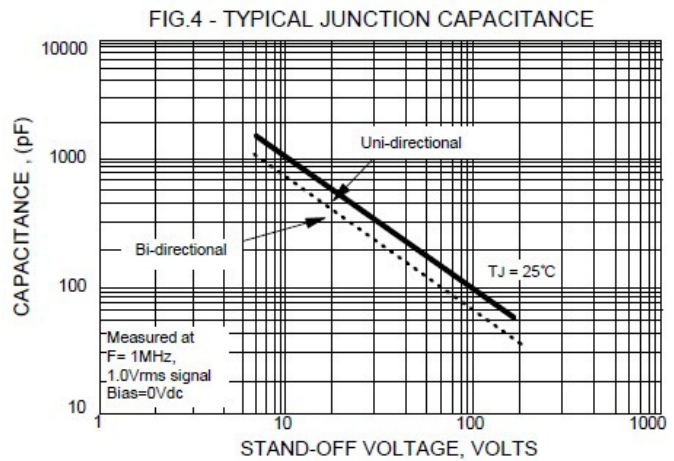
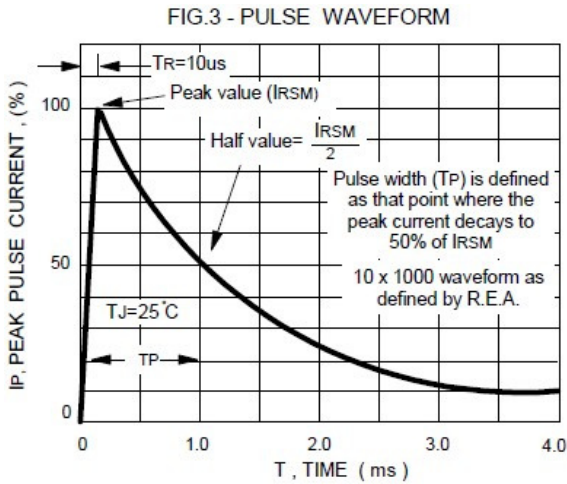
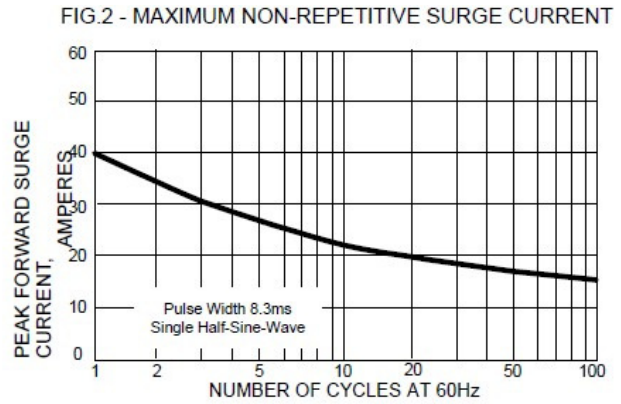
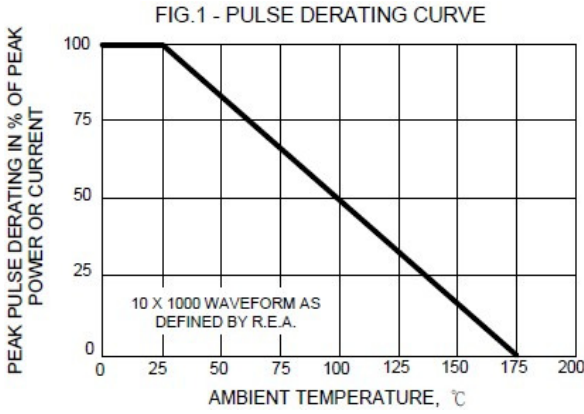
All Dimensions in millimeter

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| CHARACTERISTICS | SYMBOLS | VALUE | UNIT |
|------------------------------------------------------------------------------|---------|-------------|------|
| PEAK POWER DISSIPATION AT TA = 25 °C, TP = 1ms (Note 1) | PPK | 400 | W |
| Peak Forward Surge Current 8.3ms single half sine-wave @ TJ = 25 °C (Note 2) | IFSM | 40 | A |
| Steady State Power Dissipation at TL = 120 °C | PM(AV) | 1.0 | W |
| Maximum Instantaneous forward voltage at 16A (Note 2, 3) | VF | 3.0 | V |
| Operating Temperature Range | TJ | -55 to +175 | °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. For unidirectional units only.
3. VF max=3V at IF=16 A 300us square wave pulse.



| Device Uni-directional | Device Bi-directional | Device Marking code | | Working Peak Reverse Voltage V _{RWM} (Volts) | Breakdown voltage VBR Volts | | | Maximum Reverse Voltage at I _{RSM} (Clamping Voltage) V _{RSM} (VOLTS) | Maximum Reverse Surge Current I _{RSM} (Amps) | Maximum Reverse Leakage at V _{RWM} IR (uA) |
|------------------------|-----------------------|---------------------|------|----------------------------------------------------------|-----------------------------|-------|----------|--------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| | | (UNI) | (BI) | | Min. | Max. | @IT(mA) | | | |
| SMAJ4.0 | | HB | | 4.0 | 5.40 | 6.50 | 10 | 8.6 | 46.5 | 1000 |
| SMAJ5.0A | SMAJ5.0CA | HE | TE | 5.0 | 6.40 | 7.07 | 10 | 9.2 | 43.5 | 800 |
| SMAJ6.0A | SMAJ6.0CA | HG | TG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 38.8 | 800 |
| SMAJ6.5A | SMAJ6.5CA | HK | TK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 35.7 | 500 |
| SMAJ7.0A | SMAJ7.0CA | HM | TM | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 33.3 | 200 |
| SMAJ7.5A | SMAJ7.5CA | HP | TP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 31.0 | 100 |
| SMAJ8.0A | SMAJ8.0CA | HR | TR | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 29.4 | 50 |
| SMAJ8.5A | SMAJ8.5CA | HT | TT | 8.5 | 9.44 | 10.43 | 1 | 14.4 | 27.7 | 10 |
| SMAJ9.0A | SMAJ9.0CA | HV | TV | 9.0 | 10.0 | 11.1 | 1 | 15.4 | 26.0 | 5 |
| SMAJ10A | SMAJ10CA | HX | TX | 10 | 11.1 | 12.3 | 1 | 17.0 | 23.5 | 5 |
| SMAJ11A | SMAJ11CA | HZ | TZ | 11 | 12.2 | 13.5 | 1 | 18.2 | 22.0 | 0.5 |
| SMAJ12A | SMAJ12CA | IE | UE | 12 | 13.3 | 14.7 | 1 | 19.9 | 20.1 | 0.5 |
| SMAJ13A | SMAJ13CA | IG | UG | 13 | 14.4 | 15.9 | 1 | 21.5 | 18.6 | 0.5 |
| SMAJ14A | SMAJ14CA | IK | UK | 14 | 15.6 | 17.2 | 1 | 23.2 | 17.2 | 0.5 |
| SMAJ15A | SMAJ15CA | IM | UM | 15 | 16.7 | 18.5 | 1 | 24.4 | 16.4 | 0.5 |
| SMAJ16A | SMAJ16CA | IP | UP | 16 | 17.8 | 19.7 | 1 | 26.0 | 15.3 | 0.5 |
| SMAJ17A | SMAJ17CA | IR | UR | 17 | 18.9 | 20.9 | 1 | 27.6 | 14.5 | 0.5 |
| SMAJ18A | SMAJ18CA | IT | UT | 18 | 20.0 | 22.1 | 1 | 29.2 | 13.7 | 0.5 |
| SMAJ20A | SMAJ20CA | IV | UV | 20 | 22.2 | 24.5 | 1 | 32.4 | 12.3 | 0.5 |
| SMAJ22A | SMAJ22CA | IX | UX | 22 | 24.4 | 27.0 | 1 | 35.5 | 11.2 | 0.5 |
| SMAJ24A | SMAJ24CA | IZ | UZ | 24 | 26.7 | 29.5 | 1 | 38.9 | 10.3 | 0.5 |
| SMAJ26A | SMAJ26CA | JE | VE | 26 | 28.9 | 31.9 | 1 | 42.1 | 9.5 | 0.5 |
| SMAJ28A | SMAJ28CA | JG | VG | 28 | 31.1 | 34.4 | 1 | 45.4 | 8.8 | 0.5 |
| SMAJ30A | SMAJ30CA | JK | VK | 30 | 33.3 | 36.8 | 1 | 48.4 | 8.3 | 0.5 |
| SMAJ33A | SMAJ33CA | JM | VM | 33 | 36.7 | 40.6 | 1 | 53.3 | 7.5 | 0.5 |
| SMAJ36A | SMAJ36CA | JP | VP | 36 | 40.0 | 44.2 | 1 | 58.1 | 6.9 | 0.5 |
| SMAJ40A | SMAJ40CA | JR | VR | 40 | 44.4 | 49.1 | 1 | 64.5 | 6.2 | 0.5 |
| SMAJ43A | SMAJ43CA | JT | VT | 43 | 47.8 | 52.8 | 1 | 69.4 | 5.7 | 0.5 |
| SMAJ45A | SMAJ45CA | JV | VV | 45 | 50.0 | 55.3 | 1 | 72.7 | 5.5 | 0.5 |
| SMAJ48A | SMAJ48CA | JX | VX | 48 | 53.3 | 58.9 | 1 | 77.4 | 5.2 | 0.5 |
| SMAJ51A | SMAJ51CA | JZ | VZ | 51 | 56.7 | 62.7 | 1 | 82.4 | 4.9 | 0.5 |
| SMAJ54A | SMAJ54CA | RE | WE | 54 | 60.0 | 66.3 | 1 | 87.1 | 4.6 | 0.5 |
| SMAJ58A | SMAJ58CA | RG | WG | 58 | 64.4 | 71.2 | 1 | 93.6 | 4.3 | 0.5 |
| SMAJ60A | SMAJ60CA | RK | WK | 60 | 66.7 | 73.7 | 1 | 96.8 | 4.1 | 0.5 |
| SMAJ64A | SMAJ64CA | RM | WM | 64 | 71.1 | 78.6 | 1 | 103 | 3.9 | 0.5 |
| SMAJ70A | SMAJ70CA | RP | WP | 70 | 77.8 | 86.0 | 1 | 113 | 3.5 | 0.5 |
| SMAJ75A | SMAJ75CA | RR | WR | 75 | 83.3 | 92.1 | 1 | 121 | 3.3 | 0.5 |
| SMAJ78A | SMAJ78CA | RT | WT | 78 | 86.7 | 95.8 | 1 | 126 | 3.2 | 0.5 |
| SMAJ85A | SMAJ85CA | RV | VV | 85 | 94.4 | 104 | 1 | 137 | 2.9 | 0.5 |
| SMAJ90A | SMAJ90CA | RX | WX | 90 | 100 | 111 | 1 | 146 | 2.7 | 0.5 |
| SMAJ100A | SMAJ100CA | RZ | WZ | 100 | 111 | 123 | 1 | 162 | 2.5 | 0.5 |
| SMAJ110A | SMAJ110CA | SE | XE | 110 | 122 | 135 | 1 | 177 | 2.3 | 0.5 |
| SMAJ120A | SMAJ120CA | SG | XG | 120 | 133 | 147 | 1 | 193 | 2.0 | 0.5 |
| SMAJ130A | SMAJ130CA | SK | XK | 130 | 144 | 159 | 1 | 209 | 1.9 | 0.5 |
| SMAJ150A | SMAJ150CA | SM | XM | 150 | 167 | 185 | 1 | 243 | 1.6 | 0.5 |
| SMAJ160A | SMAJ160CA | SP | XP | 160 | 178 | 197 | 1 | 259 | 1.5 | 0.5 |
| SMAJ170A | SMAJ170CA | SR | XR | 170 | 189 | 209 | 1 | 275 | 1.4 | 0.5 |
| SMAJ188A | SMAJ188CA | SS | VS | 188 | 209 | 231 | 1 | 328 | 1.2 | 0.5 |
| SMAJ200A | SMAJ200CA | ST | YT | 200 | 224 | 248 | 1 | 324 | 1.2 | 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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