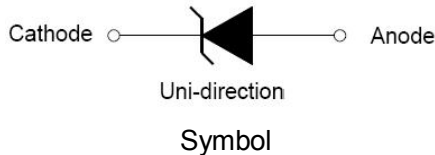


SMA

Features

- Peak power dissipation 400W@10 x 1000 us Pulse
- Low incremental surge resistance
- Excellent clamping capability
- Glass passivated junction
- Fast response time
- Typical IR less than 1uA above 10V
- Halogen free and RoHS compliant

Mechanical Data

- CASE: SMAJ(DO-214AC) Molded Plastic
- Polarity: By cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- Mounting Position: Any

Making Code & information

| Package | Packing Description | Packing Quantity |
|---------|---------------------|------------------|
| SMA | Tape/Reel, 11" reel | 5000 |

SMAJ XXX C A

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5% V_{BR} Voltage Tolerance

Bidirectional

V_{RWM} Voltage

Series Code

Maximum Ratings & Thermal Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified.)

| Parameter | Symbol | Value | Units |
|--|-----------|-------------|------------------|
| Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1) | P_{PPM} | Min 400 | W |
| Power Dissipation on Infinite Heat Sink at $T_L=50^\circ\text{C}$ | P_D | 3.3 | W |
| Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3) | I_{PPM} | See Table 1 | A |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2. 3) | I_{FSM} | 40 | A |
| Operating Junction Temperature Range | T_J | -55 to 150 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 to 150 | $^\circ\text{C}$ |

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2.
2. Mounted on 5.0x5.0mm² (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified).

| Type Number | | Marking | | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I _T | Breakdown Voltage Max. @ I _T | Test Current | Maximum Clamping Voltage @I _{PP} | Peak Pulse Current | Reverse Leakage @V _{RMW} |
|-------------|-----------|---------|------|---------------------------|--|---|---------------------|---|---------------------|-----------------------------------|
| (Uni) | (Bi) | (Uni) | (Bi) | V _{RMW} (V) | V _{BR MIN} (V) | V _{BR MAX} (V) | I _T (mA) | V _C (V) | I _{PP} (A) | I _R (uA) |
| SMAJ5.0A | SMAJ5.0CA | HE | TE | 5.0 | 6.40 | 7.00 | 10 | 9.2 | 43.5 | 500 |
| SMAJ6.0A | SMAJ6.0CA | HG | TG | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 38.8 | 500 |
| SMAJ6.5A | SMAJ6.5CA | HK | TK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 35.7 | 300 |
| 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 | 10.40 | 1 | 14.4 | 27.8 | 20 |
| SMAJ9.0A | SMAJ9.0CA | HV | TV | 9.0 | 10.0 | 11.10 | 1 | 15.4 | 26.0 | 10 |
| SMAJ10A | SMAJ10CA | HX | TX | 10.0 | 11.10 | 12.30 | 1 | 17.0 | 23.5 | 5 |
| SMAJ11A | SMAJ11CA | HZ | TZ | 11.0 | 12.20 | 13.50 | 1 | 18.2 | 22.0 | 1 |
| SMAJ12A | SMAJ12CA | IE | UE | 12.0 | 13.30 | 14.70 | 1 | 19.9 | 20.1 | 1 |
| SMAJ13A | SMAJ13CA | IG | UG | 13.0 | 14.40 | 15.90 | 1 | 21.5 | 18.6 | 1 |
| SMAJ14A | SMAJ14CA | IK | UK | 14.0 | 15.60 | 17.20 | 1 | 23.2 | 17.2 | 1 |
| SMAJ15A | SMAJ15CA | IM | UM | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 16.4 | 1 |
| SMAJ16A | SMAJ16CA | IP | UP | 16.0 | 17.80 | 19.70 | 1 | 26.0 | 15.4 | 1 |
| SMAJ17A | SMAJ17CA | IR | UR | 17.0 | 18.90 | 20.90 | 1 | 27.6 | 14.5 | 1 |
| SMAJ18A | SMAJ18CA | IT | UT | 18.0 | 20.00 | 22.10 | 1 | 29.2 | 13.7 | 1 |
| SMAJ20A | SMAJ20CA | IV | UV | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 12.3 | 1 |
| SMAJ22A | SMAJ22CA | IX | UX | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 11.3 | 1 |
| SMAJ24A | SMAJ24CA | IZ | UZ | 24.0 | 26.70 | 29.50 | 1 | 38.9 | 10.3 | 1 |
| SMAJ26A | SMAJ26CA | JE | VE | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 9.5 | 1 |
| SMAJ28A | SMAJ28CA | JG | VG | 28.0 | 31.10 | 34.40 | 1 | 45.4 | 8.8 | 1 |
| SMAJ30A | SMAJ30CA | JK | VK | 30.0 | 33.30 | 36.80 | 1 | 48.4 | 8.3 | 1 |
| SMAJ33A | SMAJ33CA | JM | VM | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 7.5 | 1 |
| SMAJ36A | SMAJ36CA | JP | VP | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 6.9 | 1 |
| SMAJ40A | SMAJ40CA | JR | VR | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 6.2 | 1 |
| SMAJ43A | SMAJ43CA | JT | VT | 43.0 | 47.80 | 52.80 | 1 | 69.4 | 5.8 | 1 |
| SMAJ45A | SMAJ45CA | JV | VV | 45.0 | 50.00 | 55.30 | 1 | 72.7 | 5.5 | 1 |
| SMAJ48A | SMAJ48CA | JX | VX | 48.0 | 53.30 | 58.90 | 1 | 77.4 | 5.2 | 1 |
| SMAJ51A | SMAJ51CA | JZ | VZ | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 4.9 | 1 |
| SMAJ54A | SMAJ54CA | RE | WE | 54.0 | 60.00 | 66.30 | 1 | 87.1 | 4.6 | 1 |
| SMAJ58A | SMAJ58CA | RG | WG | 58.0 | 64.40 | 71.20 | 1 | 93.6 | 4.3 | 1 |
| SMAJ60A | SMAJ60CA | RK | WK | 60.0 | 66.70 | 73.70 | 1 | 96.8 | 4.1 | 1 |
| SMAJ64A | SMAJ64CA | RM | WM | 64.0 | 71.10 | 78.60 | 1 | 103.0 | 3.9 | 1 |
| SMAJ70A | SMAJ70CA | RP | WP | 70.0 | 77.80 | 86.00 | 1 | 113.0 | 3.5 | 1 |
| SMAJ75A | SMAJ75CA | RR | WR | 75.0 | 83.30 | 92.10 | 1 | 121.0 | 3.3 | 1 |
| SMAJ78A | SMAJ78CA | RT | WT | 78.0 | 86.70 | 95.80 | 1 | 126.0 | 3.2 | 1 |
| SMAJ85A | SMAJ85CA | RV | VV | 85.0 | 94.40 | 104.00 | 1 | 137.0 | 2.9 | 1 |
| SMAJ90A | SMAJ90CA | RX | WX | 90.0 | 100.00 | 111.00 | 1 | 146.0 | 2.7 | 1 |
| SMAJ100A | SMAJ100CA | RZ | WZ | 100.0 | 111.00 | 123.00 | 1 | 162.0 | 2.5 | 1 |
| SMAJ110A | SMAJ110CA | SE | XE | 110.0 | 122.00 | 135.00 | 1 | 177.0 | 2.3 | 1 |
| SMAJ120A | SMAJ120CA | SG | XG | 120.0 | 133.00 | 147.00 | 1 | 193.0 | 2.1 | 1 |
| SMAJ130A | SMAJ130CA | SK | XK | 130.0 | 144.00 | 159.00 | 1 | 209.0 | 1.9 | 1 |
| SMAJ150A | SMAJ150CA | SM | XM | 150.0 | 167.00 | 185.00 | 1 | 243.0 | 1.6 | 1 |
| SMAJ160A | SMAJ160CA | SP | XP | 160.0 | 178.00 | 197.00 | 1 | 259.0 | 1.5 | 1 |
| SMAJ170A | SMAJ170CA | SR | XR | 170.0 | 189.00 | 209.00 | 1 | 275.0 | 1.5 | 1 |
| SMAJ180A | SMAJ180CA | ST | XT | 180.0 | 201.00 | 222.00 | 1 | 292.0 | 1.4 | 1 |
| SMAJ190A | SMAJ190CA | SV | XV | 190.0 | 211.00 | 233.00 | 1 | 308.0 | 1.3 | 1 |
| SMAJ200A | SMAJ200CA | SX | XX | 200.0 | 224.00 | 247.00 | 1 | 324.0 | 1.2 | 1 |
| SMAJ210A | SMAJ210CA | SZ | XZ | 210.0 | 237.00 | 263.00 | 1 | 340.0 | 1.2 | 1 |
| SMAJ220A | SMAJ220CA | ZE | YE | 220.0 | 246.00 | 272.00 | 1 | 356.0 | 1.1 | 1 |
| SMAJ250A | SMAJ250CA | ZG | YG | 250.0 | 279.00 | 309.00 | 1 | 405.0 | 1.0 | 1 |
| SMAJ300A | SMAJ300CA | ZK | YK | 300.0 | 335.00 | 371.00 | 1 | 486.0 | 0.8 | 1 |
| SMAJ350A | SMAJ350CA | ZM | YM | 350.0 | 391.00 | 432.00 | 1 | 567.0 | 0.7 | 1 |
| SMAJ400A | SMAJ400CA | ZP | YP | 400.0 | 447.00 | 494.00 | 1 | 648.0 | 0.6 | 1 |
| SMAJ440A | SMAJ440CA | ZR | YR | 440.0 | 492.00 | 543.00 | 1 | 713.0 | 0.6 | 1 |

NOTE: For Bi-directional type having V_{RMW} of 10 Volts and less, the I_R limit is double.
 For parts without A, the V_{BR} is ± 10% and V_C is 5% higher than with A parts.

Ratings and Characteristic Curves

(Ratings at 25°C ambient temperature unless otherwise specified).

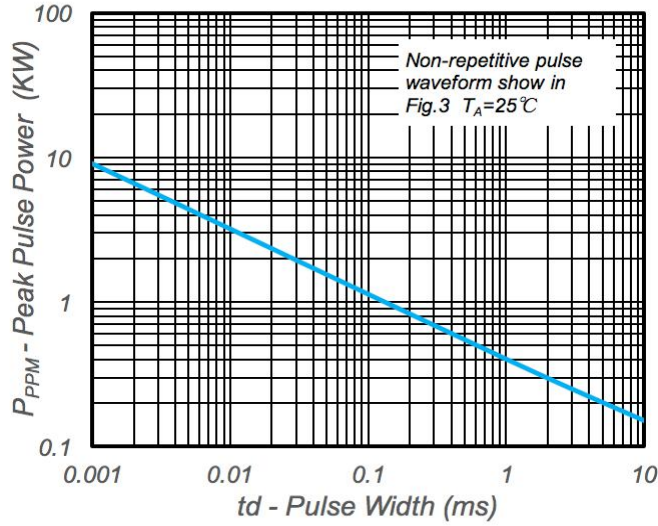


Fig.1 Peak Pulse Power Rating

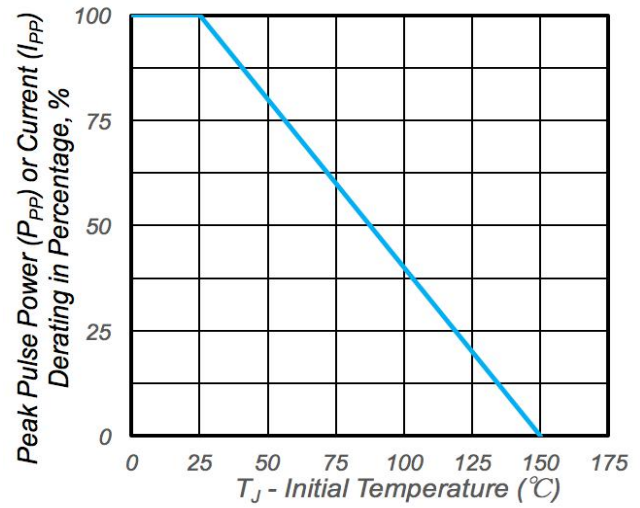


Fig.2 Pulse Derating Curve

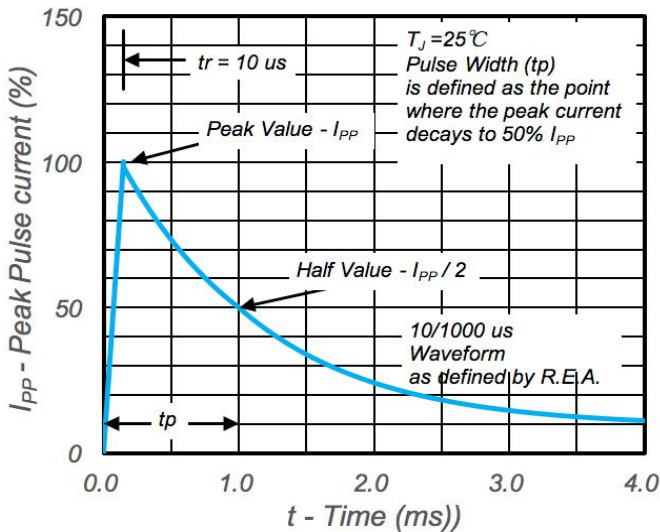


Fig.3 Pulse Waveform

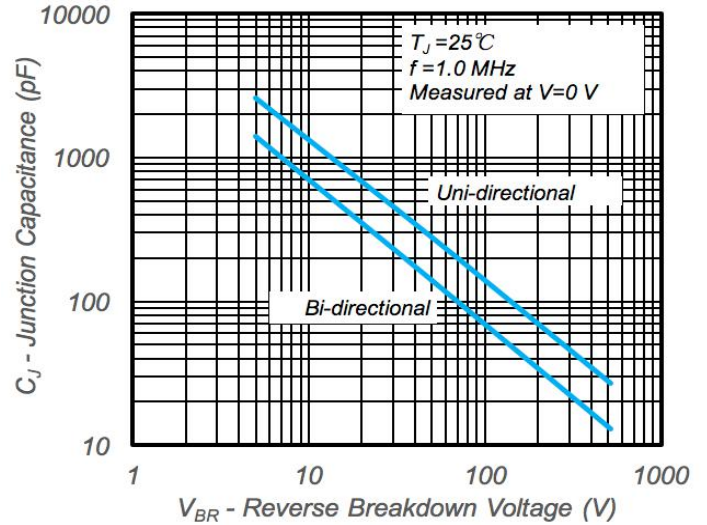


Fig.4 Typical Junction Capacitance

Package Outline Dimensions: SMA(DO-214AC)

