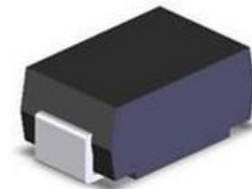


400Watts Transient Voltage Suppressor SMAJ5.0(C)A - SMAJ550(C)A

Features

- Glass passivated chip
- 400 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard



**SMA
DO-214AC**



Mechanical Characteristics

- JEDEC DO-214AC(SMA) package
- Molding compound flammability rating: UL 94V-0
- Marking: Marking Code
- Packaging: Tape and Reel per EIA 481

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

| Absolute Maximum Rating | | | |
|---|-----------------------------------|----------------|-------|
| Rating | Symbol | Value | Units |
| Peak power dissipation with a 10/1000 us waveform ⁽¹⁾ | P _{PPM} | 400 | W |
| Peak pulse current with a 10/1000 us waveform ⁽¹⁾ | I _{PPM} | See Next Table | A |
| Power dissipation on infinite heatsink at T _L = 75 °C | P _D | 3.0 | W |
| Peak forward surge current, 8.3 ms single half sine wave unidirectional only ⁽²⁾ | I _{FSM} | 40 | A |
| Maximum instantaneous forward voltage at 25 A for unidirectional only ⁽³⁾ | V _F | 3.5/6.5 | V |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 to +150 | °C |

1) Non-repetitive current pulse per Fig.5 and derated above T_A= 25 °C per Fig.1 ;

2) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum ;

3) V_F<3.5V for devices of V_{BR}<200V and V_F<6.5V for devices of V_{BR}>201V.

400Watts Transient Voltage Suppressor SMAJ5.0(C)A - SMAJ550(C)A

Electrical Characteristics

| Part Number | | Marking | | Reverse Stand Off Voltage V_R (V) | Breakdown Voltage | | Test Current I_T (mA) | Maximum Clamping Voltage V_C (V) @ I_{PP} | Maximum Peak Pulse Current I_{PP} (A) | Maximum Reverse Leakage I_R (μ A) @ V_R |
|-------------|-----------|---------|----|--|----------------------|------|----------------------------|--|--|---|
| Uni | Bi | Uni | Bi | | V_{BR} (V) @ I_T | Min. | | | | |
| SMAJ5.0A | SMAJ5.0CA | AE | WE | 5 | 6.4 | 7 | 10 | 9.2 | 43.5 | 800 |
| SMAJ6.0A | SMAJ6.0CA | AG | WG | 6 | 6.67 | 7.37 | 10 | 10.3 | 38.8 | 800 |
| SMAJ6.5A | SMAJ6.5CA | AK | WK | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 35.7 | 500 |
| SMAJ7.0A | SMAJ7.0CA | AM | WM | 7 | 7.78 | 8.6 | 10 | 12 | 33.3 | 200 |
| SMAJ7.5A | SMAJ7.5CA | AP | WP | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 31 | 100 |
| SMAJ8.0A | SMAJ8.0CA | AR | WR | 8 | 8.89 | 9.83 | 1 | 13.6 | 29.4 | 50 |
| SMAJ8.5A | SMAJ8.5CA | AT | WT | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 27.8 | 20 |
| SMAJ9.0A | SMAJ9.0CA | AV | WV | 9 | 10 | 11.1 | 1 | 15.4 | 26 | 10 |
| SMAJ10A | SMAJ10CA | AX | WX | 10 | 11.1 | 12.3 | 1 | 17 | 23.5 | 5 |
| SMAJ11A | SMAJ11CA | AZ | WZ | 11 | 12.2 | 13.5 | 1 | 18.2 | 22 | 1 |
| SMAJ12A | SMAJ12CA | BE | XE | 12 | 13.3 | 14.7 | 1 | 19.9 | 20.1 | 1 |
| SMAJ13A | SMAJ13CA | BG | XG | 13 | 14.4 | 15.9 | 1 | 21.5 | 18.6 | 1 |
| SMAJ14A | SMAJ14CA | BK | XK | 14 | 15.6 | 17.2 | 1 | 23.2 | 17.2 | 1 |
| SMAJ15A | SMAJ15CA | BM | XM | 15 | 16.7 | 18.5 | 1 | 24.4 | 16.4 | 1 |
| SMAJ16A | SMAJ16CA | BP | XP | 16 | 17.8 | 19.7 | 1 | 26 | 15.4 | 1 |
| SMAJ17A | SMAJ17CA | BR | XR | 17 | 18.9 | 20.9 | 1 | 27.6 | 14.5 | 1 |
| SMAJ18A | SMAJ18CA | BT | XT | 18 | 20 | 22.1 | 1 | 29.2 | 13.7 | 1 |
| SMAJ20A | SMAJ20CA | BV | XV | 20 | 22.2 | 24.5 | 1 | 32.4 | 12.3 | 1 |
| SMAJ22A | SMAJ22CA | BX | XX | 22 | 24.4 | 26.9 | 1 | 35.5 | 11.3 | 1 |
| SMAJ24A | SMAJ24CA | BZ | XZ | 24 | 26.7 | 29.5 | 1 | 38.9 | 10.3 | 1 |
| SMAJ26A | SMAJ26CA | CE | YE | 26 | 28.9 | 31.9 | 1 | 42.1 | 9.5 | 1 |
| SMAJ28A | SMAJ28CA | CG | YG | 28 | 31.1 | 34.4 | 1 | 45.4 | 8.8 | 1 |
| SMAJ30A | SMAJ30CA | CK | YK | 30 | 33.3 | 36.8 | 1 | 48.4 | 8.3 | 1 |
| SMAJ33A | SMAJ33CA | CM | YM | 33 | 36.7 | 40.6 | 1 | 53.3 | 7.5 | 1 |
| SMAJ36A | SMAJ36CA | CP | YP | 36 | 40 | 44.2 | 1 | 58.1 | 6.9 | 1 |
| SMAJ40A | SMAJ40CA | CR | YR | 40 | 44.4 | 49.1 | 1 | 64.5 | 6.2 | 1 |
| SMAJ43A | SMAJ43CA | CT | YT | 43 | 47.8 | 52.8 | 1 | 69.4 | 5.8 | 1 |
| SMAJ45A | SMAJ45CA | CV | YV | 45 | 50 | 55.3 | 1 | 72.7 | 5.5 | 1 |
| SMAJ48A | SMAJ48CA | CX | YX | 48 | 53.3 | 58.9 | 1 | 77.4 | 5.2 | 1 |
| SMAJ51A | SMAJ51CA | CZ | YZ | 51 | 56.7 | 62.7 | 1 | 82.4 | 4.9 | 1 |
| SMAJ54A | SMAJ54CA | RE | ZE | 54 | 60 | 66.3 | 1 | 87.1 | 4.6 | 1 |
| SMAJ58A | SMAJ58CA | RG | ZG | 58 | 64.4 | 71.2 | 1 | 93.6 | 4.3 | 1 |
| SMAJ60A | SMAJ60CA | RK | ZK | 60 | 66.7 | 73.7 | 1 | 96.8 | 4.1 | 1 |
| SMAJ64A | SMAJ64CA | RM | ZM | 64 | 71.1 | 78.6 | 1 | 103 | 3.9 | 1 |
| SMAJ70A | SMAJ70CA | RP | ZP | 70 | 77.8 | 86 | 1 | 113 | 3.5 | 1 |
| SMAJ75A | SMAJ75CA | RR | ZR | 75 | 83.3 | 92.1 | 1 | 121 | 3.3 | 1 |
| SMAJ78A | SMAJ78CA | RT | ZT | 78 | 86.7 | 95.8 | 1 | 126 | 3.2 | 1 |
| SMAJ85A | SMAJ85CA | RV | ZV | 85 | 94.4 | 104 | 1 | 137 | 2.9 | 1 |
| SMAJ90A | SMAJ90CA | RX | ZX | 90 | 100 | 111 | 1 | 146 | 2.7 | 1 |
| SMAJ100A | SMAJ100CA | RZ | ZZ | 100 | 111 | 123 | 1 | 162 | 2.5 | 1 |

400Watts
Transient Voltage Suppressor
SMAJ5.0(C)A - SMAJ550(C)A

Electrical Characteristics (continued)

| Part Number | | Marking | | Reverse Stand Off Voltage | Breakdown Voltage | | Test Current | Maximum Clamping Voltage | Maximum Peak Pulse Current | Maximum Reverse Leakage |
|-------------|-----------|---------|----|---------------------------|----------------------|------|--------------|--------------------------|----------------------------|--------------------------|
| Uni | Bi | Uni | Bi | V_R (V) | V_{BR} (V) @ I_T | | I_T (mA) | V_C (V) @ I_{PP} | I_{PP} (A) | I_R (μ A) @ V_R |
| | | | | | Min. | Max. | | | | |
| SMAJ110A | SMAJ110CA | SE | VE | 110 | 122 | 135 | 1 | 177 | 2.3 | 1 |
| SMAJ120A | SMAJ120CA | SG | VG | 120 | 133 | 147 | 1 | 193 | 2.1 | 1 |
| SMAJ130A | SMAJ130CA | SK | VK | 130 | 144 | 159 | 1 | 209 | 1.9 | 1 |
| SMAJ150A | SMAJ150CA | SM | VM | 150 | 167 | 185 | 1 | 243 | 1.6 | 1 |
| SMAJ160A | SMAJ160CA | SP | VP | 160 | 178 | 197 | 1 | 259 | 1.5 | 1 |
| SMAJ170A | SMAJ170CA | SR | VR | 170 | 189 | 209 | 1 | 275 | 1.5 | 1 |
| SMAJ180A | SMAJ180CA | ST | VT | 180 | 201 | 222 | 1 | 292 | 1.4 | 1 |
| SMAJ190A | SMAJ190CA | SU | YU | 190 | 209 | 243 | 1 | 308 | 1.3 | 1 |
| SMAJ200A | SMAJ200CA | SV | VV | 200 | 224 | 247 | 1 | 324 | 1.2 | 1 |
| SMAJ210A | SMAJ210CA | SW | YW | 210 | 231 | 268 | 1 | 340 | 1.2 | 1 |
| SMAJ220A | SMAJ220CA | GX | VX | 220 | 246 | 272 | 1 | 356 | 1.1 | 1 |
| SMAJ250A | SMAJ250CA | SZ | VZ | 250 | 279 | 309 | 1 | 405 | 1 | 1 |
| SMAJ300A | SMAJ300CA | TE | UE | 300 | 335 | 371 | 1 | 486 | 0.8 | 1 |
| SMAJ350A | SMAJ350CA | TG | UG | 350 | 391 | 432 | 1 | 567 | 0.7 | 1 |
| SMAJ400A | SMAJ400CA | TK | UK | 400 | 447 | 494 | 1 | 648 | 0.6 | 1 |
| SMAJ440A | SMAJ440CA | TM | UM | 440 | 492 | 543 | 1 | 713 | 0.6 | 1 |
| SMAJ480A | SMAJ480CA | TP | UP | 480 | 536 | 593 | 1 | 750 | 0.5 | 1 |
| SMAJ520A | SMAJ520CA | TR | UR | 520 | 578 | 640 | 1 | 762 | 0.5 | 1 |
| SMAJ550A | SMAJ550CA | TT | UT | 550 | 615 | 680 | 1 | 860 | 0.4 | 1 |

400Watts Transient Voltage Suppressor SMAJ5.0(C)A - SMAJ550(C)A

Ratings and Characteristics Curves (TA=25°C unless otherwise noted)

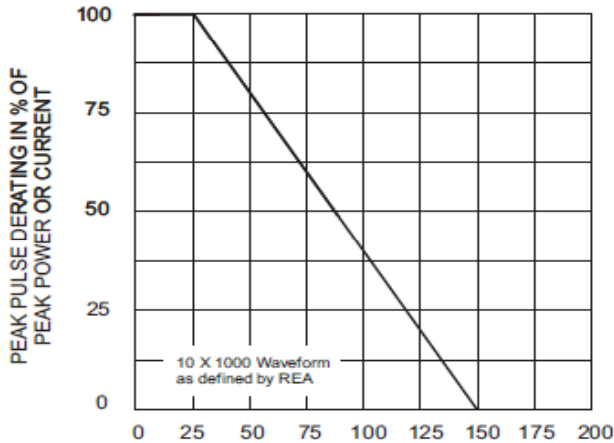


Fig. 1 - Pulse Derating Curve

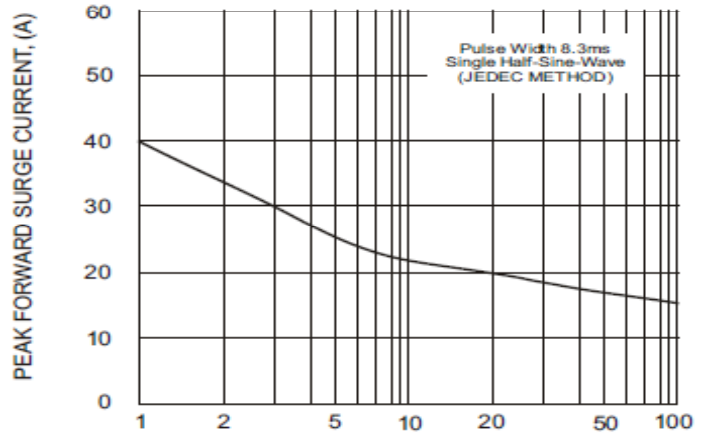


Fig. 2 - Maximum Non-Repetitive Surge Current

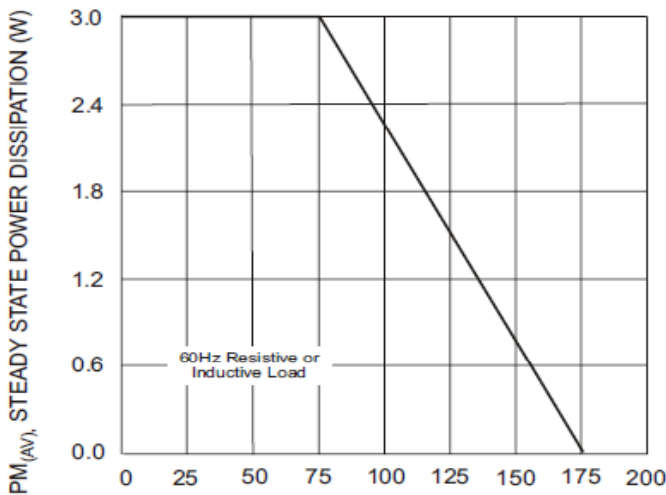


Fig. 3 - Steady State Power Derating Curve

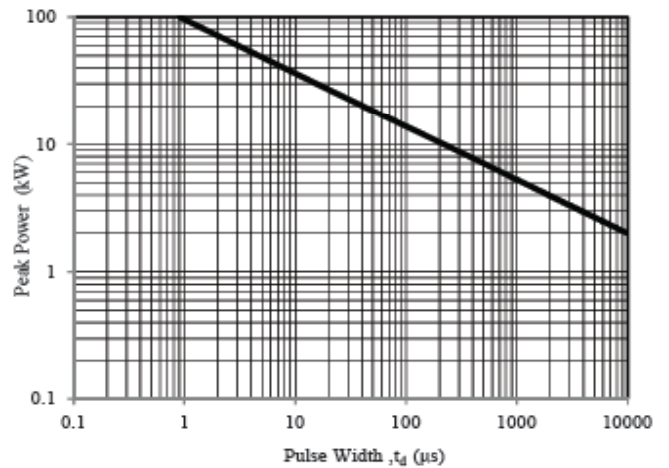


Fig. 4 - Peak Pulse Power Rating Curve

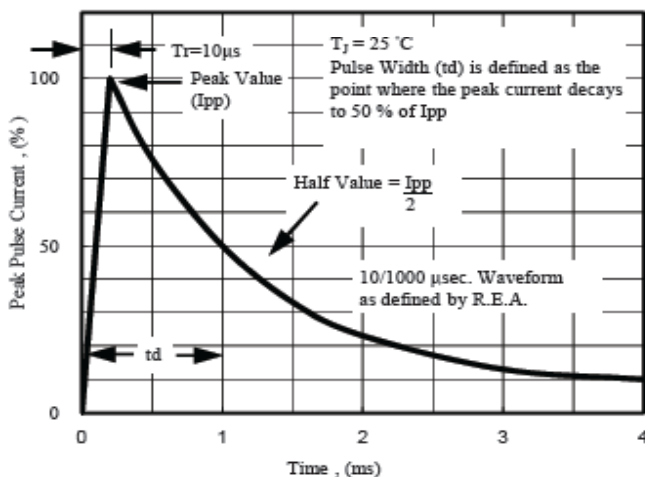


Fig. 5 - Pulse Waveform

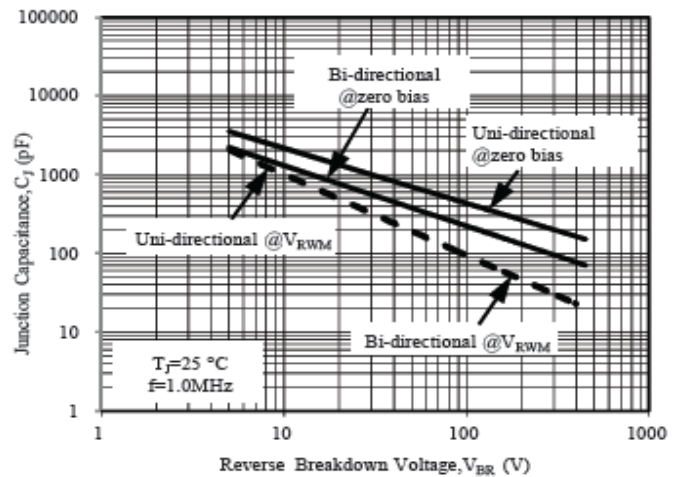
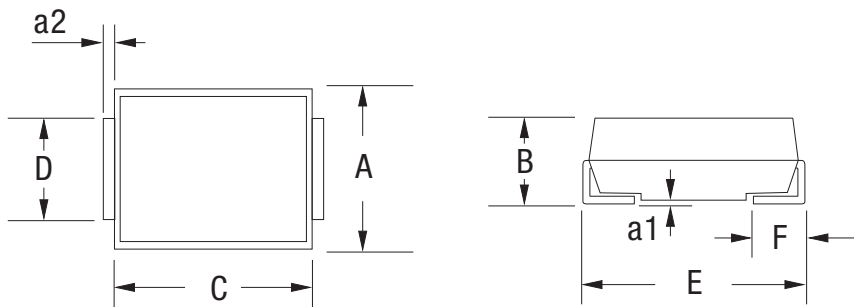


Fig. 6 - Typical Junction Capacitance

400Watts
Transient Voltage Suppressor
SMAJ5.0(C)A - SMAJ550(C)A

Dimension (Unit: mm)



| A | | B | | C | | D | | E | | F | | a1 | | a2 | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Max. |
| 2.500 | 2.800 | 1.900 | 2.450 | 3.900 | 4.600 | 1.400 | 1.800 | 4.800 | 5.300 | 0.760 | 1.520 | - | 0.203 | 0.145 | 0.255 |

Packaging: 5,000/Tape & Reel

Part Marking System

