

Reverse Voltage: 5.0 to 58 V
Peak Pulse Power: 600 W

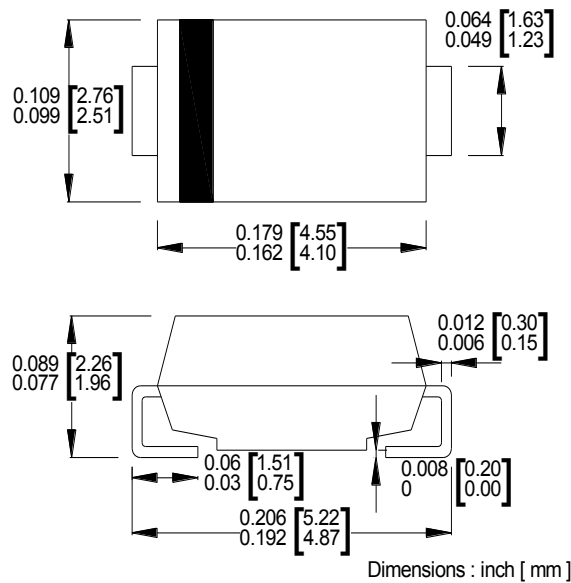
Features

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

SMA/ DO-214AC



Maximum Ratings($T_A=25^\circ\text{C}$ unless otherwise noted)

| Parameter | Symbol | Value | UNIT |
|---|----------------|----------------|------------------|
| Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾ | P_{PP} | 600 | W |
| Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾ | I_{PP} | See Next Table | A |
| Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$ | P_D | 3.0 | W |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾ | I_{FSM} | 60 | A |
| Maximum instantaneous forward voltage at 25 A for unidirectional only ⁽³⁾ | V_F | 3.5 | V |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above $T_A = 25^\circ\text{C}$ per Fig.1

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



SMA6J Series

Surface Mount Transient Voltage Suppressors



Ratings and Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

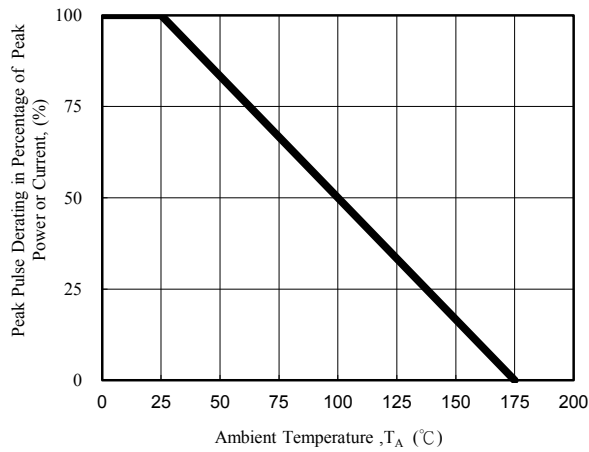


Fig. 1 - Pulse Derating Curve

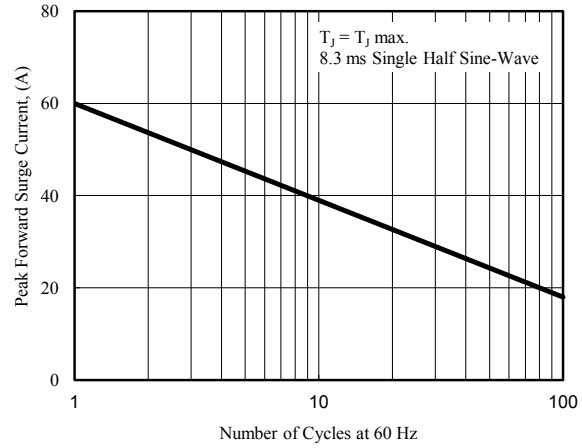


Fig. 2 - Maximum Non-Repetitive Surge Current

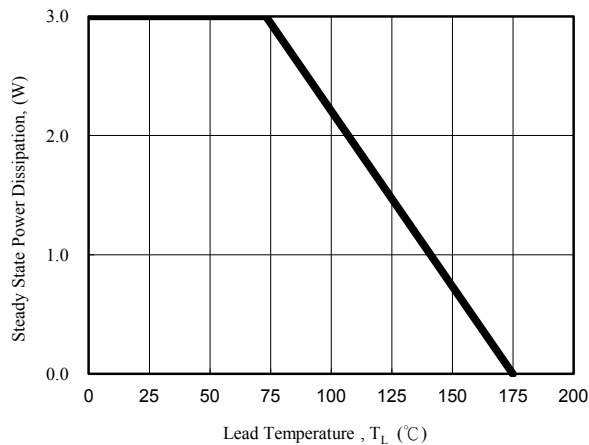


Fig. 3 - Steady State Power Derating Curve

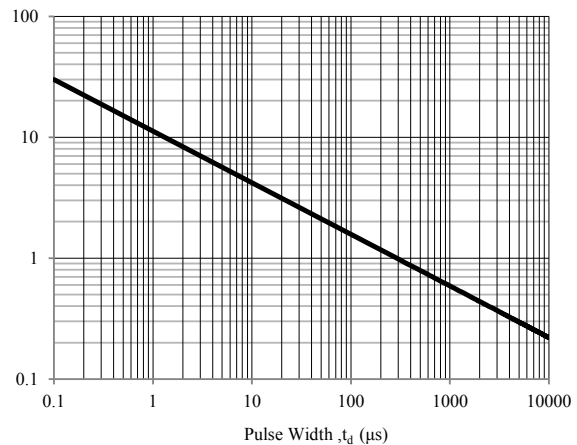


Fig. 4 - Peak Pulse Power Rating Curve

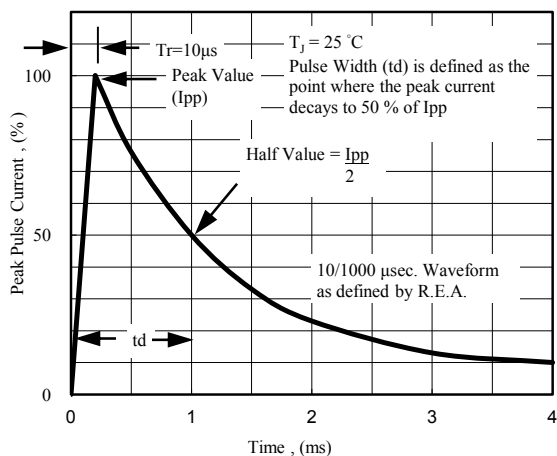


Fig. 5 - Pulse Waveform

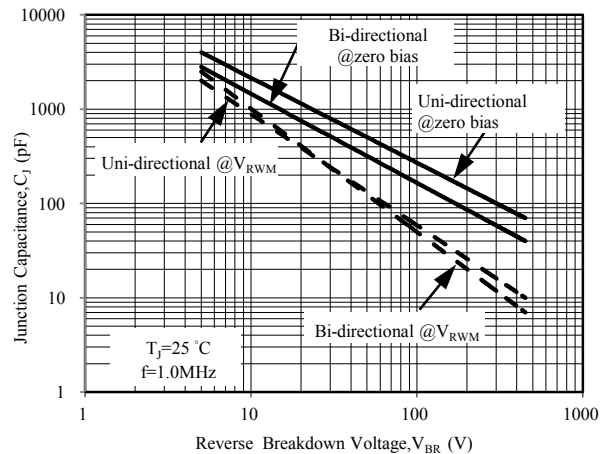


Fig. 6 - Typical Junction Capacitance



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Electrical Characteristics($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Part Number (Uni) | Part Number (Bi) | Device Marking Code | | Breakdown Voltage V_{BR} @ I_T | | | Maximum Reverse Leakage I_R @ V_{RWM} (μA) | Working Peak Reverse Voltage V_{RWM} (V) | Maximum Reverse Surge Current I_{PP} (A) | Maximum Clamping Voltage V_C @ I_{PP} (V) |
|-------------------|------------------|---------------------|----|------------------------------------|---------|------------|---|--|--|---|
| | | Uni | Bi | Min (V) | Max (V) | I_T (mA) | | | | |
| SMA6J5.0A | | KE | | 6.40 | 7.00 | 10 | 800 | 5.0 | 65.2 | 9.2 |
| SMA6J6.0A | SMA6J6.0CA | KG | AG | 6.67 | 7.37 | 10 | 800 | 6.0 | 58.3 | 10.3 |
| SMA6J6.5A | SMA6J6.5CA | KK | AK | 7.22 | 7.98 | 10 | 500 | 6.5 | 53.6 | 11.2 |
| SMA6J7.0A | SMA6J7.0CA | KM | AM | 7.78 | 8.60 | 10 | 200 | 7.0 | 50.0 | 12.0 |
| SMA6J7.5A | SMA6J7.5CA | KP | AP | 8.33 | 9.21 | 1 | 100 | 7.5 | 46.5 | 12.9 |
| SMA6J8.0A | SMA6J8.0CA | KR | AR | 8.89 | 9.83 | 1 | 50 | 8.0 | 44.1 | 13.6 |
| SMA6J8.5A | SMA6J8.5CA | KT | AT | 9.44 | 10.40 | 1 | 10 | 8.5 | 41.7 | 14.4 |
| SMA6J9.0A | SMA6J9.0CA | KV | AV | 10.00 | 11.10 | 1 | 5.0 | 9.0 | 39.0 | 15.4 |
| SMA6J10A | SMA6J10CA | KX | AX | 11.10 | 12.30 | 1 | 1.0 | 10.0 | 35.3 | 17.0 |
| SMA6J11A | SMA6J11CA | KZ | AZ | 12.20 | 13.50 | 1 | 1.0 | 11.0 | 33.0 | 18.2 |
| SMA6J12A | SMA6J12CA | LE | BE | 13.30 | 14.70 | 1 | 1.0 | 12.0 | 30.2 | 19.9 |
| SMA6J13A | SMA6J13CA | LG | BG | 14.40 | 15.90 | 1 | 1.0 | 13.0 | 27.9 | 21.5 |
| SMA6J14A | SMA6J14CA | LK | BK | 15.60 | 17.20 | 1 | 1.0 | 14.0 | 25.9 | 23.2 |
| SMA6J15A | SMA6J15CA | LM | BM | 16.70 | 18.50 | 1 | 1.0 | 15.0 | 24.6 | 24.4 |
| SMA6J16A | SMA6J16CA | LP | BP | 17.80 | 19.70 | 1 | 1.0 | 16.0 | 23.1 | 26.0 |
| SMA6J17A | SMA6J17CA | LR | BR | 18.90 | 20.90 | 1 | 1.0 | 17.0 | 21.7 | 27.6 |
| SMA6J18A | SMA6J18CA | LT | BT | 20.00 | 22.10 | 1 | 1.0 | 18.0 | 20.5 | 29.2 |
| SMA6J19A | SMA6J19CA | LB | BB | 21.10 | 23.30 | 1 | 1.0 | 19.0 | 19.5 | 30.8 |
| SMA6J20A | SMA6J20CA | LV | BV | 22.20 | 24.50 | 1 | 1.0 | 20.0 | 18.5 | 32.4 |
| SMA6J22A | SMA6J22CA | LX | BX | 24.40 | 26.90 | 1 | 1.0 | 22.0 | 16.9 | 35.5 |
| SMA6J24A | SMA6J24CA | LZ | BZ | 26.70 | 29.50 | 1 | 1.0 | 24.0 | 15.4 | 38.9 |
| SMA6J26A | SMA6J26CA | ME | CE | 28.90 | 31.90 | 1 | 1.0 | 26.0 | 14.3 | 42.1 |
| SMA6J28A | SMA6J28CA | MG | CG | 31.10 | 34.40 | 1 | 1.0 | 28.0 | 13.2 | 45.4 |
| SMA6J30A | SMA6J30CA | MK | CK | 33.30 | 36.80 | 1 | 1.0 | 30.0 | 12.4 | 48.4 |
| SMA6J33A | SMA6J33CA | MM | CM | 36.70 | 40.60 | 1 | 1.0 | 33.0 | 11.3 | 53.3 |
| SMA6J36A | SMA6J36CA | MP | CP | 40.00 | 44.20 | 1 | 1.0 | 36.0 | 10.3 | 58.1 |
| SMA6J40A | SMA6J40CA | MR | CR | 44.40 | 49.10 | 1 | 1.0 | 40.0 | 9.30 | 64.5 |
| SMA6J43A | SMA6J43CA | MT | CT | 47.80 | 52.80 | 1 | 1.0 | 43.0 | 8.65 | 69.4 |
| SMA6J45A | SMA6J45CA | MV | CV | 50.00 | 55.30 | 1 | 1.0 | 45.0 | 8.25 | 72.7 |
| SMA6J48A | SMA6J48CA | MX | CX | 53.30 | 58.90 | 1 | 1.0 | 48.0 | 7.75 | 77.4 |
| SMA6J51A | SMA6J51CA | MZ | CZ | 56.70 | 62.70 | 1 | 1.0 | 51.0 | 7.28 | 82.4 |
| SMA6J54A | SMA6J54CA | NE | DE | 60.00 | 66.30 | 1 | 1.0 | 54.0 | 6.89 | 87.1 |
| SMA6J58A | SMA6J58CA | NG | DG | 64.40 | 71.20 | 1 | 1.0 | 58.0 | 6.41 | 93.6 |

Note:

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double

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