

Reverse Voltage: 5.0 to 85 V
Peak Pulse Power: 1000 W

Surface Mount Transient Voltage Suppressors

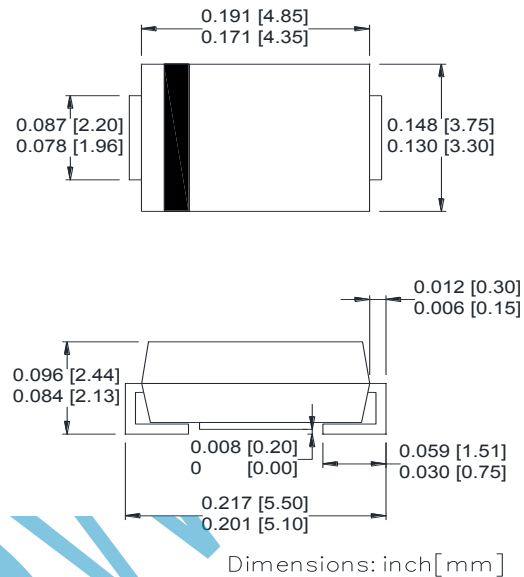
Features

- Glass passivated chip
- 1000 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

SMB/ DO-214AA



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} | 1000 | 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 | 5.0 | W |
| Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽²⁾ | I_{FSM} | 100 | A |
| Maximum instantaneous forward voltage at 50 A for unidirectional only | 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

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

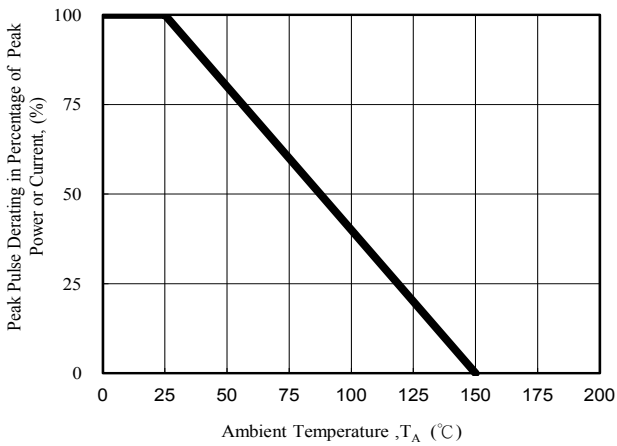


Fig. 1 - Pulse Derating Curve

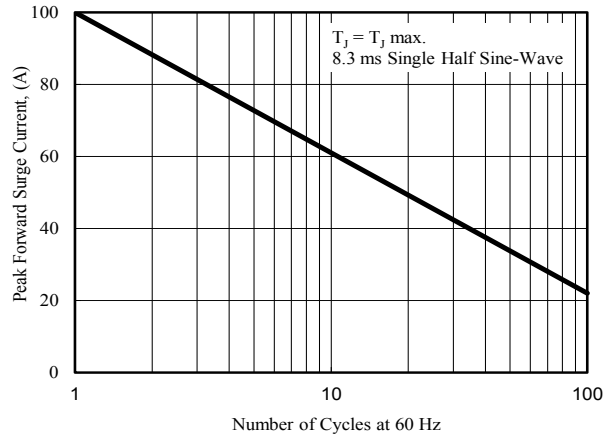


Fig. 2 - Maximum Non-Repetitive Surge Current

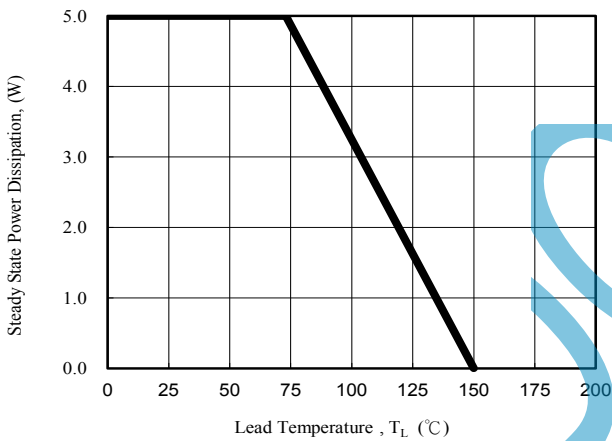


Fig. 3 - Steady State Power Derating Curve

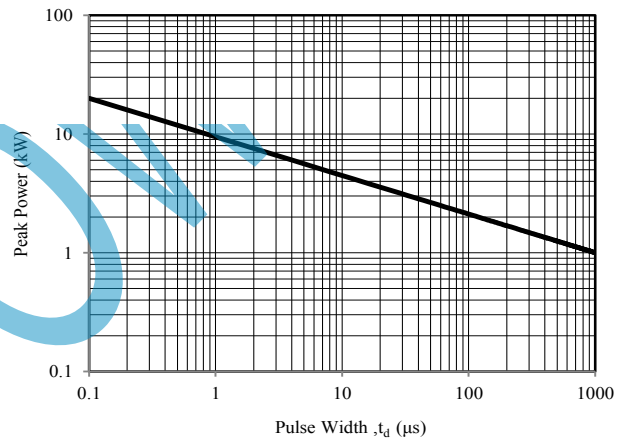


Fig. 4 - Peak Pulse Power Rating Curve

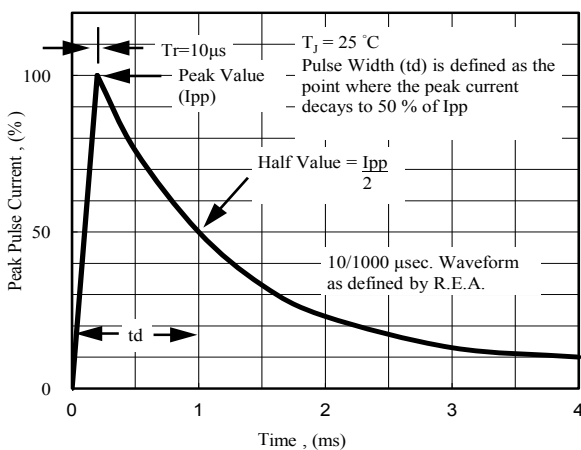


Fig. 5 - Pulse Waveform

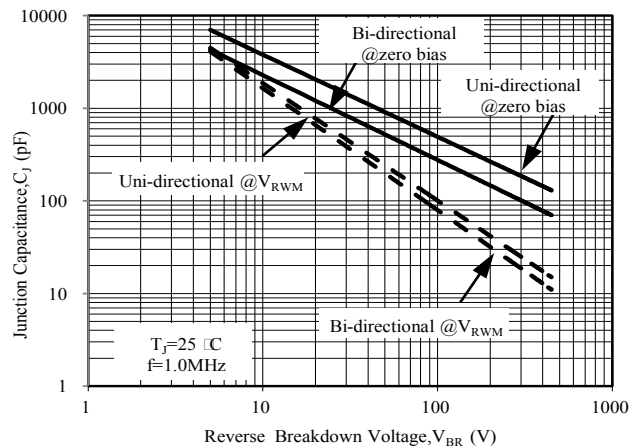


Fig. 6 - Typical Junction Capacitance

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) | | | | |
| SMB10J5.0A | SMB10J5.0CA | AKE | AAE | 6.40 | 7.00 | 10 | 800 | 5.0 | 108.70 | 9.2 |
| SMB10J6.0A | SMB10J6.0CA | AKG | AAG | 6.67 | 7.37 | 10 | 800 | 6.0 | 97.09 | 10.3 |
| SMB10J6.5A | SMB10J6.5CA | AKK | AAK | 7.22 | 7.98 | 10 | 500 | 6.5 | 89.29 | 11.2 |
| SMB10J7.0A | SMB10J7.0CA | AKM | AAM | 7.78 | 8.60 | 10 | 200 | 7.0 | 83.33 | 12.0 |
| SMB10J7.5A | SMB10J7.5CA | AKP | AAP | 8.33 | 9.21 | 1 | 100 | 7.5 | 77.52 | 12.9 |
| SMB10J8.0A | SMB10J8.0CA | AKR | AAR | 8.89 | 9.83 | 1 | 50 | 8.0 | 73.53 | 13.6 |
| SMB10J8.5A | SMB10J8.5CA | AKT | AAT | 9.44 | 10.40 | 1 | 10 | 8.5 | 69.44 | 14.4 |
| SMB10J9.0A | SMB10J9.0CA | AKV | AAV | 10.00 | 11.10 | 1 | 5.0 | 9.0 | 64.94 | 15.4 |
| SMB10J10A | SMB10J10CA | AKX | AAX | 11.10 | 12.30 | 1 | 5.0 | 10.0 | 58.82 | 17.0 |
| SMB10J11A | SMB10J11CA | AKZ | AAZ | 12.20 | 13.50 | 1 | 5.0 | 11.0 | 54.95 | 18.2 |
| SMB10J12A | SMB10J12CA | ALE | ABE | 13.30 | 14.70 | 1 | 5.0 | 12.0 | 50.25 | 19.9 |
| SMB10J13A | SMB10J13CA | ALG | ABG | 14.40 | 15.90 | 1 | 1.0 | 13.0 | 46.51 | 21.5 |
| SMB10J14A | SMB10J14CA | ALK | ABK | 15.60 | 17.20 | 1 | 1.0 | 14.0 | 43.10 | 23.2 |
| SMB10J15A | SMB10J15CA | ALM | ABM | 16.70 | 18.50 | 1 | 1.0 | 15.0 | 40.98 | 24.4 |
| SMB10J16A | SMB10J16CA | ALP | ABP | 17.80 | 19.70 | 1 | 1.0 | 16.0 | 38.46 | 26.0 |
| SMB10J17A | SMB10J17CA | ALR | ABR | 18.90 | 20.90 | 1 | 1.0 | 17.0 | 36.23 | 27.6 |
| SMB10J18A | SMB10J18CA | ALT | ABT | 20.00 | 22.10 | 1 | 1.0 | 18.0 | 34.25 | 29.2 |
| SMB10J19A | SMB10J19CA | ALB | ABB | 21.10 | 23.30 | 1 | 1.0 | 19.0 | 32.49 | 30.8 |
| SMB10J20A | SMB10J20CA | ALV | ABV | 22.20 | 24.50 | 1 | 1.0 | 20.0 | 30.86 | 32.4 |
| SMB10J22A | SMB10J22CA | ALX | ABX | 24.40 | 26.90 | 1 | 1.0 | 22.0 | 28.17 | 35.5 |
| SMB10J24A | SMB10J24CA | ALZ | ABZ | 26.70 | 29.50 | 1 | 1.0 | 24.0 | 25.71 | 38.9 |
| SMB10J26A | SMB10J26CA | AME | ACE | 28.90 | 31.90 | 1 | 1.0 | 26.0 | 23.75 | 42.1 |
| SMB10J28A | SMB10J28CA | AMG | ACG | 31.10 | 34.40 | 1 | 1.0 | 28.0 | 22.03 | 45.4 |
| SMB10J30A | SMB10J30CA | AMK | ACK | 33.30 | 36.80 | 1 | 1.0 | 30.0 | 20.66 | 48.4 |
| SMB10J33A | SMB10J33CA | AMM | ACM | 36.70 | 40.60 | 1 | 1.0 | 33.0 | 18.76 | 53.3 |
| SMB10J36A | SMB10J36CA | AMP | ACP | 40.00 | 44.20 | 1 | 1.0 | 36.0 | 17.21 | 58.1 |
| SMB10J40A | SMB10J40CA | AMR | ACR | 44.40 | 49.10 | 1 | 1.0 | 40.0 | 15.50 | 64.5 |
| SMB10J43A | SMB10J43CA | AMT | ACT | 47.80 | 52.80 | 1 | 1.0 | 43.0 | 14.41 | 69.4 |
| SMB10J45A | SMB10J45CA | AMV | ACV | 50.00 | 55.30 | 1 | 1.0 | 45.0 | 13.76 | 72.7 |
| SMB10J48A | SMB10J48CA | AMX | ACX | 53.30 | 58.90 | 1 | 1.0 | 48.0 | 12.92 | 77.4 |
| SMB10J51A | SMB10J51CA | AMZ | ACZ | 56.70 | 62.70 | 1 | 1.0 | 51.0 | 12.14 | 82.4 |
| SMB10J54A | SMB10J54CA | ANE | ADE | 60.00 | 66.30 | 1 | 1.0 | 54.0 | 11.48 | 87.1 |
| SMB10J58A | SMB10J58CA | ANG | ADG | 64.40 | 71.20 | 1 | 1.0 | 58.0 | 10.68 | 93.6 |
| SMB10J60A | SMB10J60CA | ANK | ADK | 66.70 | 73.70 | 1 | 1.0 | 60.0 | 10.33 | 96.8 |
| SMB10J64A | SMB10J64CA | ANM | ADM | 71.10 | 78.60 | 1 | 1.0 | 64.0 | 9.71 | 103.0 |
| SMB10J70A | SMB10J70CA | ANP | ADP | 77.80 | 86.00 | 1 | 1.0 | 70.0 | 8.85 | 113.0 |
| SMB10J75A | SMB10J75CA | ANR | ADR | 83.30 | 92.10 | 1 | 1.0 | 75.0 | 8.26 | 121.0 |
| SMB10J78A | SMB10J78CA | ANT | ADT | 86.70 | 95.80 | 1 | 1.0 | 78.0 | 7.94 | 126.0 |
| SMB10J80A | SMB10J80CA | ANB | ADB | 88.80 | 97.60 | 1 | 1.0 | 80.0 | 7.72 | 129.6 |
| SMB10J85A | SMB10J85CA | ANV | ADV | 94.40 | 104.00 | 1 | 1.0 | 85.0 | 7.30 | 137.0 |

Note:

1. 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