

1. 0SMBJ SERIES

TRANSIENT VOLTAGE SUPPRESSOR
PEAK PULSE POWER-1000 Watts

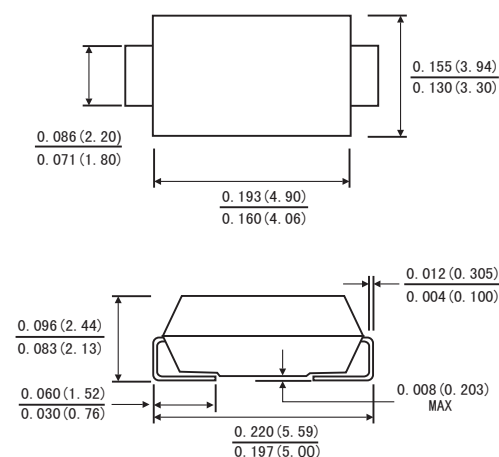
FEATURES

- 1000 Watts Pulse capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component in accordance to RoHS 2011/65/EU

MECHANICAL DATA

- Case: JEDEC SMB(DO-214AA) molded plastic body
- Terminals: Solder Plated
- Polarity: By cathode band denotes uni-directional device, none cathode band denotes bi-directional device.

SMB(DO-214AA)



Dimensions in inches and (millimeters)

DEVICES FOR BIDIRECTIONAL APPLICATIONS

1. For bi-directional use C suffix for Types .
2. Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating at 25°C ambient temperature unless otherwise specified)

| | Symbols | Value | Units |
|------------------------------------------------------------------------------------------------------------|-----------------------------------|------------|-------|
| Peak Pulse Power Dissipation at on 10/1000μs Waveform (Note 1.2) | P _{PK} | 1000 | Watts |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Note 2) | I _{FSM} | 100 | Amps |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 to 150 | °C |

Note: 1. Non repetitive current pulse and derated above T_A=25°C

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

RATINGS AND CHARACTERISTIC CURVES(1.0SMBJ SERIES)

| Part number | | Reverse Standoff Voltage VRWM (Volts) | Breakdown Voltage VBR (Volts) | | Test Current (mA) | Maximum Clamping Voltage VC@Ipp (Volts) | Maximum Peak Pulse Current Ipp(A) | Maximum Reverse Leakage IR@VRWM (μA) |
|-------------|--------------|---------------------------------------------------|-------------------------------------|-------|-------------------------|-----------------------------------------------------|--------------------------------------------|--------------------------------------------------|
| UNI | BI | | MIN | MAX | | | | |
| 1.0SMBJ5.0A | 1.0SMBJ5.0CA | 5 | 6.40 | 7.00 | 10 | 9.2 | 108.7 | 500 |
| 1.0SMBJ6.0A | 1.0SMBJ6.0CA | 6 | 6.67 | 7.37 | 10 | 10.3 | 97.1 | 500 |
| 1.0SMBJ6.5A | 1.0SMBJ6.5CA | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 89.3 | 200 |
| 1.0SMBJ7.0A | 1.0SMBJ7.0CA | 7 | 7.78 | 8.60 | 10 | 12.0 | 83.4 | 200 |
| 1.0SMBJ7.5A | 1.0SMBJ7.5CA | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 77.6 | 100 |
| 1.0SMBJ8.0A | 1.0SMBJ8.0CA | 8 | 8.89 | 9.83 | 1 | 13.6 | 73.6 | 50 |
| 1.0SMBJ8.5A | 1.0SMBJ8.5CA | 8.5 | 9.44 | 10.40 | 1 | 14.4 | 69.5 | 10 |
| 1.0SMBJ9.0A | 1.0SMBJ9.0CA | 9 | 10.00 | 11.10 | 1 | 15.4 | 65.0 | 5 |
| 1.0SMBJ10A | 1.0SMBJ10CA | 10 | 11.10 | 12.30 | 1 | 17.0 | 58.9 | 5 |
| 1.0SMBJ11A | 1.0SMBJ11CA | 11 | 12.20 | 13.50 | 1 | 18.2 | 55.0 | 5 |
| 1.0SMBJ12A | 1.0SMBJ12CA | 12 | 13.30 | 14.70 | 1 | 19.9 | 50.3 | 5 |
| 1.0SMBJ13A | 1.0SMBJ13CA | 13 | 14.40 | 15.90 | 1 | 21.5 | 46.6 | 5 |
| 1.0SMBJ14A | 1.0SMBJ14CA | 14 | 15.60 | 17.20 | 1 | 23.2 | 43.1 | 5 |
| 1.0SMBJ15A | 1.0SMBJ15CA | 15 | 16.70 | 18.50 | 1 | 24.4 | 41.0 | 5 |
| 1.0SMBJ16A | 1.0SMBJ16CA | 16 | 17.80 | 19.70 | 1 | 26.0 | 38.5 | 5 |
| 1.0SMBJ17A | 1.0SMBJ17CA | 17 | 18.90 | 20.90 | 1 | 27.6 | 36.3 | 5 |
| 1.0SMBJ18A | 1.0SMBJ18CA | 18 | 20.00 | 22.10 | 1 | 29.2 | 34.3 | 5 |
| 1.0SMBJ19A | 1.0SMBJ19CA | 19 | 21.10 | 23.30 | 1 | 30.8 | 32.5 | 5 |
| 1.0SMBJ20A | 1.0SMBJ20CA | 20 | 22.20 | 24.50 | 1 | 32.4 | 30.9 | 5 |
| 1.0SMBJ22A | 1.0SMBJ22CA | 22 | 24.40 | 26.90 | 1 | 35.5 | 28.2 | 5 |
| 1.0SMBJ24A | 1.0SMBJ24CA | 24 | 26.70 | 29.50 | 1 | 38.9 | 25.7 | 5 |
| 1.0SMBJ26A | 1.0SMBJ26CA | 26 | 28.90 | 31.90 | 1 | 42.1 | 23.8 | 5 |
| 1.0SMBJ28A | 1.0SMBJ28CA | 28 | 31.10 | 34.40 | 1 | 45.4 | 22.1 | 5 |
| 1.0SMBJ30A | 1.0SMBJ30CA | 30 | 33.30 | 36.80 | 1 | 48.4 | 20.7 | 5 |
| 1.0SMBJ33A | 1.0SMBJ33CA | 33 | 36.70 | 40.60 | 1 | 53.3 | 18.8 | 5 |
| 1.0SMBJ36A | 1.0SMBJ36CA | 36 | 40.00 | 44.20 | 1 | 58.1 | 17.3 | 5 |
| 1.0SMBJ40A | 1.0SMBJ40CA | 40 | 44.40 | 49.10 | 1 | 64.5 | 15.5 | 5 |
| 1.0SMBJ43A | 1.0SMBJ43CA | 43 | 47.80 | 52.80 | 1 | 69.4 | 14.4 | 5 |
| 1.0SMBJ45A | 1.0SMBJ45CA | 45 | 50.00 | 55.30 | 1 | 72.7 | 13.8 | 5 |
| 1.0SMBJ48A | 1.0SMBJ48CA | 48 | 53.30 | 58.90 | 1 | 77.4 | 13.0 | 5 |
| 1.0SMBJ51A | 1.0SMBJ51CA | 51 | 56.70 | 62.70 | 1 | 82.4 | 12.2 | 5 |
| 1.0SMBJ54A | 1.0SMBJ54CA | 54 | 60.00 | 66.30 | 1 | 87.1 | 11.5 | 5 |
| 1.0SMBJ58A | 1.0SMBJ58CA | 58 | 64.40 | 71.20 | 1 | 93.6 | 10.7 | 5 |
| 1.0SMBJ60A | 1.0SMBJ60CA | 60 | 66.70 | 73.70 | 1 | 96.8 | 10.4 | 5 |

RATINGS AND CHARACTERISTIC CURVES (1.0SMBJ SERIES)

| | | | | | | | | |
|-------------|--------------|-----|-------|--------|---|-------|-----|---|
| 1.0SMBJ64A | 1.0SMBJ64CA | 64 | 71.10 | 78.60 | 1 | 103.0 | 9.7 | 5 |
| 1.0SMBJ70A | 1.0SMBJ70CA | 70 | 77.80 | 86.00 | 1 | 113.0 | 8.9 | 5 |
| 1.0SMBJ75A | 1.0SMBJ75CA | 75 | 83.30 | 92.10 | 1 | 121.0 | 8.3 | 5 |
| 1.0SMBJ78A | 1.0SMBJ78CA | 78 | 86.70 | 95.80 | 1 | 126.0 | 8.0 | 5 |
| 1.0SMBJ80A | 1.0SMBJ80CA | 80 | 88.80 | 97.60 | 1 | 129.6 | 7.7 | 5 |
| 1.0SMBJ85A | 1.0SMBJ85CA | 85 | 94.40 | 104.00 | 1 | 137.0 | 7.3 | 5 |
| 1.0SMBJ90A | 1.0SMBJ90CA | 90 | 100.0 | 111.00 | 1 | 146.0 | 6.9 | 5 |
| 1.0SMBJ100A | 1.0SMBJ100CA | 100 | 111.0 | 123.00 | 1 | 162.0 | 6.2 | 5 |
| 1.0SMBJ110A | 1.0SMBJ110CA | 110 | 122.0 | 135.00 | 1 | 177.0 | 5.7 | 5 |
| 1.0SMBJ120A | 1.0SMBJ120CA | 120 | 133.0 | 147.00 | 1 | 193.0 | 5.2 | 5 |
| 1.0SMBJ130A | 1.0SMBJ130CA | 130 | 144.0 | 159.00 | 1 | 209.0 | 4.8 | 5 |
| 1.0SMBJ140A | 1.0SMBJ140CA | 140 | 155.0 | 171.00 | 1 | 226.8 | 4.4 | 5 |
| 1.0SMBJ150A | 1.0SMBJ150CA | 150 | 167.0 | 185.00 | 1 | 243.0 | 4.2 | 5 |
| 1.0SMBJ160A | 1.0SMBJ160CA | 160 | 178.0 | 197.00 | 1 | 259.0 | 3.9 | 5 |
| 1.0SMBJ170A | 1.0SMBJ170CA | 170 | 189.0 | 209.00 | 1 | 275.0 | 3.7 | 5 |
| 1.0SMBJ180A | 1.0SMBJ180CA | 180 | 201.0 | 222.00 | 1 | 292.0 | 3.5 | 5 |
| 1.0SMBJ190A | 1.0SMBJ190CA | 190 | 211.0 | 233.00 | 1 | 306.0 | 3.3 | 5 |
| 1.0SMBJ200A | 1.0SMBJ200CA | 200 | 224.0 | 247.00 | 1 | 324.0 | 3.1 | 5 |

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double

1.A transient suppressor is normally selected according to the working peak reverse voltage (VRWM), which should be equal to or greater than the DC or continuous peak operating voltage level.

2.VBR measured at pulse test current IT at an ambient temperature of 25°C.

3.Surge current waveform per Figure 2 and derate per Figure 3

RATINGS AND CHARACTERISTIC CURVES (1.0SMBJ SERIES)

FIG. 1-PEAK PULSE POWER CURVE

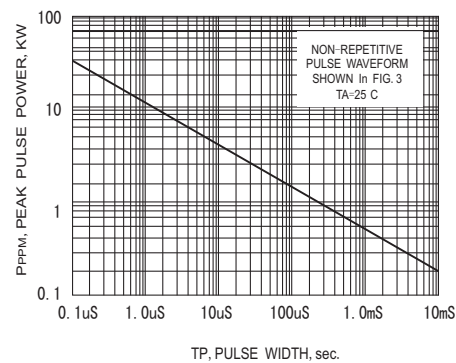


FIG. 2-PULSE DERATING CURVE

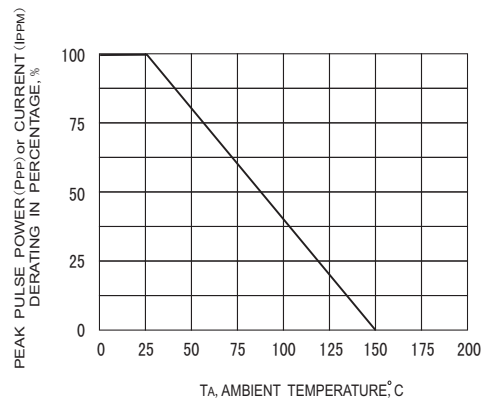


FIG. 3-PULSE WAVEFORM

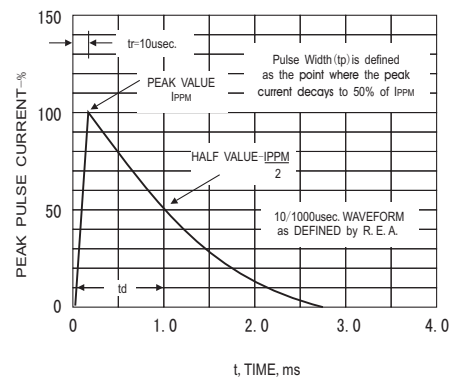


FIG. 4-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

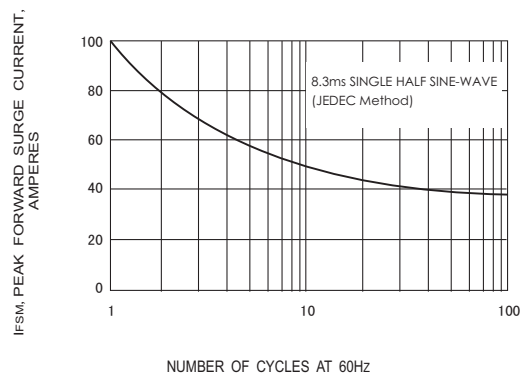


FIG. 5-Steady State Power Derating Curve

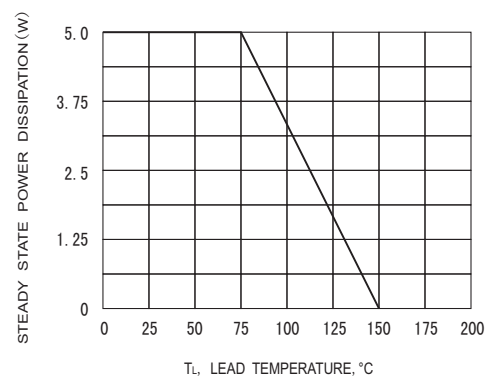


FIG. 6-TYPICAL JUNCTION CAPACITANCE

