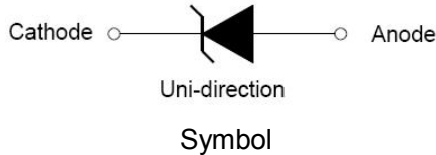


SMB

Features

Peak power dissipation 600W@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: SMBJ(DO-214AA) Molded Plastic
 Polarity: By cathode band denotes uni-directional device,
 none cathode band denotes bi-directional device
 Mounting Position:Any

Making Code & information

Cathode Band

SMBJ
XXXA

| Package | Packing Description | Packing Quantity |
|---------|---------------------|------------------|
| SMB | Tape/Reel, 13" reel | 3000 |

SMBJ XXX C A

Series Code V_{RWM} Voltage Bidirectional 5% V_{BR} Voltage Tolerance

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 600 | W |
| Power Dissipation on Infinite Heat Sink at $T_L=50^\circ\text{C}$ | P_D | 5 | 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} | 100 | A |
| Operating Junction Temperature Range | T_J | -55 to 150 | °C |
| Storage Temperature Range | T_{STG} | -55 to 150 | °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 | | Reverse Stand-Off Voltage | Breakdown Voltage Min. @I _T | Breakdown Voltage Max. @ I _T | Test Current | Maximum Clamping Voltage | Peak Pulse Current | Reverse Leakage @V _{RMW} |
|-------------|-----------|---------------------------|--|---|---------------------|--------------------------|---------------------|-----------------------------------|
| (Uni) | (Bi) | V _{RMW} (V) | V _{BR MIN} (V) | V _{BR MAX} (V) | I _T (mA) | V _C (V) | I _{PP} (A) | I _R (μ A) |
| SMBJ5.0A | SMBJ5.0CA | 5.0 | 6.40 | 7.00 | 10 | 9.2 | 65.3 | 500 |
| SMBJ6.0A | SMBJ6.0CA | 6.0 | 6.67 | 7.37 | 10 | 10.3 | 58.3 | 500 |
| SMBJ6.5A | SMBJ6.5CA | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 53.6 | 300 |
| SMBJ7.0A | SMBJ7.0CA | 7.0 | 7.78 | 8.60 | 10 | 12.0 | 50.0 | 200 |
| SMBJ7.5A | SMBJ7.5CA | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 46.6 | 100 |
| SMBJ8.0A | SMBJ8.0CA | 8.0 | 8.89 | 9.83 | 1 | 13.6 | 44.2 | 50 |
| SMBJ8.5A | SMBJ8.5CA | 8.5 | 9.44 | 10.40 | 1 | 14.4 | 41.7 | 20 |
| SMBJ9.0A | SMBJ9.0CA | 9.0 | 10.00 | 11.10 | 1 | 15.4 | 39.0 | 10 |
| SMBJ10A | SMBJ10CA | 10.0 | 11.10 | 12.30 | 1 | 17.0 | 35.3 | 5 |
| SMBJ11A | SMBJ11CA | 11.0 | 12.20 | 13.50 | 1 | 18.2 | 33.0 | 2 |
| SMBJ12A | SMBJ12CA | 12.0 | 13.30 | 14.70 | 1 | 19.9 | 30.2 | 1 |
| SMBJ13A | SMBJ13CA | 13.0 | 14.40 | 15.90 | 1 | 21.5 | 27.9 | 1 |
| SMBJ14A | SMBJ14CA | 14.0 | 15.60 | 17.20 | 1 | 23.2 | 25.9 | 1 |
| SMBJ15A | SMBJ15CA | 15.0 | 16.70 | 18.50 | 1 | 24.4 | 24.6 | 1 |
| SMBJ16A | SMBJ16CA | 16.0 | 17.80 | 19.70 | 1 | 26.0 | 23.1 | 1 |
| SMBJ17A | SMBJ17CA | 17.0 | 18.90 | 20.90 | 1 | 27.6 | 21.8 | 1 |
| SMBJ18A | SMBJ18CA | 18.0 | 20.00 | 22.10 | 1 | 29.2 | 20.6 | 1 |
| SMBJ20A | SMBJ20CA | 20.0 | 22.20 | 24.50 | 1 | 32.4 | 18.6 | 1 |
| SMBJ22A | SMBJ22CA | 22.0 | 24.40 | 26.90 | 1 | 35.5 | 16.9 | 1 |
| SMBJ24A | SMBJ24CA | 24.0 | 26.70 | 29.50 | 1 | 38.9 | 15.5 | 1 |
| SMBJ26A | SMBJ26CA | 26.0 | 28.90 | 31.90 | 1 | 42.1 | 14.3 | 1 |
| SMBJ28A | SMBJ28CA | 28.0 | 31.10 | 34.40 | 1 | 45.4 | 13.3 | 1 |
| SMBJ30A | SMBJ30CA | 30.0 | 33.30 | 36.80 | 1 | 48.4 | 12.4 | 1 |
| SMBJ33A | SMBJ33CA | 33.0 | 36.70 | 40.60 | 1 | 53.3 | 11.3 | 1 |
| SMBJ36A | SMBJ36CA | 36.0 | 40.00 | 44.20 | 1 | 58.1 | 10.4 | 1 |
| SMBJ40A | SMBJ40CA | 40.0 | 44.40 | 49.10 | 1 | 64.5 | 9.3 | 1 |
| SMBJ43A | SMBJ43CA | 43.0 | 47.80 | 52.80 | 1 | 69.4 | 8.7 | 1 |
| SMBJ45A | SMBJ45CA | 45.0 | 50.00 | 55.30 | 1 | 72.7 | 8.3 | 1 |
| SMBJ48A | SMBJ48CA | 48.0 | 53.30 | 5.890 | 1 | 77.4 | 7.8 | 1 |
| SMBJ51A | SMBJ51CA | 51.0 | 56.70 | 62.70 | 1 | 82.4 | 7.3 | 1 |
| SMBJ54A | SMBJ54CA | 54.0 | 60.00 | 66.30 | 1 | 87.1 | 6.9 | 1 |
| SMBJ58A | SMBJ58CA | 58.0 | 64.4 | 71.20 | 1 | 93.6 | 6.5 | 1 |
| SMBJ60A | SMBJ60CA | 60.0 | 66.7 | 73.70 | 1 | 96.8 | 6.2 | 1 |
| SMBJ64A | SMBJ64CA | 64.0 | 71.1 | 78.60 | 1 | 103.0 | 5.9 | 1 |
| SMBJ70A | SMBJ70CA | 70.0 | 77.8 | 86.00 | 1 | 113.0 | 5.3 | 1 |
| SMBJ75A | SMBJ75CA | 75.0 | 83.3 | 92.10 | 1 | 121.0 | 5.0 | 1 |
| SMBJ78A | SMBJ78CA | 78.0 | 86.7 | 95.80 | 1 | 126.0 | 4.8 | 1 |
| SMBJ85A | SMBJ85CA | 85.0 | 94.4 | 104.00 | 1 | 137.0 | 4.4 | 1 |
| SMBJ90A | SMBJ90CA | 90.0 | 100.0 | 111.00 | 1 | 146.0 | 4.1 | 1 |
| SMBJ100A | SMBJ100CA | 100.0 | 111.0 | 123.00 | 1 | 162.0 | 3.7 | 1 |
| SMBJ110A | SMBJ110CA | 110.0 | 122.00 | 135.00 | 1 | 177.0 | 3.4 | 1 |
| SMBJ120A | SMBJ120CA | 120.0 | 133.00 | 147.00 | 1 | 193.0 | 3.1 | 1 |
| SMBJ130A | SMBJ130CA | 130.0 | 144.00 | 159.00 | 1 | 209.0 | 2.9 | 1 |
| SMBJ150A | SMBJ150CA | 150.0 | 167.00 | 185.00 | 1 | 243.0 | 2.5 | 1 |
| SMBJ160A | SMBJ160CA | 160.0 | 178.00 | 197.00 | 1 | 259.0 | 2.3 | 1 |
| SMBJ170A | SMBJ170CA | 170.0 | 189.00 | 209.00 | 1 | 275.0 | 2.2 | 1 |
| SMBJ180A | SMBJ180CA | 180.0 | 201.00 | 222.00 | 1 | 292.0 | 2.1 | 1 |
| SMBJ188A | SMBJ188CA | 188.0 | 209.00 | 231.00 | 1 | 304.0 | 2.0 | 1 |
| SMBJ200A | SMBJ200CA | 200.0 | 224.00 | 247.00 | 1 | 324.0 | 1.9 | 1 |
| SMBJ210A | SMBJ210CA | 210.0 | 237.00 | 263.00 | 1 | 340.0 | 1.8 | 1 |
| SMBJ220A | SMBJ220CA | 220.0 | 246.00 | 272.00 | 1 | 356.0 | 1.7 | 1 |
| SMBJ250A | SMBJ250CA | 250.0 | 279.00 | 309.00 | 1 | 405.0 | 1.5 | 1 |
| SMBJ300A | SMBJ300CA | 300.0 | 335.00 | 371.00 | 1 | 486.0 | 1.3 | 1 |
| SMBJ350A | SMBJ350CA | 350.0 | 391.00 | 432.00 | 1 | 567.0 | 1.1 | 1 |
| SMBJ400A | SMBJ400CA | 400.0 | 447.00 | 494.00 | 1 | 648.0 | 0.9 | 1 |
| SMBJ440A | SMBJ440CA | 440.0 | 492.00 | 543.00 | 1 | 713.0 | 0.9 | 1 |

Notes: 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 \pm 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

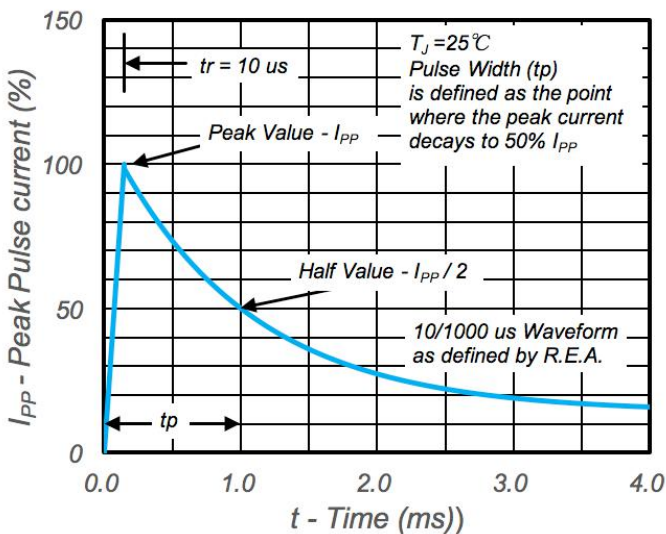


Fig. 3 - Pulse Waveform

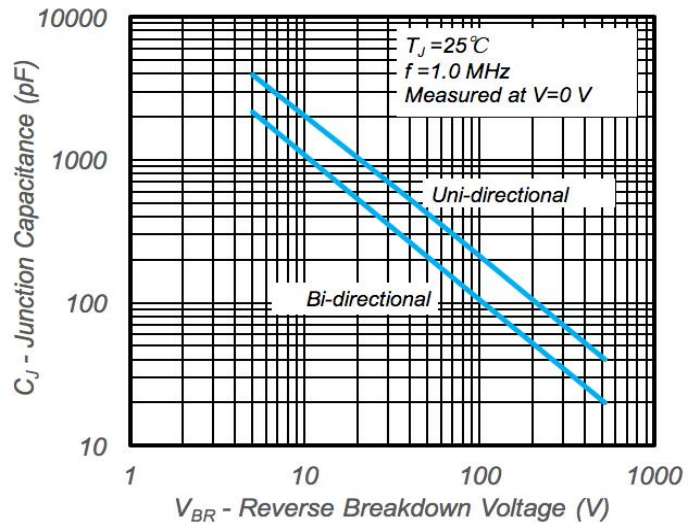


Fig. 4 - Typical Junction Capacitance

Package Outline Dimensions: SMB(DO-214AA)

| Dim | Millimeters | | Inches | |
|-----|-------------|------|--------|-------|
| | Min | Max | Min | Max |
| L | 4.4 | 4.6 | 0.173 | 0.181 |
| D | 3.5 | 3.7 | 0.138 | 0.146 |
| D1 | 1.9 | 2.1 | 0.075 | 0.083 |
| T | 5.1 | 5.48 | 0.201 | 0.216 |
| T1 | 1.0 | 1.6 | 0.039 | 0.063 |
| d | - | 0.2 | - | 0.008 |
| H | 2.2 | 2.45 | 0.087 | 0.096 |
| H1 | 2.15 | 2.35 | 0.085 | 0.093 |

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[P6KE13CA](#) [P6KE43CA](#) [P6KE6.8CA](#) [P6KE8.2](#) [P6SMBJ20CA](#) [JANTX1N6072A](#) [SR2835ESKG](#) [SA90CA](#)