

SMBJ 5.0 - 188A

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Stand-off Voltage : 5.0 to 188V

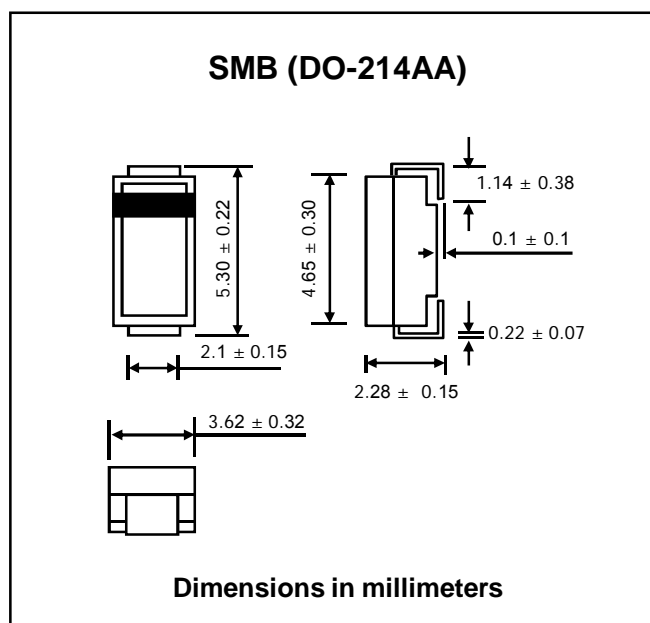
Peak Pulse Power : 600 W

FEATURES :

- * 600W peak pulse power capability with a 10/1000 μ s waveform
- * Excellent clamping capability
- * Very fast response time
- * Pb / RoHS Free

MECHANICAL DATA

- * Case : SMB Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.108 gram



DEVICES FOR BIPOLAR APPLICATIONS

- For Bi-directional use C or CA Suffix
- Electrical characteristics apply in both directions

MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Units |
|--|-----------------------------------|---------------|-------|
| Peak Pulse Power Dissipation on 10/1000 μ s waveform ⁽¹⁾⁽²⁾ (Fig. 3) | P _{PPM} | Minimum 600 | W |
| Peak Pulse Current on 10/1000 μ s waveform ⁽¹⁾ (Fig. 5) | I _{PPM} | See Table | A |
| Maximum Peak forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method) ⁽²⁾ | I _{FSM} | 100 | A |
| Maximum Instantaneous Forward Voltage at I _F = 50A | V _{FM} | 3.5 | V |
| Typical Thermal resistance, Junction to ambient | R _{θJA} | 100 | °C/W |
| Operating Junction and Storage Temperature Range | T _J , T _{STG} | - 55 to + 150 | °C |

Notes :

(1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1

(2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal.

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Type No. | Breakdown Voltage @ $I_T^{(1)}$ | | Reverse Stand-off Voltage | Maximum Reverse Leakage @ V_{WM} | Maximum Peak Pulse Surge Current | Maximum Clamping Voltage @ I_{PPM} | |
|-------------------------|---------------------------------|------|---------------------------|------------------------------------|----------------------------------|--------------------------------------|------|
| | V_{BR} (V) | | V_{WM} | $I_R^{(3)}$ | $I_{PPM}^{(2)}$ | V_C | |
| | Min. | Max. | (V) | (μ A) | (A) | (V) | |
| SMBJ5.0 | 6.40 | 7.82 | 10 | 5.0 | 800 | 62.5 | 9.6 |
| SMBJ5.0A ⁽⁴⁾ | 6.40 | 7.07 | 10 | 5.0 | 800 | 65.2 | 9.2 |
| SMBJ6.0 | 6.67 | 8.15 | 10 | 6.0 | 800 | 52.6 | 11.4 |
| SMBJ6.0A | 6.67 | 7.37 | 10 | 6.0 | 800 | 58.3 | 10.3 |
| SMBJ6.5 | 7.22 | 8.82 | 10 | 6.5 | 500 | 48.7 | 12.3 |
| SMBJ6.5A | 7.22 | 7.98 | 10 | 6.5 | 500 | 53.6 | 11.2 |
| SMBJ7.0 | 7.78 | 9.51 | 10 | 7.0 | 200 | 45.1 | 13.3 |
| SMBJ7.0A | 7.78 | 8.6 | 10 | 7.0 | 200 | 50.0 | 12.0 |
| SMBJ7.5 | 8.33 | 10.2 | 1.0 | 7.5 | 100 | 42.0 | 14.3 |
| SMBJ7.5A | 8.33 | 9.21 | 1.0 | 7.5 | 100 | 46.5 | 12.9 |
| SMBJ8.0 | 8.89 | 10.9 | 1.0 | 8.0 | 50 | 40.0 | 15.0 |
| SMBJ8.0A | 8.89 | 9.83 | 1.0 | 8.0 | 50 | 44.1 | 13.6 |
| SMBJ8.5 | 9.44 | 11.5 | 1.0 | 8.5 | 10 | 37.7 | 15.9 |
| SMBJ8.5A | 9.44 | 10.4 | 1.0 | 8.5 | 10 | 41.7 | 14.4 |
| SMBJ9.0 | 10.0 | 12.2 | 1.0 | 9.0 | 5.0 | 35.5 | 16.9 |
| SMBJ9.0A | 10.0 | 11.1 | 1.0 | 9.0 | 5.0 | 39.0 | 15.4 |
| SMBJ10 | 11.1 | 13.6 | 1.0 | 10 | 1.0 | 31.9 | 18.8 |
| SMBJ10A | 11.1 | 12.3 | 1.0 | 10 | 1.0 | 35.3 | 17.0 |
| SMBJ11 | 12.2 | 14.9 | 1.0 | 11 | 1.0 | 29.9 | 20.1 |
| SMBJ11A | 12.2 | 13.5 | 1.0 | 11 | 1.0 | 33.0 | 18.2 |
| SMBJ12 | 13.3 | 16.3 | 1.0 | 12 | 1.0 | 27.3 | 22.0 |
| SMBJ12A | 13.3 | 14.7 | 1.0 | 12 | 1.0 | 30.2 | 19.9 |
| SMBJ13 | 14.4 | 17.6 | 1.0 | 13 | 1.0 | 25.2 | 23.8 |
| SMBJ13A | 14.4 | 15.9 | 1.0 | 13 | 1.0 | 27.9 | 21.5 |
| SMBJ14 | 15.6 | 19.1 | 1.0 | 14 | 1.0 | 23.3 | 25.8 |
| SMBJ14A | 15.6 | 17.2 | 1.0 | 14 | 1.0 | 25.8 | 23.2 |
| SMBJ15 | 16.7 | 20.4 | 1.0 | 15 | 1.0 | 22.3 | 26.9 |
| SMBJ15A | 16.7 | 18.5 | 1.0 | 15 | 1.0 | 24.0 | 24.4 |
| SMBJ16 | 17.8 | 21.8 | 1.0 | 16 | 1.0 | 20.8 | 28.8 |
| SMBJ16A | 17.8 | 19.7 | 1.0 | 16 | 1.0 | 23.1 | 26.0 |
| SMBJ17 | 18.9 | 23.1 | 1.0 | 17 | 1.0 | 19.7 | 30.5 |
| SMBJ17A | 18.9 | 20.9 | 1.0 | 17 | 1.0 | 21.7 | 27.6 |
| SMBJ18 | 20.0 | 24.4 | 1.0 | 18 | 1.0 | 18.6 | 32.2 |
| SMBJ18A | 20.0 | 22.1 | 1.0 | 18 | 1.0 | 20.5 | 29.2 |
| SMBJ20 | 22.2 | 27.1 | 1.0 | 20 | 1.0 | 16.7 | 35.8 |
| SMBJ20A | 22.2 | 24.5 | 1.0 | 20 | 1.0 | 18.5 | 32.4 |
| SMBJ22 | 24.4 | 29.8 | 1.0 | 22 | 1.0 | 15.2 | 39.4 |
| SMBJ22A | 24.4 | 26.9 | 1.0 | 22 | 1.0 | 16.9 | 35.5 |
| SMBJ24 | 26.7 | 32.6 | 1.0 | 24 | 1.0 | 14.0 | 43.0 |
| SMBJ24A | 26.7 | 29.5 | 1.0 | 24 | 1.0 | 15.4 | 38.9 |
| SMBJ26 | 28.9 | 35.3 | 1.0 | 26 | 1.0 | 12.4 | 46.6 |
| SMBJ26A | 28.9 | 31.9 | 1.0 | 26 | 1.0 | 14.2 | 42.1 |
| SMBJ28 | 31.1 | 38 | 1.0 | 28 | 1.0 | 12.0 | 50.0 |
| SMBJ28A | 31.1 | 34.4 | 1.0 | 28 | 1.0 | 13.2 | 45.4 |
| SMBJ30 | 33.3 | 40.7 | 1.0 | 30 | 1.0 | 11.2 | 53.5 |
| SMBJ30A | 33.3 | 36.8 | 1.0 | 30 | 1.0 | 12.4 | 48.4 |
| SMBJ33 | 36.7 | 44.9 | 1.0 | 33 | 1.0 | 10.2 | 59.0 |
| SMBJ33A | 36.7 | 40.6 | 1.0 | 33 | 1.0 | 11.3 | 53.3 |
| SMBJ36 | 40.0 | 48.9 | 1.0 | 36 | 1.0 | 9.3 | 64.3 |
| SMBJ36A | 40.0 | 44.2 | 1.0 | 36 | 1.0 | 10.3 | 58.1 |

ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| Type No. | Breakdown Voltage @ $I_T^{(1)}$ | | Reverse Stand-off Voltage | Maximum Reverse Leakage @ V_{WM} | Maximum Peak Pulse Surge Current | Maximum Clamping Voltage @ I_{PPM} | |
|----------|---------------------------------|------|---------------------------|------------------------------------|----------------------------------|--------------------------------------|------|
| | V_{BR} (V) | | V_{WM} | $I_R^{(3)}$ | $I_{PPM}^{(2)}$ | V_C | |
| | Min. | Max. | (V) | (μ A) | (A) | (V) | |
| SMBJ40 | 44.4 | 54.3 | 1.0 | 40 | 1.0 | 8.4 | 71.4 |
| SMBJ40A | 44.4 | 49.1 | 1.0 | 40 | 1.0 | 9.3 | 64.5 |
| SMBJ43 | 47.8 | 58.4 | 1.0 | 43 | 1.0 | 7.8 | 76.7 |
| SMBJ43A | 47.8 | 52.8 | 1.0 | 43 | 1.0 | 8.6 | 69.4 |
| SMBJ45 | 50.0 | 61.1 | 1.0 | 45 | 1.0 | 7.5 | 80.3 |
| SMBJ45A | 50.0 | 55.3 | 1.0 | 45 | 1.0 | 8.3 | 72.7 |
| SMBJ48 | 53.3 | 65.1 | 1.0 | 48 | 1.0 | 7.0 | 85.5 |
| SMBJ48A | 53.3 | 58.9 | 1.0 | 48 | 1.0 | 7.7 | 77.4 |
| SMBJ51 | 56.7 | 69.3 | 1.0 | 51 | 1.0 | 6.6 | 91.1 |
| SMBJ51A | 56.7 | 62.7 | 1.0 | 51 | 1.0 | 7.3 | 82.4 |
| SMBJ54 | 60.0 | 73.3 | 1.0 | 54 | 1.0 | 6.2 | 96.3 |
| SMBJ54A | 60.0 | 66.3 | 1.0 | 54 | 1.0 | 6.9 | 87.1 |
| SMBJ58 | 64.4 | 78.7 | 1.0 | 58 | 1.0 | 5.8 | 103 |
| SMBJ58A | 64.4 | 71.2 | 1.0 | 58 | 1.0 | 6.4 | 93.6 |
| SMBJ60 | 66.7 | 81.5 | 1.0 | 60 | 1.0 | 5.6 | 107 |
| SMBJ60A | 66.7 | 73.7 | 1.0 | 60 | 1.0 | 6.2 | 96.8 |
| SMBJ64 | 71.1 | 86.9 | 1.0 | 64 | 1.0 | 5.3 | 114 |
| SMBJ64A | 71.1 | 78.6 | 1.0 | 64 | 1.0 | 5.8 | 103 |
| SMBJ70 | 77.8 | 95.1 | 1.0 | 70 | 1.0 | 4.8 | 125 |
| SMBJ70A | 77.8 | 86.0 | 1.0 | 70 | 1.0 | 5.3 | 113 |
| SMBJ75 | 83.3 | 102 | 1.0 | 75 | 1.0 | 4.5 | 134 |
| SMBJ75A | 83.3 | 92.1 | 1.0 | 75 | 1.0 | 4.9 | 121 |
| SMBJ78 | 86.7 | 106 | 1.0 | 78 | 1.0 | 4.3 | 139 |
| SMBJ78A | 86.7 | 95.8 | 1.0 | 78 | 1.0 | 4.7 | 126 |
| SMBJ85 | 94.4 | 115 | 1.0 | 85 | 1.0 | 3.9 | 151 |
| SMBJ85A | 94.4 | 104 | 1.0 | 85 | 1.0 | 4.4 | 137 |
| SMBJ90 | 100 | 122 | 1.0 | 90 | 1.0 | 3.8 | 160 |
| SMBJ90A | 100 | 111 | 1.0 | 90 | 1.0 | 4.1 | 146 |
| SMBJ100 | 111 | 136 | 1.0 | 100 | 1.0 | 3.4 | 179 |
| SMBJ100A | 111 | 123 | 1.0 | 100 | 1.0 | 3.7 | 162 |
| SMBJ110 | 122 | 149 | 1.0 | 110 | 1.0 | 3.0 | 196 |
| SMBJ110A | 122 | 135 | 1.0 | 110 | 1.0 | 3.4 | 177 |
| SMBJ120 | 133 | 163 | 1.0 | 120 | 1.0 | 2.8 | 214 |
| SMBJ120A | 133 | 147 | 1.0 | 120 | 1.0 | 3.1 | 193 |
| SMBJ130 | 144 | 176 | 1.0 | 130 | 1.0 | 2.6 | 231 |
| SMBJ130A | 144 | 159 | 1.0 | 130 | 1.0 | 2.9 | 209 |
| SMBJ150 | 167 | 204 | 1.0 | 150 | 1.0 | 2.2 | 268 |
| SMBJ150A | 167 | 185 | 1.0 | 150 | 1.0 | 2.5 | 243 |
| SMBJ160 | 178 | 218 | 1.0 | 160 | 1.0 | 2.1 | 287 |
| SMBJ160A | 178 | 197 | 1.0 | 160 | 1.0 | 2.3 | 259 |
| SMBJ170 | 189 | 231 | 1.0 | 170 | 1.0 | 2.0 | 304 |
| SMBJ170A | 189 | 209 | 1.0 | 170 | 1.0 | 2.2 | 275 |
| SMBJ188 | 209 | 255 | 1.0 | 188 | 1.0 | 1.7 | 344 |
| SMBJ188A | 209 | 231 | 1.0 | 188 | 1.0 | 2.0 | 328 |

Notes:

- (1) Pulse test : $t_p \leq 50$ ms.
- (2) Surge Current Waveform per Figure 5 and Derate per Figure 1
- (3) For bi-directional types have V_{WM} of 10 Volts and less, the I_R limit is doubled
- (4) For the bi-directional SMBJ5.0CA, the maximum V_{BR} is 7.25V
- (5) "SMBJ" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (SMBJ5.0 - SMBJ188A)

FIG.1 - PULSE DERATING CURVE

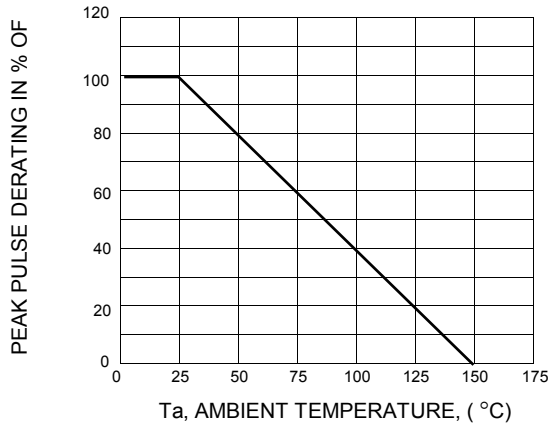


FIG.2 - MAXIMUM NON-REPETITIVE PERK FORWARD SURGE CURRENT

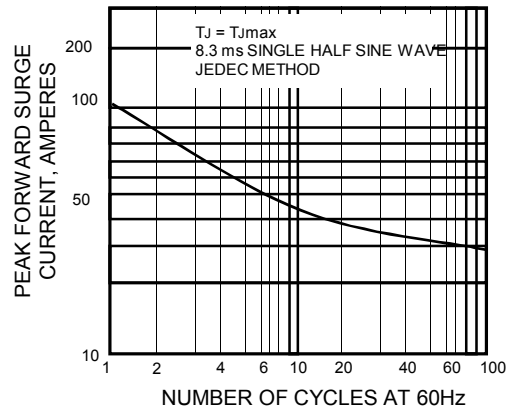


FIG.3 - TYPICAL JUNCTION CAPACITANCE

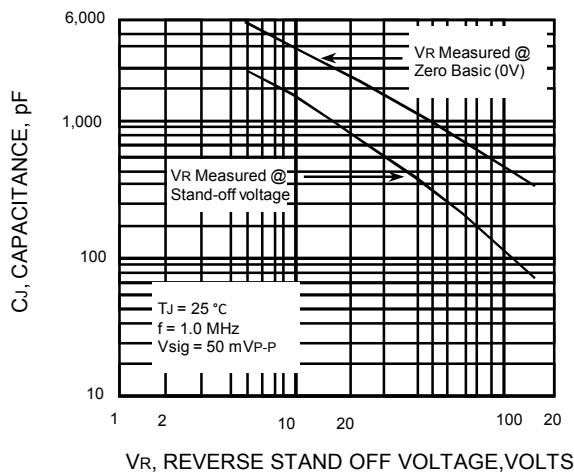


FIG.4 - PEAK PULSE POWER RATING CURVE

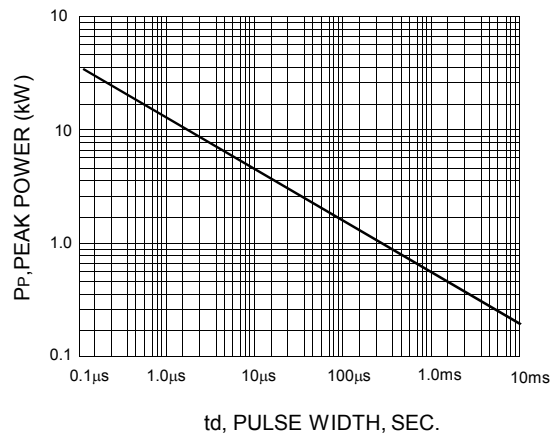
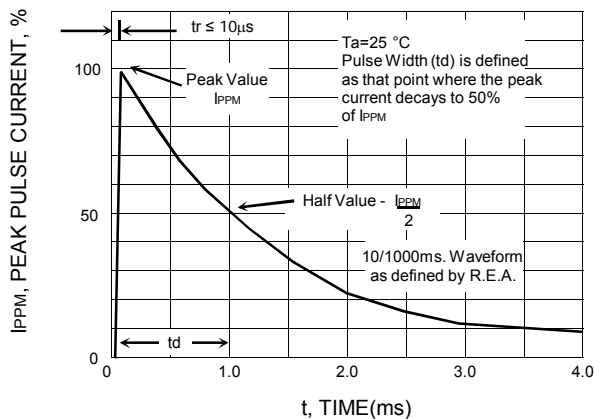


FIG.5 - PULSE WAVEFORM



单击下面可查看定价，库存，交付和生命周期等信息

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