

SMBJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR
STAND-OFF VOLTAGE - 5.0 TO 440 Volts, 600 Watt Peak Pulse Power

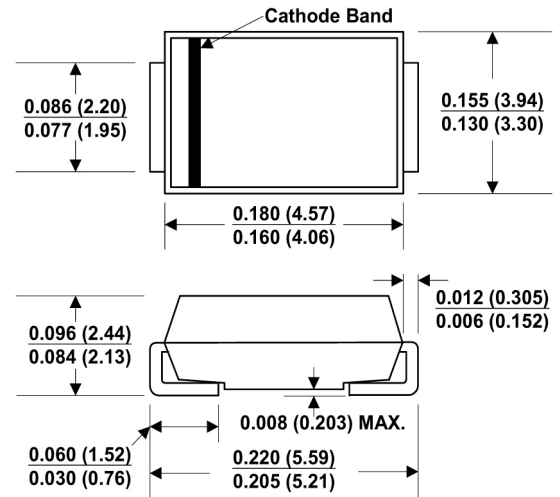
FEATURES

- ◆ For surface mounted applications in order to optimize board space
- ◆ Low profile package , Built-in strain relief
- ◆ Glass passivated junction, Low inductance
- ◆ Excellent clamping capability. Repetition Rate (duty cycle):0.01%
- ◆ Fast response time: typically less than 1.0ps from 0 Volts to BV for unidirectional types
- ◆ High temperature soldering: 250°C/10 seconds at terminals
- ◆ Plastic package has Underwriters Laboratory Flammability 94V-0
- ◆ Pb-free plated

Mechanical Data

- ◆ Case: JEDEC DO214AA. Molded plastic over glass passivated Junction
- ◆ Terminal: Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ Polarity: Color band denoted positive end (cathode) except Bidirectional
- ◆ Standard Packaging: 12mm tape (EIA STD RS-481)
- ◆ Weight: 0.003 ounce, 0.093gram

SMB (DO-214AA)



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

| RATING | SYMBOL | VALUE | UNITS |
|--|-----------------------------------|--------------|-------|
| Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note 1,2 ,FIG.1) | P _{PPM} | Min.600 | Watts |
| Peak Pulse Current of on 10/1000 μ s waveform (Note 1,FIG.3) | I _{PPM} | TABLE 1 | Amps |
| Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load,(JEDEC Method) (Note2,3) | I _{FSM} | 100 | Amps |
| Operating junction and Storage Temperature Range | T _J , T _{STG} | -55 to + 150 | °C |

Note: 1. Non-repetitive current pulse, per Fig. 3 and derated above TA = 25k per Fig. 2.

2. Mounted on 5.0mm² (0.03mm thick) Copper Pads to each terminal

3.8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

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| SMBJ PART NUMBER | | REVERSE STAND- OFF VOLTAGE VRWM(V) | BREAKDOWN VOLTAGE VBR(V) MIN. @IT | BREAKDOWN VOLTAGE VBR(V) MAX. @IT | TEST CURRENT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR(μ A) |
|------------------|-----------|--|--|--|-------------------------|---|--|---|
| UNI-POLAR | BI-POLAR | | | | | | | |
| SMBJ5.0A | SMBJ5.0CA | 5 | 6.4 | 7 | 10 | 9.2 | 65.3 | 800 |
| SMBJ6.0A | SMBJ6.0CA | 6 | 6.67 | 7.37 | 10 | 10.3 | 58.3 | 800 |
| SMBJ6.5A | SMBJ6.5CA | 6.5 | 7.22 | 7.98 | 10 | 11.2 | 53.6 | 500 |
| SMBJ7.0A | SMBJ7.0CA | 7 | 7.78 | 8.6 | 10 | 12 | 50 | 200 |
| SMBJ7.5A | SMBJ7.5CA | 7.5 | 8.33 | 9.21 | 1 | 12.9 | 46.6 | 100 |
| SMBJ8.0A | SMBJ8.0CA | 8 | 8.89 | 9.83 | 1 | 13.6 | 44.2 | 50 |
| SMBJ8.5A | SMBJ8.5CA | 8.5 | 9.44 | 10.4 | 1 | 14.4 | 41.7 | 20 |
| SMBJ9.0A | SMBJ9.0CA | 9 | 10 | 11.1 | 1 | 15.4 | 39 | 10 |
| SMBJ10A | SMBJ10CA | 10 | 11.1 | 12.3 | 1 | 17 | 35.3 | 5 |
| SMBJ11A | SMBJ11CA | 11 | 12.2 | 13.5 | 1 | 18.2 | 33 | 5 |
| SMBJ12A | SMBJ12CA | 12 | 13.3 | 14.7 | 1 | 19.9 | 30.2 | 5 |
| SMBJ13A | SMBJ13CA | 13 | 14.4 | 15.9 | 1 | 21.5 | 28 | 5 |
| SMBJ14A | SMBJ14CA | 14 | 15.6 | 17.2 | 1 | 23.2 | 25.9 | 5 |
| SMBJ15A | SMBJ15CA | 15 | 16.7 | 18.5 | 1 | 24.4 | 24.6 | 5 |
| SMBJ16A | SMBJ16CA | 16 | 17.8 | 19.7 | 1 | 26 | 23.1 | 5 |
| SMBJ17A | SMBJ17CA | 17 | 18.9 | 20.9 | 1 | 27.6 | 21.8 | 5 |
| SMBJ18A | SMBJ18CA | 18 | 20 | 22.1 | 1 | 29.2 | 20.6 | 5 |
| SMBJ20A | SMBJ20CA | 20 | 22.2 | 24.5 | 1 | 32.4 | 18.6 | 5 |
| SMBJ22A | SMBJ22CA | 22 | 24.4 | 26.9 | 1 | 35.5 | 16.9 | 5 |
| SMBJ24A | SMBJ24CA | 24 | 26.7 | 29.5 | 1 | 38.9 | 15.5 | 5 |
| SMBJ26A | SMBJ26CA | 26 | 28.9 | 31.9 | 1 | 42.1 | 14.3 | 5 |
| SMBJ28A | SMBJ28CA | 28 | 31.1 | 34.4 | 1 | 45.4 | 13.3 | 5 |
| SMBJ30A | SMBJ30CA | 30 | 33.3 | 36.8 | 1 | 48.4 | 12.4 | 5 |
| SMBJ33A | SMBJ33CA | 33 | 36.7 | 40.6 | 1 | 53.3 | 11.3 | 5 |
| SMBJ36A | SMBJ36CA | 36 | 40 | 44.2 | 1 | 58.1 | 10.4 | 5 |
| SMBJ40A | SMBJ40CA | 40 | 44.4 | 49.1 | 1 | 64.5 | 9.3 | 5 |
| SMBJ43A | SMBJ43CA | 43 | 47.8 | 52.8 | 1 | 69.4 | 8.7 | 5 |
| SMBJ45A | SMBJ45CA | 45 | 50 | 55.3 | 1 | 72.7 | 8.3 | 5 |

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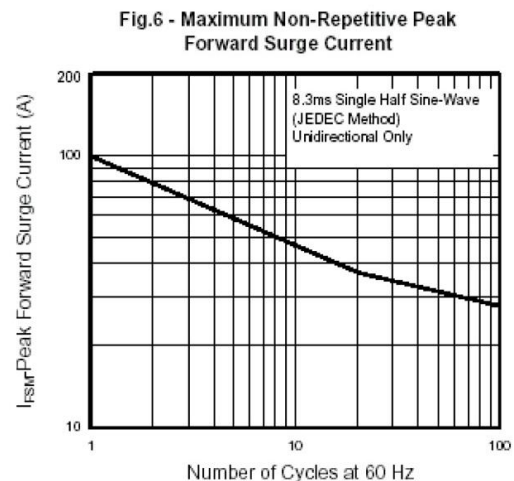
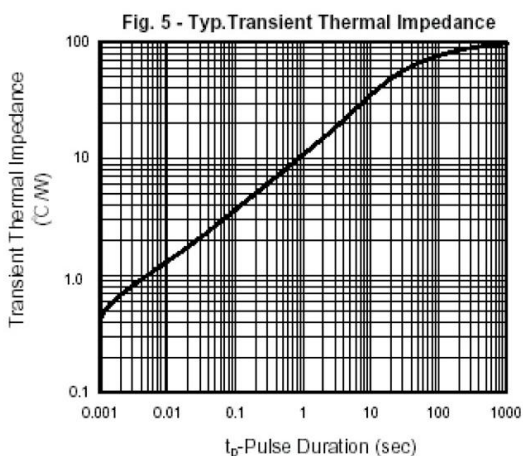
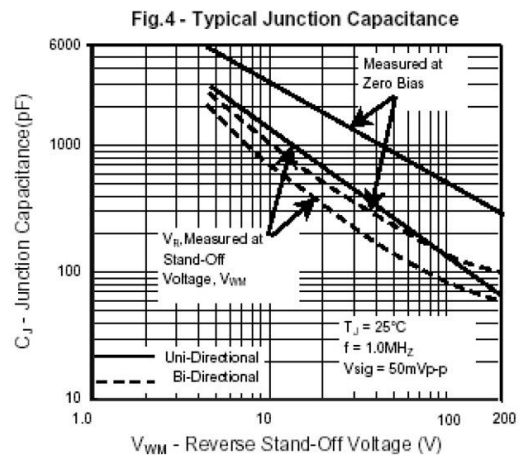
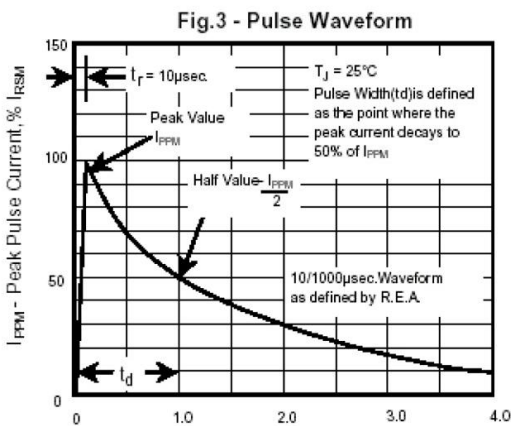
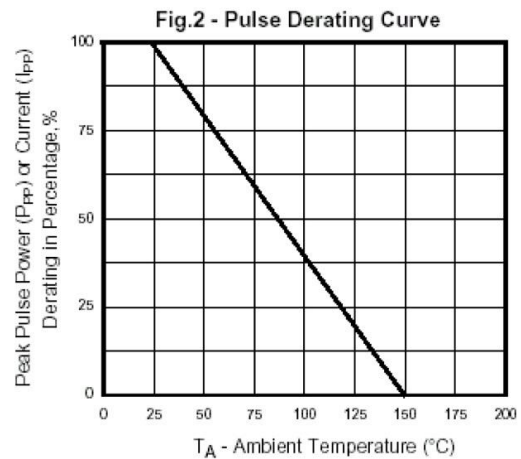
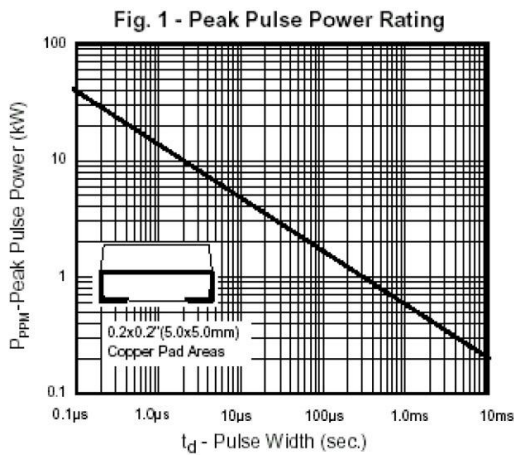
| SMBJ PART NUMBER | | REVERSE STAND- OFF VOLTAGE VRWM(V) | BREAKDOWN VOLTAGE VBR(V) MIN. @IT | BREAKDOWN VOLTAGE VBR(V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR(μ A) |
|------------------|-----------|--|--|--|-------------------------------|---|--|---|
| UNI-POLAR | BI-POLAR | | | | | | | |
| SMBJ48A | SMBJ48CA | 48 | 53.3 | 58.9 | 1 | 77.4 | 7.8 | 5 |
| SMBJ51A | SMBJ51CA | 51 | 56.7 | 62.7 | 1 | 82.4 | 7.3 | 5 |
| SMBJ54A | SMBJ54CA | 54 | 60 | 66.3 | 1 | 87.1 | 6.9 | 5 |
| SMBJ58A | SMBJ58CA | 58 | 64.4 | 71.2 | 1 | 93.6 | 6.5 | 5 |
| SMBJ60A | SMBJ60CA | 60 | 66.7 | 73.7 | 1 | 96.8 | 6.2 | 5 |
| SMBJ64A | SMBJ64CA | 64 | 71.1 | 78.6 | 1 | 103 | 5.9 | 5 |
| SMBJ70A | SMBJ70CA | 70 | 77.8 | 86 | 1 | 113 | 5.3 | 5 |
| SMBJ75A | SMBJ75CA | 75 | 83.3 | 92.1 | 1 | 121 | 5 | 5 |
| SMBJ78A | SMBJ78CA | 78 | 86.7 | 95.8 | 1 | 126 | 4.8 | 5 |
| SMBJ85A | SMBJ85CA | 85 | 94.4 | 104 | 1 | 137 | 4.4 | 5 |
| SMBJ90A | SMBJ90CA | 90 | 100 | 111 | 1 | 146 | 4.1 | 5 |
| SMBJ100A | SMBJ100CA | 100 | 111 | 123 | 1 | 162 | 3.7 | 5 |
| SMBJ110A | SMBJ110CA | 110 | 122 | 135 | 1 | 177 | 3.4 | 5 |
| SMBJ120A | SMBJ120CA | 120 | 133 | 147 | 1 | 193 | 3.1 | 5 |
| SMBJ130A | SMBJ130CA | 130 | 144 | 159 | 1 | 209 | 2.9 | 5 |
| SMBJ150A | SMBJ150CA | 150 | 167 | 185 | 1 | 243 | 2.5 | 5 |
| SMBJ160A | SMBJ160CA | 160 | 178 | 197 | 1 | 259 | 2.3 | 5 |
| SMBJ170A | SMBJ170CA | 170 | 189 | 209 | 1 | 275 | 2.2 | 5 |
| SMBJ180A | SMBJ180CA | 180 | 201 | 222 | 1 | 292 | 2.1 | 5 |
| SMBJ200A | SMBJ200CA | 200 | 224 | 247 | 1 | 342 | 1.9 | 5 |
| SMBJ220A | SMBJ220CA | 220 | 246 | 272 | 1 | 356 | 1.7 | 5 |
| SMBJ250A | SMBJ250CA | 250 | 279 | 309 | 1 | 405 | 1.5 | 5 |
| SMBJ300A | SMBJ300CA | 300 | 355 | 371 | 1 | 486 | 1.3 | 5 |
| SMBJ350A | SMBJ350CA | 350 | 391 | 432 | 1 | 567 | 1.1 | 5 |
| SMBJ400A | SMBJ400CA | 400 | 447 | 494 | 1 | 648 | 0.9 | 5 |
| SMBJ440A | SMBJ440CA | 440 | 492 | 543 | 1 | 713 | 0.9 | 5 |

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RATING AND CHARACTERISTIC CURVES SMBJ SERIES



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