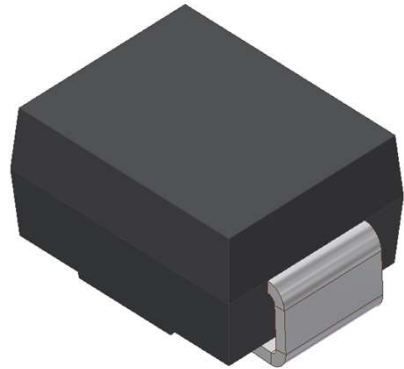


SMBJ*** CA Series

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

1. FEATURES

- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 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
- Typical IR less than 1mA above 10V
- High temperature soldering guaranteed:
260°C/10 seconds,
- Weight: 0.088g



2. MECHANICAL DATA

Case: Epoxy, Molded

Terminals: Plated leads, solderable per MIL-STD-202, Method 208

Polarity: Without Color band denoted cathode

Mounting Position: Any

3. MAXIMUM RATINGS (Ta = 25°C)

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

| RATING | VALUE | UNITS |
|--|-------------|-------|
| Peak Power Dissipation at $T_A=25^\circ\text{C}$, $T_P=1\text{ms}$ (Note 1) | Minimum 600 | Watts |
| Steady State Power Dissipation at $T_L=75^\circ\text{C}$ | 3.0 | Watts |
| Operating Temperature Range | -55 to +150 | °C |
| Storage Temperature Range | -55 to +150 | °C |
| Max junction capacitance at 4.0V, 1MHz | 550 | PF |

NOTES:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.

SMBJ*** CA Series

| Bi-Directional Part Number | Device marking code | Reverse Stand-off Voltage VRWM (V) | Breakdown Voltage VBR (V) | Breakdown Voltage VBR (V) | Test Current IT (mA) | Maximum Clamping Voltage @IPP VC (V) | Peak Pulse Current Ipp (A) | Reverse Leakage @VRWM IR (uA) |
|----------------------------|---------------------|------------------------------------|---------------------------|---------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| | | | Min. @IT | Max. @IT | | | | |
| SMBJ5.0CA | SMBJ5.0CA | 5.00 | 6.40 | 7.00 | 10.00 | 9.20 | 65.30 | 800 |
| SMBJ6.0CA | SMBJ6.0CA | 6.00 | 6.67 | 7.37 | 10.00 | 10.30 | 58.30 | 800 |
| SMBJ6.5CA | SMBJ6.5CA | 6.50 | 7.22 | 7.98 | 10.00 | 11.20 | 53.60 | 500 |
| SMBJ7.0CA | SMBJ7.0CA | 7.00 | 7.78 | 8.60 | 10.00 | 12.00 | 50.00 | 200 |
| SMBJ7.5CA | SMBJ7.5CA | 7.50 | 8.33 | 9.21 | 1.00 | 12.90 | 46.60 | 100 |
| SMBJ8.0CA | SMBJ8.0CA | 8.00 | 8.89 | 9.83 | 1.00 | 13.60 | 44.20 | 50 |
| SMBJ8.5CA | SMBJ8.5CA | 8.50 | 9.44 | 10.40 | 1.00 | 14.40 | 41.70 | 20 |
| SMBJ9.0CA | SMBJ9.0CA | 9.00 | 10.00 | 11.10 | 1.00 | 15.40 | 39.00 | 10 |
| SMBJ10CA | SMBJ10CA | 10.00 | 11.10 | 12.30 | 1.00 | 17.00 | 35.30 | 1 |
| SMBJ11CA | SMBJ11CA | 11.00 | 12.20 | 13.50 | 1.00 | 18.20 | 33.00 | 1 |
| SMBJ12CA | SMBJ12CA | 12.00 | 13.30 | 14.70 | 1.00 | 19.90 | 30.20 | 1 |
| SMBJ13CA | SMBJ13CA | 13.00 | 14.40 | 15.90 | 1.00 | 21.50 | 28.00 | 1 |
| SMBJ14CA | SMBJ14CA | 14.00 | 15.60 | 17.20 | 1.00 | 23.20 | 25.90 | 1 |
| SMBJ15CA | SMBJ15CA | 15.00 | 16.70 | 18.50 | 1.00 | 24.40 | 24.60 | 1 |
| SMBJ16CA | SMBJ16CA | 16.00 | 17.80 | 19.70 | 1.00 | 26.00 | 23.10 | 1 |
| SMBJ17CA | SMBJ17CA | 17.00 | 18.90 | 20.90 | 1.00 | 27.60 | 21.80 | 1 |
| SMBJ18CA | SMBJ18CA | 18.00 | 20.00 | 22.10 | 1.00 | 29.20 | 20.60 | 1 |
| SMBJ20CA | SMBJ20CA | 20.00 | 22.20 | 24.50 | 1.00 | 32.40 | 18.60 | 1 |
| SMBJ22CA | SMBJ22CA | 22.00 | 24.40 | 26.90 | 1.00 | 35.50 | 16.90 | 1 |
| SMBJ24CA | SMBJ24CA | 24.00 | 26.70 | 29.50 | 1.00 | 38.90 | 15.50 | 1 |
| SMBJ26CA | SMBJ26CA | 26.00 | 28.90 | 31.90 | 1.00 | 42.10 | 14.30 | 1 |
| SMBJ28CA | SMBJ28CA | 28.00 | 31.10 | 34.40 | 1.00 | 45.40 | 13.30 | 1 |
| SMBJ30CA | SMBJ30CA | 30.00 | 33.30 | 36.80 | 1.00 | 48.40 | 12.40 | 1 |
| SMBJ33CA | SMBJ33CA | 33.00 | 36.70 | 40.60 | 1.00 | 53.30 | 11.30 | 1 |
| SMBJ36CA | SMBJ36CA | 36.00 | 40.00 | 44.20 | 1.00 | 58.10 | 10.40 | 1 |
| SMBJ40CA | SMBJ40CA | 40.00 | 44.40 | 49.10 | 1.00 | 64.50 | 9.30 | 1 |
| SMBJ43CA | SMBJ43CA | 43.00 | 47.80 | 52.80 | 1.00 | 69.40 | 8.70 | 1 |
| SMBJ45CA | SMBJ45CA | 45.00 | 50.00 | 55.30 | 1.00 | 72.70 | 8.30 | 1 |
| SMBJ48CA | SMBJ48CA | 48.00 | 53.30 | 58.90 | 1.00 | 77.40 | 7.80 | 1 |
| SMBJ51CA | SMBJ51CA | 51.00 | 56.70 | 62.70 | 1.00 | 82.40 | 7.30 | 1 |
| SMBJ54CA | SMBJ54CA | 54.00 | 60.00 | 66.30 | 1.00 | 87.10 | 6.90 | 1 |
| SMBJ58CA | SMBJ58CA | 58.00 | 64.40 | 71.20 | 1.00 | 93.60 | 6.50 | 1 |
| SMBJ60CA | SMBJ60CA | 60.00 | 66.70 | 73.70 | 1.00 | 96.80 | 6.20 | 1 |
| SMBJ64CA | SMBJ64CA | 64.00 | 71.10 | 78.60 | 1.00 | 103.00 | 5.90 | 1 |
| SMBJ70CA | SMBJ70CA | 70.00 | 77.80 | 86.00 | 1.00 | 113.00 | 5.30 | 1 |
| SMBJ75CA | SMBJ75CA | 75.00 | 83.30 | 92.10 | 1.00 | 121.00 | 5.00 | 1 |
| SMBJ78CA | SMBJ78CA | 78.00 | 86.70 | 95.80 | 1.00 | 126.00 | 4.80 | 1 |
| SMBJ85CA | SMBJ85CA | 85.00 | 94.40 | 104.00 | 1.00 | 137.00 | 4.40 | 1 |
| SMBJ90CA | SMBJ90CA | 90.00 | 100.00 | 111.00 | 1.00 | 146.00 | 4.10 | 1 |
| SMBJ100CA | SMBJ100CA | 100.00 | 111.00 | 123.00 | 1.00 | 162.00 | 3.70 | 1 |
| SMBJ110CA | SMBJ110CA | 110.00 | 122.00 | 135.00 | 1.00 | 177.00 | 3.40 | 1 |
| SMBJ120CA | SMBJ120CA | 120.00 | 133.00 | 147.00 | 1.00 | 193.00 | 3.10 | 1 |
| SMBJ130CA | SMBJ130CA | 130.00 | 144.00 | 159.00 | 1.00 | 209.00 | 2.90 | 1 |
| SMBJ150CA | SMBJ150CA | 150.00 | 167.00 | 185.00 | 1.00 | 243.00 | 2.50 | 1 |
| SMBJ160CA | SMBJ160CA | 160.00 | 178.00 | 197.00 | 1.00 | 259.00 | 2.30 | 1 |
| SMBJ170CA | SMBJ170CA | 170.00 | 189.00 | 209.00 | 1.00 | 275.00 | 2.20 | 1 |
| SMBJ180CA | SMBJ180CA | 180.00 | 198.00 | 221.00 | 1.00 | 291.00 | 2.10 | 1 |
| SMBJ190CA | SMBJ190CA | 190.00 | 209.00 | 233.00 | 1.00 | 307.00 | 2.00 | 1 |
| SMBJ200CA | SMBJ200CA | 200.00 | 220.00 | 246.00 | 1.00 | 324.00 | 1.90 | 1 |
| SMBJ220CA | SMBJ220CA | 220.00 | 246.00 | 272.00 | 1.00 | 356.00 | 1.70 | 1 |
| SMBJ250CA | SMBJ250CA | 250.00 | 279.00 | 309.00 | 1.00 | 405.00 | 1.50 | 1 |
| SMBJ300CA | SMBJ300CA | 300.00 | 335.00 | 371.00 | 1.00 | 486.00 | 1.30 | 1 |
| SMBJ350CA | SMBJ350CA | 350.00 | 391.00 | 432.00 | 1.00 | 567.00 | 1.10 | 1 |
| SMBJ400CA | SMBJ400CA | 400.00 | 447.00 | 494.00 | 1.00 | 648.00 | 0.90 | 1 |
| SMBJ440CA | SMBJ440CA | 440.00 | 492.00 | 543.00 | 1.00 | 713.00 | 0.90 | 1 |

5. ELECTRICAL CHARACTERISTICS CURVES

Fig. 1-Peak Pulse Power Rating Curve

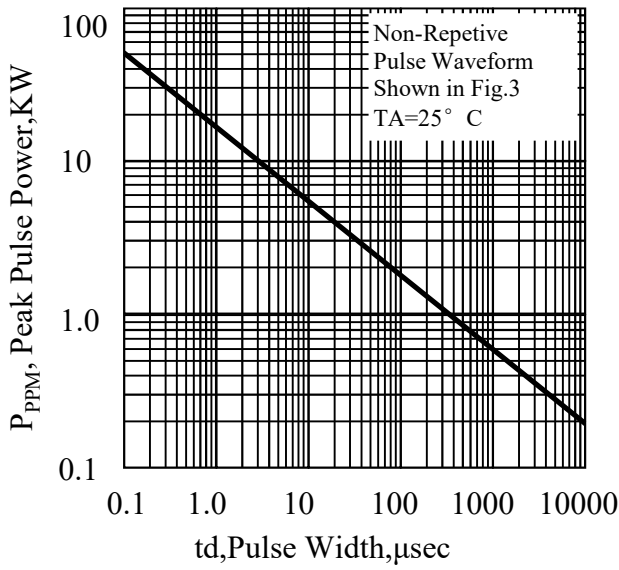


Fig. 2-Pulse Derating Curve

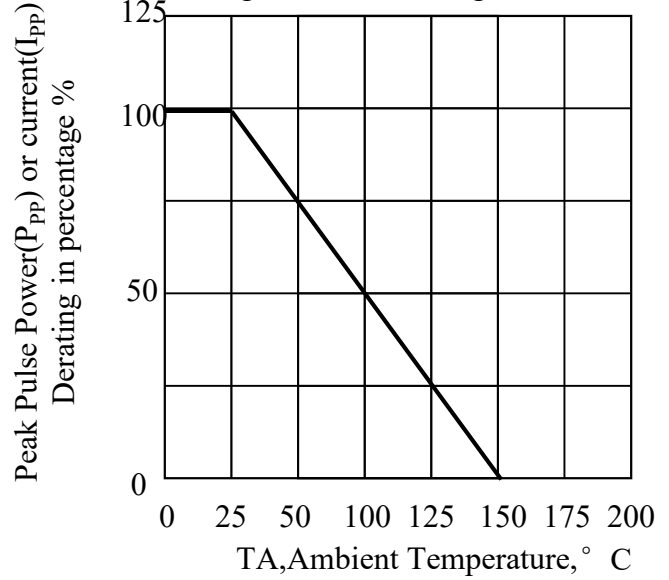


Fig. 3-Pulse Waveform

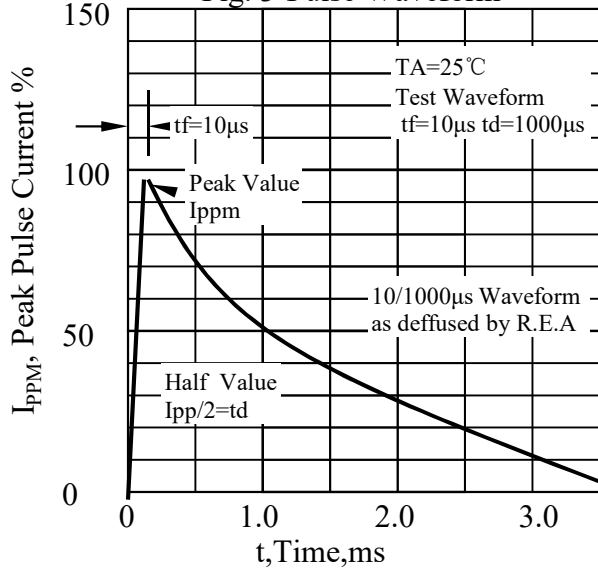
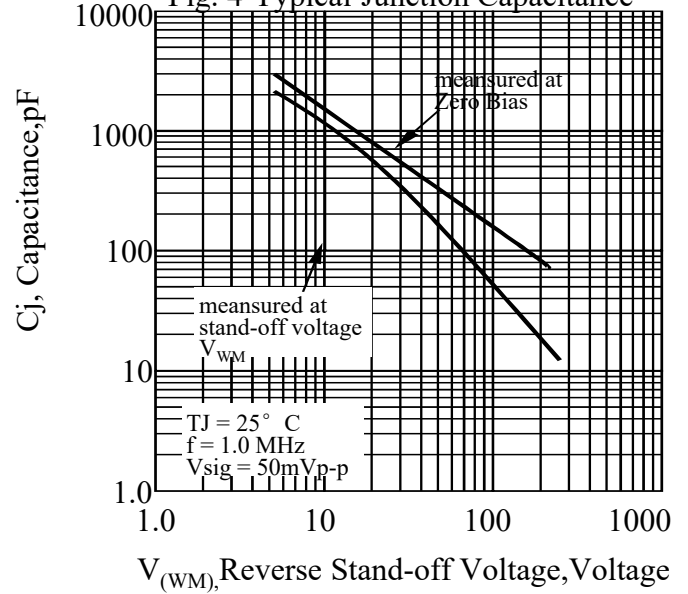
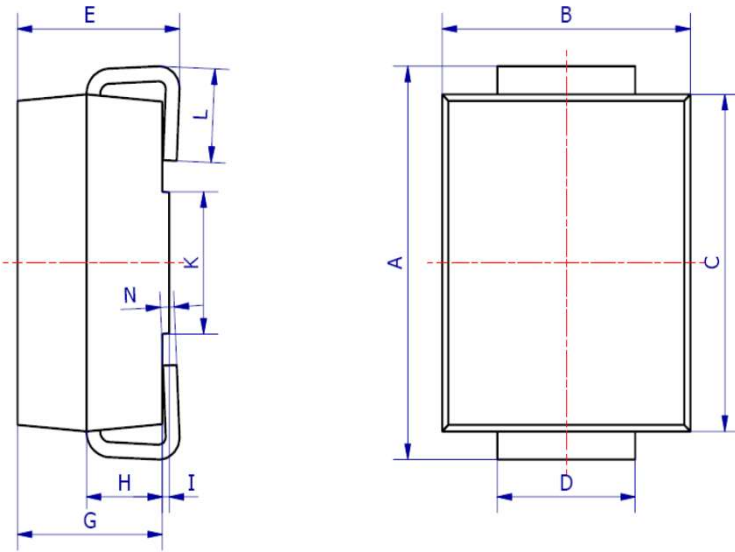


Fig. 4-Typical Junction Capacitance

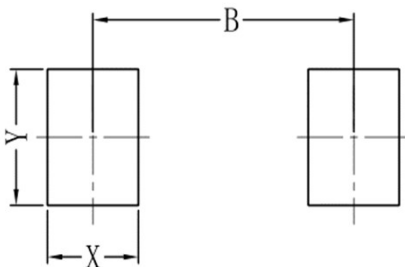


6. OUTLINE AND DIMENSIONS



| SMB | | | |
|----------------------|------|------|------|
| DIM | Min | Max | Typ. |
| A | 5.00 | 5.45 | 5.25 |
| B | 3.20 | 4.00 | 3.60 |
| C | 4.30 | 4.70 | 4.50 |
| D | 1.80 | 2.20 | 2.00 |
| E | 2.20 | 2.50 | 2.35 |
| G | 1.90 | 2.30 | 2.10 |
| H | 0.95 | 1.25 | 1.10 |
| I | 0.05 | 0.15 | 0.10 |
| K | 1.70 | 2.10 | 1.90 |
| L | 0.90 | 1.50 | 1.20 |
| N | 0.10 | 0.30 | 0.20 |
| All Dimensions in mm | | | |

7. SOLDERING FOOTPRINT



| SMB | |
|-----|------|
| DIM | (mm) |
| X | 1.60 |
| Y | 2.20 |
| B | 4.60 |

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