

Transient Voltage Suppressor

1.0SMBJ6.8CA - 1.0SMBJ440CA

Features

- Optimized for LAN protection applications
- Low profile package with built-in strain relief for SMT applications
- Low incremental surge resistance, excellent clamping capability
- 1000W peak pulse power capability with very fast response time
- High temperature soldering guaranteed: 260°C / 10s at terminals
- Bi-directional applications
- RoHS compliant with Halogen-free

HF



Mechanical Data

- Case: SMB molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208

Maximum Ratings (@T_A = 25°C unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|---|-----------------------------------|------------------------|------|
| Peak power dissipation with a 10/1000μs waveform *1 | P _{PPM} | Minimum 1000 | W |
| Peak pulse current with a 10/1000μs waveform *1 | I _{PPM} | see E. Characteristics | A |
| Typical Thermal Resistance *2 | R _{θJA} | 60 | °C/W |
| | R _{θJC} | 23 | |
| | R _{θJL} | 25 | |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 ~ +150 | °C |

Note *1: Non-repetitive current pulses

Note *2: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1 mm copper pad area

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Electrical Characteristics (@T_A = 25°C unless otherwise specified)

| Type | Breakdown Voltage V _{BR} @ I _T | | Test Current | Reverse Standoff Voltage | Max. Reverse Leakage @ V _{RWM} | Max. Peak Pulse Current | Max. Clamping Voltage @ I _{PP} |
|--------------|--|------|----------------|--------------------------|---|-------------------------|---|
| | (V) | | I _T | V _{RWM} | I _{R_MAX} | I _{PP_MAX} | V _C |
| | Min. | Max. | (mA) | (V) | (μA) | (A) | (V) |
| 1.0SMBJ6.8CA | 7.56 | 8.35 | 10 | 6.8 | 500 | 83.3 | 12 |
| 1.0SMBJ7.0CA | 7.78 | 8.6 | 10 | 7 | 200 | 83.3 | 12 |
| 1.0SMBJ7.5CA | 8.33 | 9.21 | 1 | 7.5 | 100 | 77.5 | 12.9 |
| 1.0SMBJ8.0CA | 8.89 | 9.83 | 1 | 8 | 50 | 73.5 | 13.6 |
| 1.0SMBJ8.5CA | 9.44 | 10.4 | 1 | 8.5 | 20 | 69.4 | 14.4 |
| 1.0SMBJ9.0CA | 10 | 11.1 | 1 | 9 | 10 | 64.9 | 15.4 |
| 1.0SMBJ10CA | 11.1 | 12.3 | 1 | 10 | 5 | 58.8 | 17 |
| 1.0SMBJ11CA | 12.2 | 13.5 | 1 | 11 | 1 | 54.9 | 18.2 |
| 1.0SMBJ12CA | 13.3 | 14.7 | 1 | 12 | 1 | 50.3 | 19.9 |
| 1.0SMBJ13CA | 14.4 | 15.9 | 1 | 13 | 1 | 47.6 | 21 |
| 1.0SMBJ14CA | 15.6 | 17.2 | 1 | 14 | 1 | 43.1 | 23.2 |
| 1.0SMBJ15CA | 16.7 | 18.5 | 1 | 15 | 1 | 41 | 24.4 |
| 1.0SMBJ16CA | 17.8 | 19.7 | 1 | 16 | 1 | 38.5 | 26 |
| 1.0SMBJ17CA | 18.9 | 20.9 | 1 | 17 | 1 | 36.2 | 27.6 |
| 1.0SMBJ18CA | 20 | 22.1 | 1 | 18 | 1 | 34.2 | 29.2 |
| 1.0SMBJ20CA | 22.2 | 24.5 | 1 | 20 | 1 | 30.9 | 32.4 |
| 1.0SMBJ22CA | 24.4 | 26.9 | 1 | 22 | 1 | 28.2 | 35.5 |
| 1.0SMBJ24CA | 26.7 | 29.5 | 1 | 24 | 1 | 25.7 | 38.9 |
| 1.0SMBJ26CA | 28.9 | 31.9 | 1 | 26 | 1 | 23.8 | 42.1 |
| 1.0SMBJ28CA | 31.1 | 34.4 | 1 | 28 | 1 | 22 | 45.4 |
| 1.0SMBJ30CA | 33.3 | 36.8 | 1 | 30 | 1 | 20.7 | 48.4 |
| 1.0SMBJ33CA | 36.7 | 40.6 | 1 | 33 | 1 | 18.8 | 53.3 |
| 1.0SMBJ36CA | 40 | 44.2 | 1 | 36 | 1 | 17.2 | 58.1 |
| 1.0SMBJ40CA | 44.4 | 49.1 | 1 | 40 | 1 | 15.5 | 64.5 |
| 1.0SMBJ43CA | 47.8 | 52.8 | 1 | 43 | 1 | 14.4 | 69.4 |
| 1.0SMBJ45CA | 50 | 55.3 | 1 | 45 | 1 | 13.8 | 72.7 |
| 1.0SMBJ48CA | 53.3 | 58.9 | 1 | 48 | 1 | 12.9 | 77.4 |
| 1.0SMBJ51CA | 56.7 | 62.7 | 1 | 51 | 1 | 12.1 | 82.4 |
| 1.0SMBJ54CA | 60 | 66.3 | 1 | 54 | 1 | 11.5 | 87.1 |

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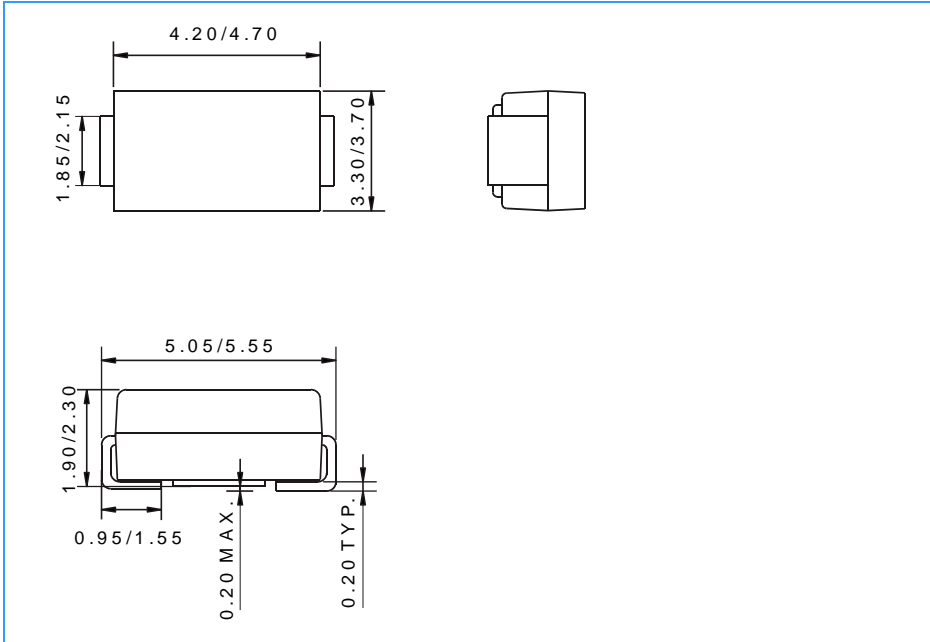
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| Type | Breakdown Voltage V_{BR} @ I_r | | Test Current | Reverse Standoff Voltage | Max. Reverse Leakage @ V_{RWM} | Max. Peak Pulse Current | Max. Clamping Voltage @ I_{PP} |
|--------------|------------------------------------|------|--------------|--------------------------|----------------------------------|-------------------------|----------------------------------|
| | (V) | | I_r | V_{RWM} | I_{R_MAX} | I_{PP_MAX} | V_C |
| | Min. | Max. | (mA) | (V) | (μ A) | (A) | (V) |
| 1.0SMBJ58CA | 64.4 | 71.2 | 1 | 58 | 1 | 10.7 | 93.6 |
| 1.0SMBJ60CA | 66.7 | 73.7 | 1 | 60 | 1 | 10.3 | 96.8 |
| 1.0SMBJ64CA | 71.1 | 78.6 | 1 | 64 | 1 | 9.7 | 103 |
| 1.0SMBJ68CA | 75.5 | 83.5 | 1 | 68 | 1 | 9.2 | 109 |
| 1.0SMBJ70CA | 77.8 | 86 | 1 | 70 | 1 | 8.8 | 113 |
| 1.0SMBJ75CA | 83.3 | 92.1 | 1 | 75 | 1 | 8.3 | 121 |
| 1.0SMBJ78CA | 86.7 | 95.8 | 1 | 78 | 1 | 7.9 | 126 |
| 1.0SMBJ85CA | 94.4 | 104 | 1 | 85 | 1 | 7.3 | 137 |
| 1.0SMBJ90CA | 100 | 111 | 1 | 90 | 1 | 6.8 | 146 |
| 1.0SMBJ100CA | 111 | 123 | 1 | 100 | 1 | 6.2 | 162 |
| 1.0SMBJ110CA | 122 | 135 | 1 | 110 | 1 | 5.6 | 177 |
| 1.0SMBJ120CA | 133 | 147 | 1 | 120 | 1 | 5.2 | 193 |
| 1.0SMBJ130CA | 144 | 159 | 1 | 130 | 1 | 4.8 | 209 |
| 1.0SMBJ150CA | 167 | 185 | 1 | 150 | 1 | 4.1 | 243 |
| 1.0SMBJ160CA | 178 | 197 | 1 | 160 | 1 | 3.9 | 259 |
| 1.0SMBJ170CA | 189 | 209 | 1 | 170 | 1 | 3.6 | 275 |
| 1.0SMBJ188CA | 209 | 231 | 1 | 188 | 1 | 3 | 328 |
| 1.0SMBJ200CA | 222 | 246 | 1 | 200 | 1 | 3.1 | 323 |
| 1.0SMBJ220CA | 245 | 270 | 1 | 220 | 1 | 2.8 | 355 |
| 1.0SMBJ240CA | 267 | 295 | 1 | 240 | 1 | 2.6 | 388 |
| 1.0SMBJ250CA | 278 | 307 | 1 | 250 | 1 | 2.5 | 404 |
| 1.0SMBJ300CA | 333 | 368 | 1 | 300 | 1 | 2.1 | 485 |
| 1.0SMBJ350CA | 389 | 429 | 1 | 350 | 1 | 1.8 | 566 |
| 1.0SMBJ360CA | 400 | 442 | 1 | 360 | 1 | 1.7 | 582 |
| 1.0SMBJ400CA | 445 | 491 | 1 | 400 | 1 | 1.5 | 646 |
| 1.0SMBJ440CA | 489 | 540 | 1 | 440 | 1 | 1.4 | 711 |

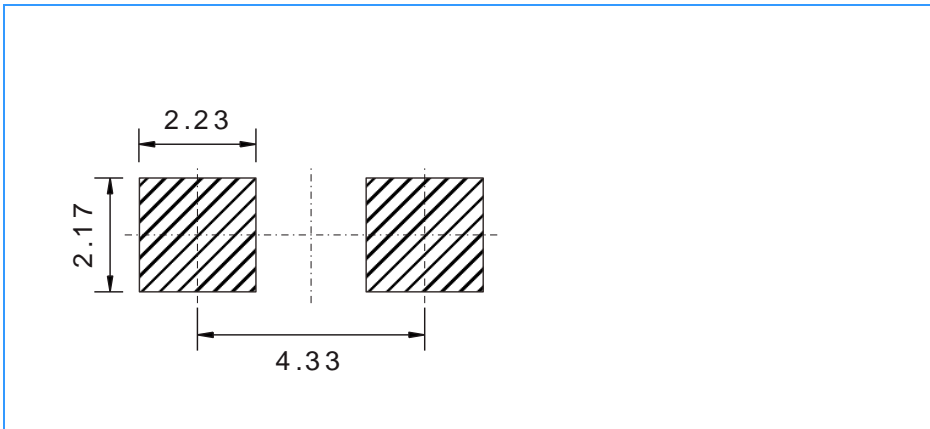
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Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

| Part Number | Package | Package |
|-----------------------------|---------|--------------------|
| 1.0SMBJ6.8CA - 1.0SMBJ440CA | SMB | 3000 / Tape & Reel |