

1.5SMC*** CA Series

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE 6.8 TO 250 Volts, 1500 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-O
- 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 1uA above 10V
- High temperature soldering guaranteed:
260°C/10 seconds,
- Weight: 0.26g



2. MECHANICAL DATA

Case: JEDEC DO-214AB (SMC)

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

Polarity: Without Color band denoted cathode

Mounting Position: Any

3. MAXIMUM RATINGS(T_a = 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°C, T _P =1ms(Note 1) | Minimum1500 | Watts |
| Steady State Power Dissipation at T _L =75°C(Note 2) | 5.0 | Watts |
| Operating Temperature Range | -55 to +150 | °C |
| Storage Temperature Range | -55 to +150 | °C |

NOTES:

1. Non-repetitive current pulse, per Fig. 3 and derated above T_A=25°C per Fig. 2.
2. Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal.

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| Bi-Directional Part Number | Device marking code | 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 (uA) |
|----------------------------|---------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| 1.5SMC6.8CA | 1.5SMC6.8CA | 5.8 | 6.45 | 7.14 | 10 | 10.5 | 142.9 | 1000 |
| 1.5SMC7.5CA | 1.5SMC7.5CA | 6.4 | 7.13 | 7.88 | 10 | 11.3 | 132.7 | 500 |
| 1.5SMC8.2CA | 1.5SMC8.2CA | 7.02 | 7.79 | 8.61 | 10 | 12.1 | 124.0 | 200 |
| 1.5SMC9.1CA | 1.5SMC9.1CA | 7.78 | 8.65 | 9.5 | 1 | 13.4 | 111.9 | 50 |
| 1.5SMC10CA | 1.5SMC10CA | 8.55 | 9.5 | 10.5 | 1 | 14.5 | 103.4 | 10 |
| 1.5SMC11CA | 1.5SMC11CA | 9.4 | 10.5 | 11.6 | 1 | 15.6 | 96.2 | 1 |
| 1.5SMC12CA | 1.5SMC12CA | 10.2 | 11.4 | 12.6 | 1 | 16.7 | 89.8 | 1 |
| 1.5SMC13CA | 1.5SMC13CA | 11.1 | 12.4 | 13.7 | 1 | 18.2 | 82.4 | 1 |
| 1.5SMC15CA | 1.5SMC15CA | 12.8 | 14.3 | 15.8 | 1 | 21.2 | 70.8 | 1 |
| 1.5SMC16CA | 1.5SMC16CA | 13.6 | 15.2 | 16.8 | 1 | 22.5 | 66.7 | 1 |
| 1.5SMC18CA | 1.5SMC18CA | 15.3 | 17.1 | 18.9 | 1 | 25.2 | 59.5 | 1 |
| 1.5SMC20CA | 1.5SMC20CA | 17.1 | 19 | 21 | 1 | 27.7 | 54.2 | 1 |
| 1.5SMC22CA | 1.5SMC22CA | 18.8 | 20.9 | 23.1 | 1 | 30.6 | 49.0 | 1 |
| 1.5SMC24CA | 1.5SMC24CA | 20.5 | 22.8 | 25.2 | 1 | 33.2 | 45.2 | 1 |
| 1.5SMC27CA | 1.5SMC27CA | 23.1 | 25.7 | 28.4 | 1 | 37.5 | 40.0 | 1 |
| 1.5SMC30CA | 1.5SMC30CA | 25.6 | 28.5 | 31.5 | 1 | 41.4 | 36.2 | 1 |
| 1.5SMC33CA | 1.5SMC33CA | 28.2 | 31.4 | 34.7 | 1 | 45.7 | 32.8 | 1 |
| 1.5SMC36CA | 1.5SMC36CA | 30.8 | 34.2 | 37.8 | 1 | 49.9 | 30.1 | 1 |
| 1.5SMC39CA | 1.5SMC39CA | 33.3 | 37.1 | 41 | 1 | 53.9 | 27.8 | 1 |
| 1.5SMC43CA | 1.5SMC43CA | 36.8 | 40.9 | 45.2 | 1 | 59.3 | 25.3 | 1 |
| 1.5SMC47CA | 1.5SMC47CA | 40.2 | 44.7 | 49.4 | 1 | 64.8 | 23.1 | 1 |
| 1.5SMC51CA | 1.5SMC51CA | 43.6 | 48.5 | 53.6 | 1 | 70.1 | 21.4 | 1 |
| 1.5SMC56CA | 1.5SMC56CA | 47.8 | 53.2 | 58.8 | 1 | 77 | 19.5 | 1 |
| 1.5SMC62CA | 1.5SMC62CA | 53 | 58.9 | 65.1 | 1 | 85 | 17.6 | 1 |
| 1.5SMC68CA | 1.5SMC68CA | 58.1 | 64.6 | 71.4 | 1 | 92 | 16.3 | 1 |
| 1.5SMC75CA | 1.5SMC75CA | 64.1 | 71.3 | 78.8 | 1 | 103 | 14.6 | 1 |
| 1.5SMC82CA | 1.5SMC82CA | 70.1 | 77.9 | 86.1 | 1 | 113 | 13.3 | 1 |
| 1.5SMC91CA | 1.5SMC91CA | 77.8 | 86.5 | 95.5 | 1 | 125 | 12.0 | 1 |
| 1.5SMC100CA | 1.5SMC100CA | 85.5 | 95 | 105 | 1 | 137 | 10.9 | 1 |
| 1.5SMC110CA | 1.5SMC110CA | 94 | 105 | 116 | 1 | 152 | 9.9 | 1 |
| 1.5SMC120CA | 1.5SMC120CA | 102 | 114 | 126 | 1 | 165 | 9.1 | 1 |
| 1.5SMC130CA | 1.5SMC130CA | 111 | 124 | 137 | 1 | 179 | 8.4 | 1 |
| 1.5SMC150CA | 1.5SMC150CA | 128 | 143 | 158 | 1 | 207 | 7.2 | 1 |
| 1.5SMC160CA | 1.5SMC160CA | 136 | 152 | 168 | 1 | 219 | 6.8 | 1 |
| 1.5SMC170CA | 1.5SMC170CA | 145 | 162 | 179 | 1 | 234 | 6.4 | 1 |
| 1.5SMC180CA | 1.5SMC180CA | 154 | 171 | 189 | 1 | 246 | 6.1 | 1 |
| 1.5SMC200CA | 1.5SMC200CA | 171 | 190 | 210 | 1 | 274 | 5.5 | 1 |
| 1.5SMC220CA | 1.5SMC220CA | 185 | 209 | 231 | 1 | 328 | 4.6 | 1 |
| 1.5SMC250CA | 1.5SMC250CA | 214 | 237 | 263 | 1 | 344 | 4.4 | 1 |

5. ELECTRICAL CHARACTERISTICS CURVES

Fig. 1-Peak Pulse Power Rating Curve

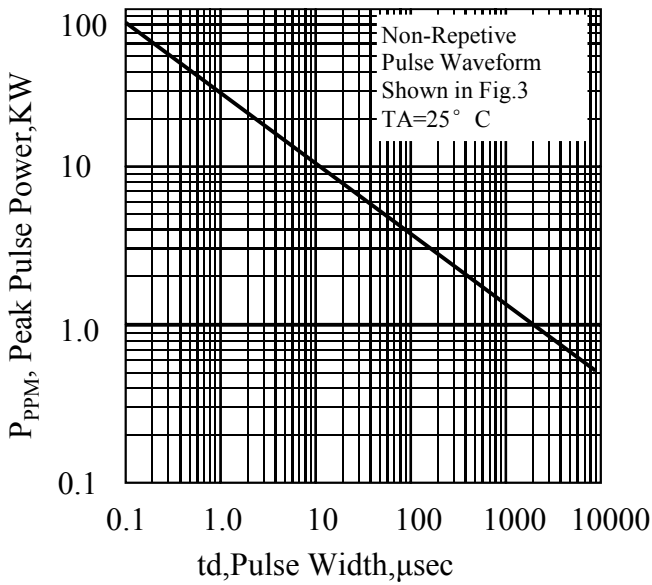


Fig. 2-Pulse Derating Curve

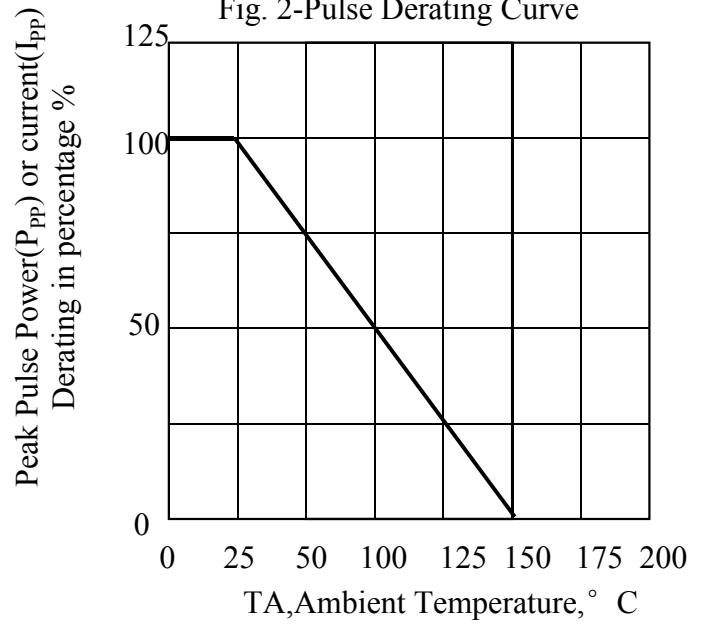


Fig. 3-Pulse Waveform

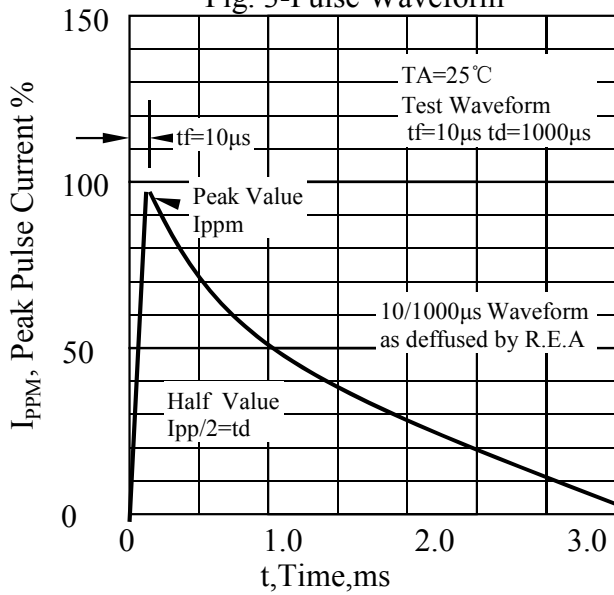
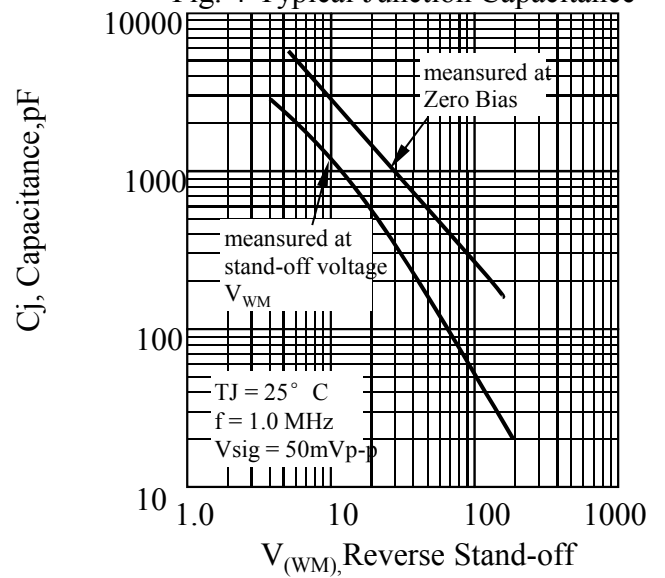
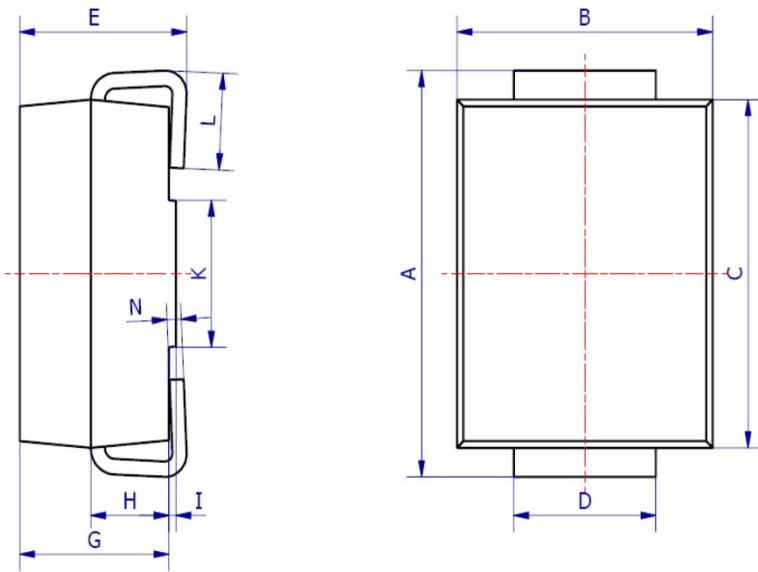


Fig. 4-Typical Junction Capacitance

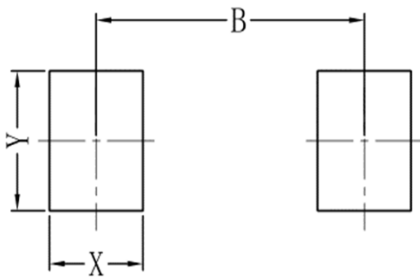


6. OUTLINE AND DIMENSIONS



| SMC | | | |
|----------------------|------|------|------|
| DIM | Min | Max | Typ. |
| A | 7.70 | 8.30 | 8.00 |
| B | 5.85 | 6.25 | 6.05 |
| C | 6.65 | 7.05 | 6.85 |
| D | 2.80 | 3.20 | 3.00 |
| E | 2.45 | 2.85 | 2.65 |
| G | 2.10 | 2.50 | 2.30 |
| H | 1.00 | 1.40 | 1.20 |
| I | 0.05 | 0.15 | 0.10 |
| K | 4.30 | 4.70 | 4.50 |
| L | 1.00 | 1.50 | 1.25 |
| N | 0.10 | 0.30 | 0.20 |
| All Dimensions in mm | | | |

7. SOLDERING FOOTPRINT



| SMC | |
|-----|------|
| DIM | (mm) |
| X | 1.60 |
| Y | 3.30 |
| B | 6.60 |