



1.5SMC SERIES

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR PEAK PULSE POWER 1500 Watt

BREAK DOWN VOLTAGE

6.8 to 250 Volt

SMC / DO-214AB

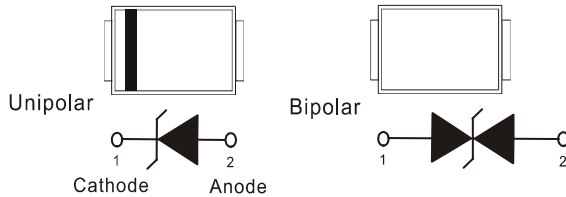
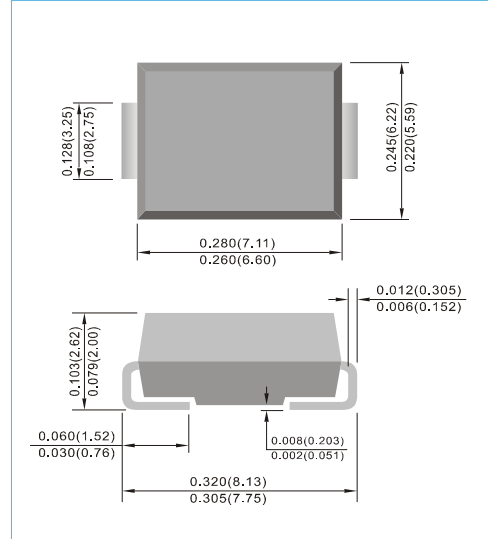
Unit : inch(mm)

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated chip junction in SMC/DO-214AB package
- 1500W surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time: typically less than 1 ps from 0 volts to BV min
- High temperature soldering guaranteed: 260°C/10 seconds/0.375", (9.5mm) lead length/5lbs., (2.3kg) tension
- ESD IEC-61000-4-2 Air \pm 30kV, Contact \pm 30kV
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: JEDEC SMC/DO-214AB molded plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Weight: 0.0082 ounce, 0.233 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types 1.5SMC6.8 thru types 1.5SMC250.
 Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Units |
|--|-----------------|----------------------|-----------------------------|
| Peak Power Dissipation at $T_A=25^\circ\text{C}$, $t_p=1\text{ms}$ (Notes 1) | P_{PP} | 1500 | Watts |
| Typical Thermal Resistance Junction to Air (Notes 2) | $R_{\theta JA}$ | 50 | $^\circ\text{C} / \text{W}$ |
| Peak Pulse Current on $t_p=10/1000\mu\text{s}$ waveform (Notes 1) | I_{PPM} | see Table | Amps |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 3) | I_{FSM} | 200 | Amps |
| ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact) | V_{ESD} | ± 30 ± 30 | kV |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

NOTES :

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
2. Mounted on Copper Leaf area of $0.79 \text{ in}^2 (20\text{mm}^2)$.
3. 8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.
4. A transient suppressor is selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.



1.5SMC SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000µs | Peak Pulse Current 10/1000µs | Marking Code | |
|---|-------------|---------------------------|----------------------------------|------|--------------|-----------------------------------|------|---------------------------------|---------------------------------|--------------|-----|
| | | | V _{BR} @ I _T | | | I _R @ V _{RWM} | | | | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | µA | µA | V | A | UNI | BI |
| 1500W Transient Voltage Suppressor | | | | | | | | | | | |
| 1.5SMC6.8 | 1.5SMC6.8C | 5.5 | 6.12 | 7.48 | 10 | 1000 | 2000 | 10.8 | 139 | FZA | JZA |
| 1.5SMC6.8A | 1.5SMC6.8CA | 5.8 | 6.45 | 7.14 | 10 | 1000 | 2000 | 10.5 | 143 | FZB | JZB |
| 1.5SMC7.5 | 1.5SMC7.5C | 6.05 | 6.75 | 8.25 | 10 | 500 | 1000 | 11.7 | 128 | FZC | JZC |
| 1.5SMC7.5A | 1.5SMC7.5CA | 6.4 | 7.13 | 7.88 | 10 | 500 | 1000 | 11.3 | 132 | FZD | JZD |
| 1.5SMC8.2 | 1.5SMC8.2C | 6.63 | 7.38 | 9.02 | 10 | 200 | 400 | 12.5 | 120 | FZE | JZE |
| 1.5SMC8.2A | 1.5SMC8.2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 400 | 12.1 | 124 | FZF | JZF |
| 1.5SMC9.1 | 1.5SMC9.1C | 7.37 | 8.19 | 10 | 1 | 50 | 100 | 13.8 | 109 | FZG | JZG |
| 1.5SMC9.1A | 1.5SMC9.1CA | 7.78 | 8.65 | 9.5 | 1 | 50 | 100 | 13.4 | 112 | FZH | JZH |
| 1.5SMC10 | 1.5SMC10C | 8.1 | 9 | 11 | 1 | 10 | 20 | 15 | 100 | FZJ | JZJ |
| 1.5SMC10A | 1.5SMC10CA | 8.55 | 9.5 | 10.5 | 1 | 10 | 20 | 14.5 | 103 | FZK | JZK |
| 1.5SMC11 | 1.5SMC11C | 8.92 | 9.9 | 12.1 | 1 | 5 | 10 | 16.2 | 93 | FZL | JZL |
| 1.5SMC11A | 1.5SMC11CA | 9.4 | 10.5 | 11.6 | 1 | 5 | 10 | 15.6 | 96 | FZM | JZM |
| 1.5SMC12 | 1.5SMC12C | 9.72 | 10.8 | 13.2 | 1 | 5 | 5 | 17.3 | 87 | FZN | JZN |
| 1.5SMC12A | 1.5SMC12CA | 10.2 | 11.4 | 12.6 | 1 | 5 | 5 | 16.7 | 90 | FZP | JZP |
| 1.5SMC13 | 1.5SMC13C | 10.5 | 11.7 | 14.3 | 1 | 1 | 1 | 19 | 79 | FZQ | JZQ |
| 1.5SMC13A | 1.5SMC13CA | 11.1 | 12.4 | 13.7 | 1 | 1 | 1 | 18.2 | 82 | FZR | JZR |
| 1.5SMC15 | 1.5SMC15C | 12.1 | 13.5 | 16.5 | 1 | 1 | 1 | 22 | 68 | FZS | JZS |
| 1.5SMC15A | 1.5SMC15CA | 12.8 | 14.3 | 15.8 | 1 | 1 | 1 | 21.2 | 71 | FZT | JZT |
| 1.5SMC16 | 1.5SMC16C | 12.9 | 14.4 | 17.6 | 1 | 1 | 1 | 23.5 | 64 | FZU | JZU |
| 1.5SMC16A | 1.5SMC16CA | 13.6 | 15.2 | 16.8 | 1 | 1 | 1 | 22.5 | 67 | FZV | JZV |
| 1.5SMC18 | 1.5SMC18C | 14.5 | 16.2 | 19.8 | 1 | 1 | 1 | 26.5 | 56.5 | FZW | JZW |
| 1.5SMC18A | 1.5SMC18CA | 15.3 | 17.1 | 18.9 | 1 | 1 | 1 | 25.2 | 59.5 | FZX | JZX |
| 1.5SMC20 | 1.5SMC20C | 16.2 | 18 | 22 | 1 | 1 | 1 | 29.1 | 51.5 | FZY | JZY |
| 1.5SMC20A | 1.5SMC20CA | 17.1 | 19 | 21 | 1 | 1 | 1 | 27.7 | 54 | FZZ | JZZ |
| 1.5SMC22 | 1.5SMC22C | 17.8 | 19.8 | 24.2 | 1 | 1 | 1 | 31.9 | 47 | FXA | JXA |
| 1.5SMC22A | 1.5SMC22CA | 18.8 | 20.9 | 23.1 | 1 | 1 | 1 | 30.6 | 49 | FXB | JXB |
| 1.5SMC24 | 1.5SMC24C | 19.4 | 21.6 | 26.4 | 1 | 1 | 1 | 34.7 | 43 | FXC | JXC |
| 1.5SMC24A | 1.5SMC24CA | 20.5 | 22.8 | 25.2 | 1 | 1 | 1 | 33.2 | 45 | FXD | JXD |
| 1.5SMC27 | 1.5SMC27C | 21.8 | 24.3 | 29.7 | 1 | 1 | 1 | 39.1 | 38.5 | FXE | JXE |
| 1.5SMC27A | 1.5SMC27CA | 23.1 | 25.7 | 28.4 | 1 | 1 | 1 | 37.5 | 40 | FXF | JXF |
| 1.5SMC30 | 1.5SMC30C | 24.3 | 27 | 33 | 1 | 1 | 1 | 43.5 | 34.5 | FXG | JXG |
| 1.5SMC30A | 1.5SMC30CA | 25.6 | 28.5 | 31.5 | 1 | 1 | 1 | 41.4 | 36 | FXH | JXH |
| 1.5SMC33 | 1.5SMC33C | 26.8 | 29.7 | 36.3 | 1 | 1 | 1 | 47.7 | 31.5 | FXJ | JXJ |
| 1.5SMC33A | 1.5SMC33CA | 28.2 | 31.4 | 34.7 | 1 | 1 | 1 | 45.7 | 33 | FXK | JXK |
| 1.5SMC36 | 1.5SMC36C | 29.1 | 32.4 | 39.6 | 1 | 1 | 1 | 52 | 29 | FXL | JXL |
| 1.5SMC36A | 1.5SMC36CA | 30.8 | 34.2 | 37.8 | 1 | 1 | 1 | 49.9 | 30 | FXM | JXM |
| 1.5SMC39 | 1.5SMC39C | 31.6 | 35.1 | 42.9 | 1 | 1 | 1 | 56.4 | 26.5 | FXN | JXN |
| 1.5SMC39A | 1.5SMC39CA | 33.3 | 37.1 | 41 | 1 | 1 | 1 | 53.9 | 28 | FXP | JXP |
| 1.5SMC43 | 1.5SMC43C | 34.8 | 38.7 | 47.3 | 1 | 1 | 1 | 61.9 | 24 | FXQ | JXQ |



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| Part Number | | Reverse Stand-off Voltage V_{RWM} (Notes 4) | Breakdown Voltage | | Test Current I_T | Reverse Leakage | | Max. Clamp Voltage 10/1000 μ s $V_C @ I_{PP}$ | Peak Pulse Current 10/1000 μ s I_{PP} | Marking Code | |
|---|-------------|--|-------------------|------|-----------------------|-----------------|---------|---|---|--------------|-----|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | μ A | μ A | V | A | UNI | BI |
| 1500W Transient Voltage Suppressor | | | | | | | | | | | |
| 1.5SMC43A | 1.5SMC43CA | 36.8 | 40.9 | 45.2 | 1 | 1 | 1 | 59.3 | 25.3 | FXR | JXR |
| 1.5SMC47 | 1.5SMC47C | 38.1 | 42.3 | 51.7 | 1 | 1 | 1 | 67.8 | 22.2 | FXS | JXS |
| 1.5SMC47A | 1.5SMC47CA | 40.2 | 44.7 | 49.4 | 1 | 1 | 1 | 64.8 | 23.2 | FXT | JXT |
| 1.5SMC51 | 1.5SMC51C | 41.3 | 45.9 | 56.1 | 1 | 1 | 1 | 73.5 | 20.4 | FXU | JXU |
| 1.5SMC51A | 1.5SMC51CA | 43.6 | 48.5 | 53.6 | 1 | 1 | 1 | 70.1 | 21.4 | FXV | JXV |
| 1.5SMC56 | 1.5SMC56C | 45.6 | 50.4 | 61.6 | 1 | 1 | 1 | 80.5 | 18.6 | FXW | JXW |
| 1.5SMC56A | 1.5SMC56CA | 47.8 | 53.2 | 58.8 | 1 | 1 | 1 | 77 | 19.5 | FXX | JXX |
| 1.5SMC62 | 1.5SMC62C | 50.2 | 55.8 | 68.2 | 1 | 1 | 1 | 89 | 16.9 | FXY | JXY |
| 1.5SMC62A | 1.5SMC62CA | 53 | 58.9 | 65.1 | 1 | 1 | 1 | 85 | 17.7 | FXZ | JXZ |
| 1.5SMC68 | 1.5SMC68C | 55.1 | 61.2 | 74.8 | 1 | 1 | 1 | 98 | 15.3 | FYA | JYA |
| 1.5SMC68A | 1.5SMC68CA | 58.1 | 64.6 | 71.4 | 1 | 1 | 1 | 92 | 16.3 | FYB | JYB |
| 1.5SMC75 | 1.5SMC75C | 60.7 | 67.5 | 82.5 | 1 | 1 | 1 | 108 | 13.9 | FYC | JYC |
| 1.5SMC75A | 1.5SMC75CA | 64.1 | 71.3 | 78.8 | 1 | 1 | 1 | 103 | 14.6 | FYD | JYD |
| 1.5SMC82 | 1.5SMC82C | 66.4 | 73.8 | 90.2 | 1 | 1 | 1 | 118 | 12.7 | FYE | JYE |
| 1.5SMC82A | 1.5SMC82CA | 70.1 | 77.9 | 86.1 | 1 | 1 | 1 | 113 | 13.3 | FYF | JYF |
| 1.5SMC91 | 1.5SMC91C | 73.7 | 81.9 | 100 | 1 | 1 | 1 | 131 | 11.4 | FYG | JYG |
| 1.5SMC91A | 1.5SMC91CA | 77.8 | 86.5 | 95.5 | 1 | 1 | 1 | 125 | 12 | FYH | JYH |
| 1.5SMC100 | 1.5SMC100C | 81 | 90 | 110 | 1 | 1 | 1 | 144 | 10.4 | FYJ | JYJ |
| 1.5SMC100A | 1.5SMC100CA | 85.5 | 95 | 105 | 1 | 1 | 1 | 137 | 11 | FYK | JYK |
| 1.5SMC110 | 1.5SMC110C | 89.2 | 99 | 121 | 1 | 1 | 1 | 158 | 9.5 | FYL | JYL |
| 1.5SMC110A | 1.5SMC110CA | 94 | 105 | 116 | 1 | 1 | 1 | 152 | 9.9 | FYM | JYM |
| 1.5SMC120 | 1.5SMC120C | 97.2 | 108 | 132 | 1 | 1 | 1 | 173 | 8.7 | FYN | JYN |
| 1.5SMC120A | 1.5SMC120CA | 102 | 114 | 126 | 1 | 1 | 1 | 165 | 9.1 | FYP | JYP |
| 1.5SMC130 | 1.5SMC130C | 105 | 117 | 143 | 1 | 1 | 1 | 187 | 8 | FYQ | JYQ |
| 1.5SMC130A | 1.5SMC130CA | 111 | 124 | 137 | 1 | 1 | 1 | 179 | 8.4 | FYR | JYR |
| 1.5SMC150 | 1.5SMC150C | 121 | 135 | 165 | 1 | 1 | 1 | 215 | 7 | FYS | JYS |
| 1.5SMC150A | 1.5SMC150CA | 128 | 143 | 158 | 1 | 1 | 1 | 207 | 7.2 | FYT | JYT |
| 1.5SMC160 | 1.5SMC160C | 130 | 144 | 176 | 1 | 1 | 1 | 230 | 6.5 | FYU | JYU |
| 1.5SMC160A | 1.5SMC160CA | 136 | 152 | 168 | 1 | 1 | 1 | 219 | 6.8 | FYV | JYV |
| 1.5SMC170 | 1.5SMC170C | 138 | 153 | 187 | 1 | 1 | 1 | 244 | 6.2 | FYW | JYW |
| 1.5SMC170A | 1.5SMC170CA | 145 | 162 | 179 | 1 | 1 | 1 | 234 | 6.4 | FYX | JYX |
| 1.5SMC180 | 1.5SMC180C | 146 | 162 | 198 | 1 | 1 | 1 | 258 | 5.8 | FYY | JYY |
| 1.5SMC180A | 1.5SMC180CA | 154 | 171 | 189 | 1 | 1 | 1 | 246 | 6.1 | FYZ | JYZ |
| 1.5SMC200 | 1.5SMC200C | 162 | 180 | 220 | 1 | 1 | 1 | 287 | 5.2 | FWA | JWA |
| 1.5SMC200A | 1.5SMC200CA | 171 | 190 | 210 | 1 | 1 | 1 | 274 | 5.5 | FWB | JWB |
| 1.5SMC220 | 1.5SMC220C | 175 | 198 | 242 | 1 | 1 | 1 | 344 | 4.3 | FWC | JWC |
| 1.5SMC220A | 1.5SMC220CA | 185 | 209 | 231 | 1 | 1 | 1 | 328 | 4.6 | FWD | JWD |
| 1.5SMC250 | 1.5SMC250C | 202 | 225 | 275 | 1 | 1 | 1 | 360 | 4.3 | FWE | JWE |
| 1.5SMC250A | 1.5SMC250CA | 214 | 237 | 263 | 1 | 1 | 1 | 344 | 4.5 | FWF | JWF |



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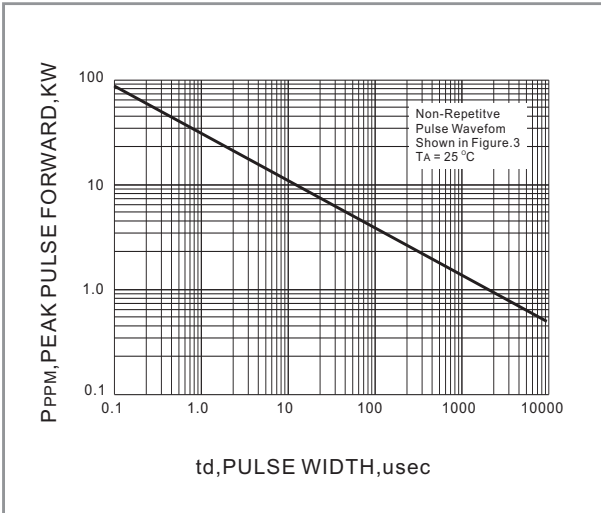


Fig.1 PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE

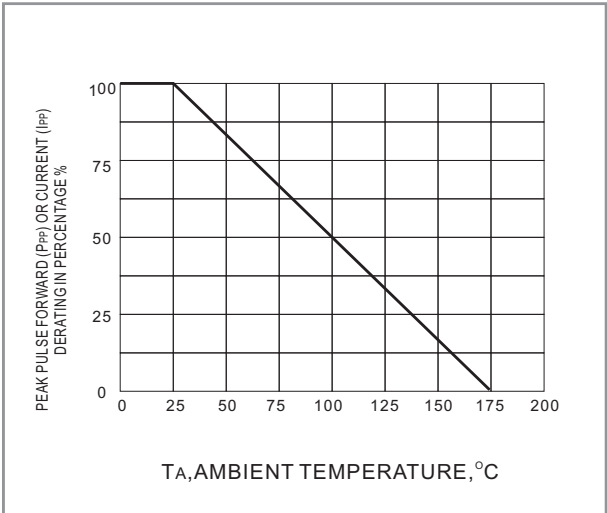


Fig.2 PULSE DERATING CURVE

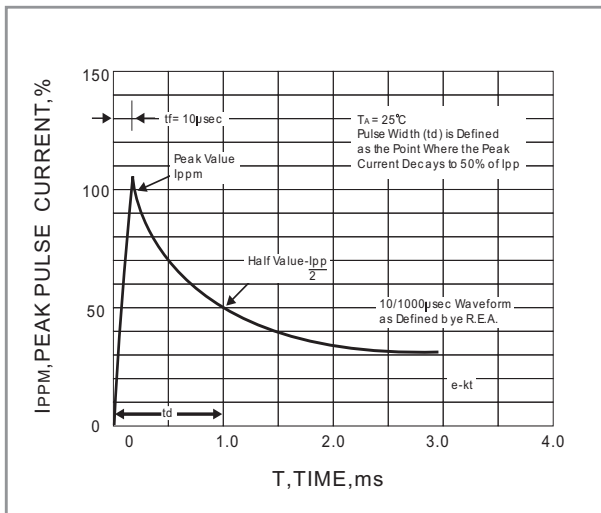


Fig.3 PULSE WAVEFORM

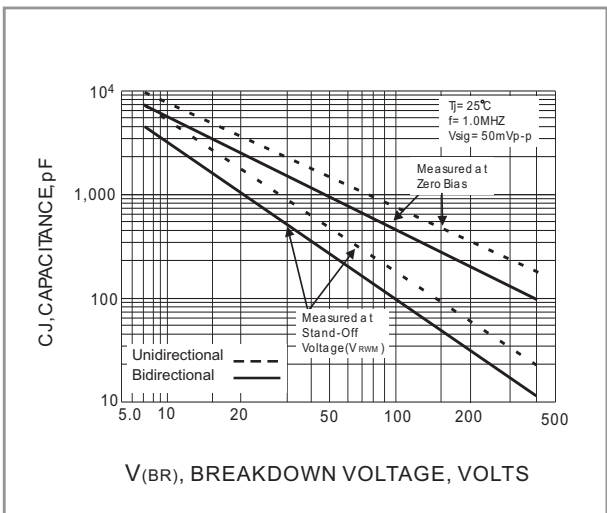


Fig.4 TYPICAL JUNCTION CAPACITANCE

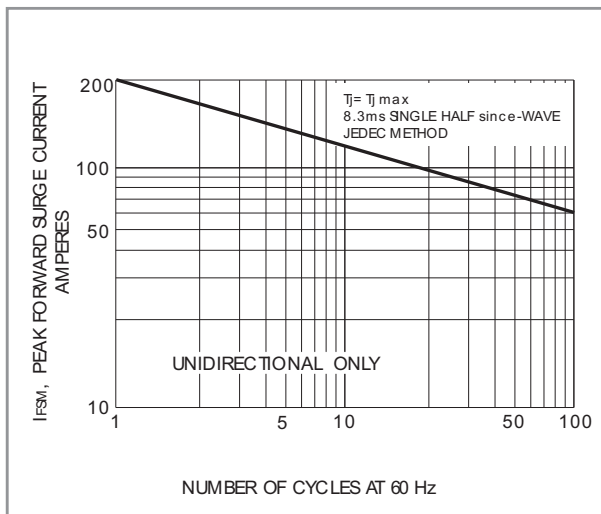
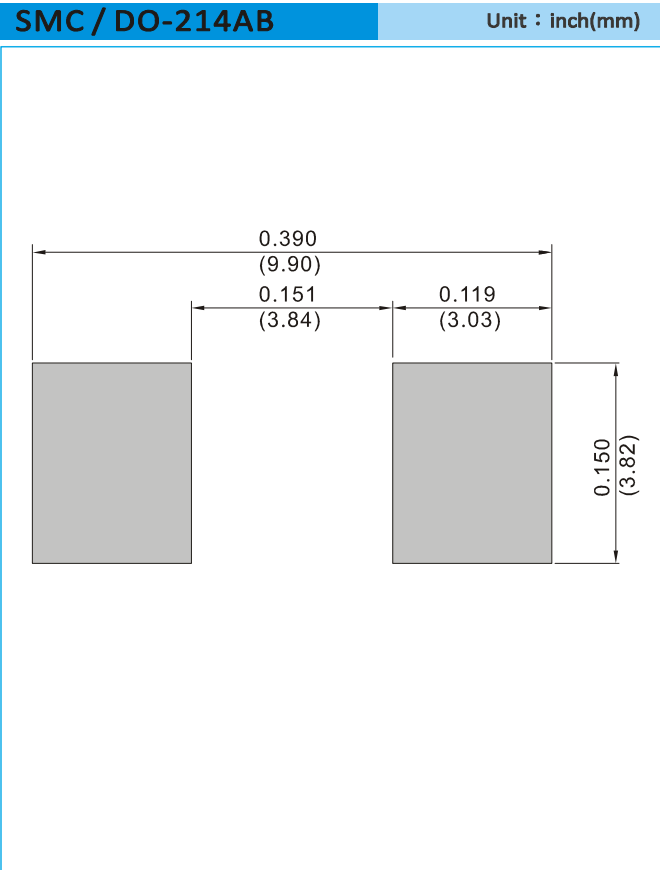


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
T/R - 3K per 13" plastic Reel
T/R - 0.8K per 7" plastic Reel



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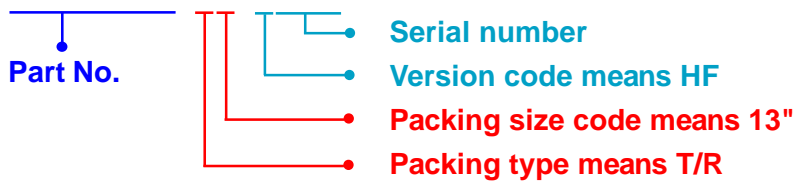
Part No_packing code_Version

1.5SMC6.8_R1_00001

1.5SMC6.8_R2_00001

For example :

RB500V-40 **R2** **00001**



| Packing Code XX | | | | Version Code XXXXX | | |
|--------------------------------------|----------------------|----------------------------------|----------------------|--------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | HF | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS | 1 | serial number |
| Bulk Packing (B/P) | B | 13" | 2 | | | |
| Tube Packing (T/P) | T | 26mm | X | | | |
| Tape and Reel (Right Oriented) (TRR) | S | 52mm | Y | | | |
| Tape and Reel (Left Oriented) (TRL) | L | PANASERT T/B CATHODE UP (PBCU) | U | | | |
| FORMING | F | PANASERT T/B CATHODE DOWN (PBCD) | D | | | |



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