



## 5.0SMCJ SERIES

### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR PEAK PULSE POWER 5000 Watt

**STAND-OFF VOLTAGE**

**20 to 250 Volt**

**SMC / DO-214AB**

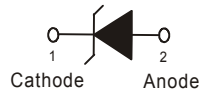
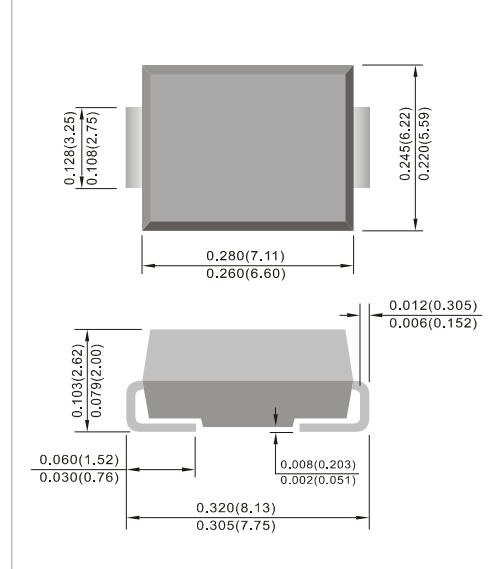
Unit : inch(mm)

#### FEATURES

- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- 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 DO-214AB, Molded plastic over passivated junction.
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Standard Packaging: 16mm tape (EIA-481)
- Weight: 0.0082 ounce, 0.232 gram



#### MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C Ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.  
 For Capacitive load derate current by 20%.

| Rating   | Symbol          | Value                | Units  |
|--|-----------------|----------------------|--------|
| Peak Power Dissipation (tp=10/1000μs waveform) (Notes 1)                           | $P_{PP}$        | 5000                 | Watts  |
| Peak Pulse Current on (tp=10/1000μs waveform) (Notes 1)                            | $I_{PPM}$       | See table            | Amps   |
| Typical Thermal Resistance Junction to Air (Notes 2)                               | $R_{\theta JA}$ | 110                  | °C / W |
| ESD IEC-61000-4-2 (Air)<br>ESD IEC-61000-4-2 (Contact)                             | $V_{ESD}$       | $\pm 30$<br>$\pm 30$ | kV     |
| Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$       | 300                  | Amps   |
| Operating Junction and Storage Temperature Range                                   | $T_J, T_{STG}$  | -55 to +150          | °C     |

#### NOTES :

1. Non-repetitive current pulse.
2. Mounted on a FR4 PCB, single-sided copper, mini pad.
3. 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.

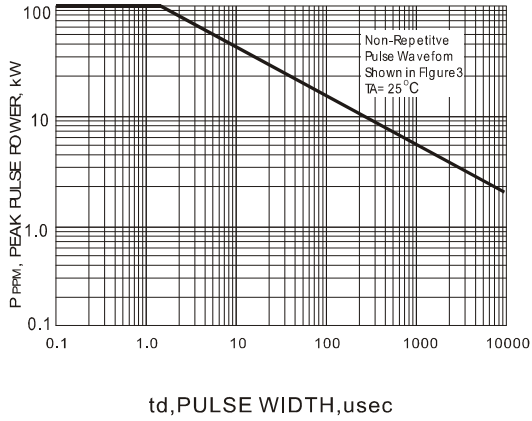


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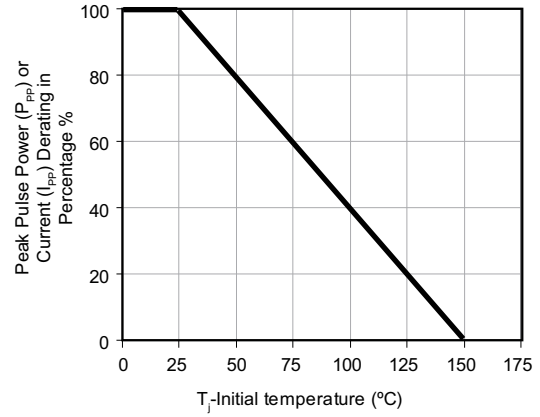
| Part Number | Reverse Stand-off Voltage  | Breakdown Voltage                |       | Test Current   | Reverse Leakage                   | Max.Clamp Voltage 10/1000 $\mu$ s | Peak Pulse Current 10/1000 $\mu$ s | Marking Code |
|-------------|----------------------------|----------------------------------|-------|----------------|-----------------------------------|-----------------------------------|------------------------------------|--------------|
|             | V <sub>RWM</sub> (Notes 3) | V <sub>BR</sub> @ I <sub>T</sub> |       | I <sub>T</sub> | I <sub>R</sub> @ V <sub>RWM</sub> | V <sub>C</sub> @ I <sub>PP</sub>  | I <sub>PP</sub>                    |              |
|             |                            | Min.                             | Max.  |                |                                   |                                   |                                    |              |
| 5.0SMCJ20A  | 20                         | 22.2                             | 25.5  | 1              | 3                                 | 32.4                              | 155                                | 5HEV         |
| 5.0SMCJ22A  | 22                         | 24.4                             | 28    | 1              | 3                                 | 35.5                              | 141                                | 5HEX         |
| 5.0SMCJ24A  | 24                         | 26.7                             | 30.7  | 1              | 3                                 | 38.9                              | 129                                | 5HEZ         |
| 5.0SMCJ26A  | 26                         | 28.9                             | 33.2  | 1              | 3                                 | 42.1                              | 119                                | 5HFE         |
| 5.0SMCJ28A  | 28                         | 31.1                             | 35.8  | 1              | 3                                 | 45.4                              | 110                                | 5HFG         |
| 5.0SMCJ30A  | 30                         | 33.3                             | 38.3  | 1              | 3                                 | 48.4                              | 103                                | 5HFK         |
| 5.0SMCJ33A  | 33                         | 36.7                             | 42.2  | 1              | 3                                 | 53.3                              | 93.9                               | 5HFM         |
| 5.0SMCJ36A  | 36                         | 40                               | 46    | 1              | 3                                 | 58.1                              | 86.1                               | 5HFP         |
| 5.0SMCJ40A  | 40                         | 44.4                             | 51.1  | 1              | 3                                 | 64.5                              | 77.6                               | 5HFR         |
| 5.0SMCJ43A  | 43                         | 47.8                             | 54.9  | 1              | 3                                 | 69.4                              | 72.1                               | 5HFT         |
| 5.0SMCJ45A  | 45                         | 50                               | 57.5  | 1              | 3                                 | 72.7                              | 68.8                               | 5HFV         |
| 5.0SMCJ48A  | 48                         | 53.3                             | 61.3  | 1              | 3                                 | 77.4                              | 64.7                               | 5HFX         |
| 5.0SMCJ51A  | 51                         | 56.7                             | 65.2  | 1              | 3                                 | 82.4                              | 60.7                               | 5HFZ         |
| 5.0SMCJ54A  | 54                         | 60                               | 69    | 1              | 3                                 | 87.1                              | 57.5                               | 5HGE         |
| 5.0SMCJ58A  | 58                         | 64.4                             | 74.1  | 1              | 3                                 | 93.6                              | 53.5                               | 5HGG         |
| 5.0SMCJ60A  | 60                         | 66.7                             | 76.7  | 1              | 3                                 | 96.8                              | 51.7                               | 5HGK         |
| 5.0SMCJ64A  | 64                         | 71.1                             | 81.8  | 1              | 3                                 | 103                               | 48.6                               | 5HGM         |
| 5.0SMCJ70A  | 70                         | 77.8                             | 89.5  | 1              | 3                                 | 113                               | 44.3                               | 5HGP         |
| 5.0SMCJ75A  | 75                         | 83.3                             | 95.8  | 1              | 3                                 | 121                               | 41.4                               | 5HGR         |
| 5.0SMCJ78A  | 78                         | 86.7                             | 99.7  | 1              | 3                                 | 126                               | 39.7                               | 5HGT         |
| 5.0SMCJ85A  | 85                         | 94.4                             | 108.2 | 1              | 3                                 | 137                               | 36.5                               | 5HGV         |
| 5.0SMCJ90A  | 90                         | 100                              | 115.5 | 1              | 3                                 | 146                               | 34.3                               | 5HGX         |
| 5.0SMCJ100A | 100                        | 111                              | 128   | 1              | 3                                 | 162                               | 30.9                               | 5HGZ         |
| 5.0SMCJ110A | 110                        | 122                              | 135   | 1              | 3                                 | 177                               | 28.8                               | 5HHE         |
| 5.0SMCJ120A | 120                        | 133                              | 147   | 1              | 3                                 | 193                               | 26.4                               | 5HHG         |
| 5.0SMCJ130A | 130                        | 144                              | 159   | 1              | 3                                 | 209                               | 24.4                               | 5HHK         |
| 5.0SMCJ150A | 150                        | 167                              | 185   | 1              | 3                                 | 243                               | 21                                 | 5HHM         |
| 5.0SMCJ160A | 160                        | 178                              | 197   | 1              | 3                                 | 259                               | 19.7                               | 5HHP         |
| 5.0SMCJ170A | 170                        | 189                              | 209   | 1              | 3                                 | 275                               | 18.5                               | 5HHR         |
| 5.0SMCJ180A | 180                        | 200                              | 221   | 1              | 3                                 | 292                               | 17.5                               | 5HHT         |
| 5.0SMCJ190A | 190                        | 211                              | 233   | 1              | 3                                 | 310                               | 16.5                               | 5HHV         |
| 5.0SMCJ200A | 200                        | 222                              | 246   | 1              | 3                                 | 329.2                             | 15.5                               | 5HHX         |
| 5.0SMCJ210A | 210                        | 233                              | 258   | 1              | 3                                 | 349.5                             | 14.6                               | 5HHZ         |
| 5.0SMCJ220A | 220                        | 244                              | 270   | 1              | 3                                 | 371.1                             | 13.7                               | 5HIE         |
| 5.0SMCJ250A | 250                        | 277                              | 306   | 1              | 3                                 | 400                               | 12.5                               | 5HIG         |



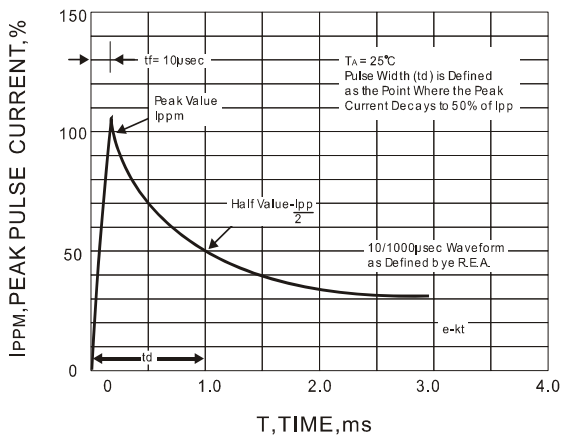
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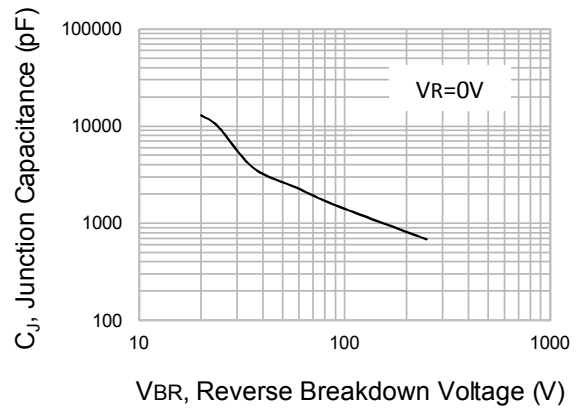
**Fig.1 PEAK PULSE POWER RATING VERSUS PULSE TIME CURVE**



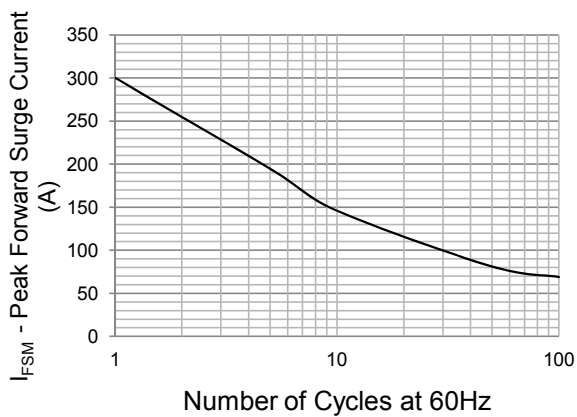
**Fig.2 PEAK PULSE POWER OR CURRENT DERATING CURVE**



**Fig.3 PULSE WAVEFORM**



**Fig.4 TYPICAL JUNCTION CAPACITANCE**



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

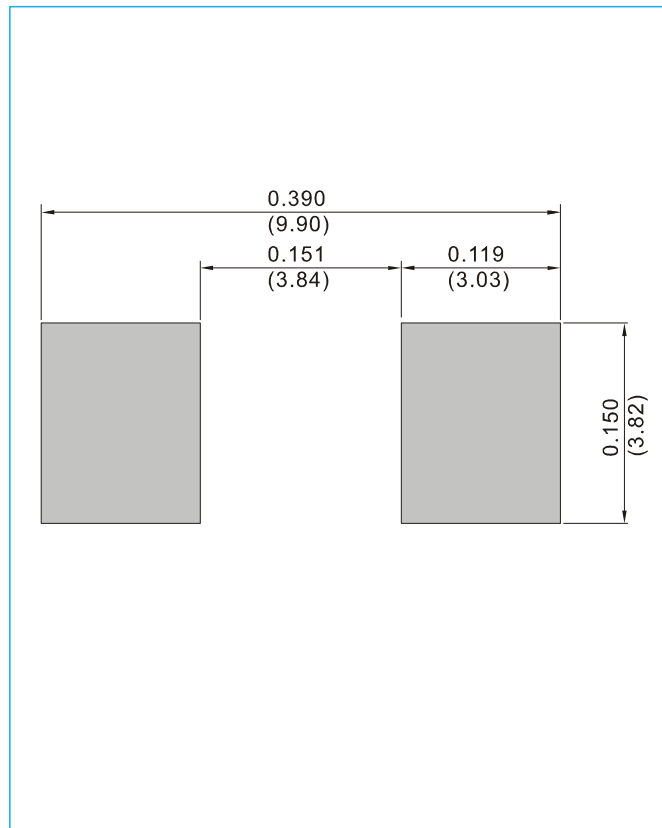


## 5.0SMCJ SERIES

### MOUNTING PAD LAYOUT

**SMC / DO-214AB**

Unit : inch(mm)



### ORDER INFORMATION

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



## 5.0SMCJ SERIES

### Part No\_packing code\_Version

5.0SMCJ20A\_R1\_00001

5.0SMCJ20A\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> 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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