



## Current Protection TVS Device/FCTVS : FCSMCJ series

### Preliminary

#### 1. Summary

- (a) **RoHS Compliant Product**
- (b) **Operation Voltage: 24Vdc to 48Vdc**
- (c) **Maximum Peak Pulse Current for 10x1000us Current Wave, single pulse: 19.4-38.6A**
- (d) **Temperature Range : -40°C to 85°C**

#### 2. Agency Recognition

- UL: In process
- C-UL: In process

#### 3. Feature

- For surface mounted applications in order to optimize board space
- Halogen-Free
- RoHS compliant
- Typical maximum temperature coefficient  $\Delta VBR=0.1\% \times VBR @ 25^{\circ}C \times \Delta T$
- 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 from 0 Volts to BV min
- Typical IR less than 1uA above 12V
- High Temperature soldering: 260°C/40 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte Tin Lead-free plated

#### 4. Applications

- **Surge protection in consumer electronics**
- **Surge protection in industrial electronics.**
- **Surge protection in electronic home appliances**
- **Relay and Electromagnetic valve surge absorption**



**5. FCSMCJ Electrical Characteristics (25°C)**

| Part Number | Device Marking Code. | Reverse Stand-Off Voltage $V_{RWM}(V)$ | Breakdown Voltage $V_{BR}(V) @I_T$ |       | Test Current $I_T$ (mA) | Maximum Clamping Voltage $V_C(V)@I_{PP}$ | Maximum Peak Pulse Current $I_{PP}$ (A) | Abnormal Overvoltage Surge Protection Specification |     |     |       | Maximum Reverse Leakage $I_R @ V_{RWM}$ |
|-------------|----------------------|--|------------------------------------|-------|-------------------------|--|---|---|-----|-----|-------|---|
|             |                      |  | $V_{RWM}(V)$                       | Min.  |                         |  |   | Max.  | mA  | Vc  | Ipp   |   |
|             |                      | Uni                                    | V(DC)                              | V(DC) | V(DC)                   | mA                                       | V                                       | A   | (V) | (A) | (Sec) | (°C)                                    |
| FCSMCJ24A   | CGEZ                 | 24                                     | 24.4                               | 29.5  | 1                       | 38.9                                     | 38.6                                    | 39  | 5   | 1   | 110   | 1                                       |
| FCSMCJ36A   | CGFP                 | 36                                     | 36.7                               | 44.2  | 1                       | 58.1                                     | 25.9                                    | 59  | 3   | 1   | 110   | 1                                       |
| FCSMCJ48A   | CGFX                 | 48                                     | 50.0                               | 58.9  | 1                       | 77.4                                     | 19.4                                    | 78  | 3   | 1   | 110   | 1                                       |



6. Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating

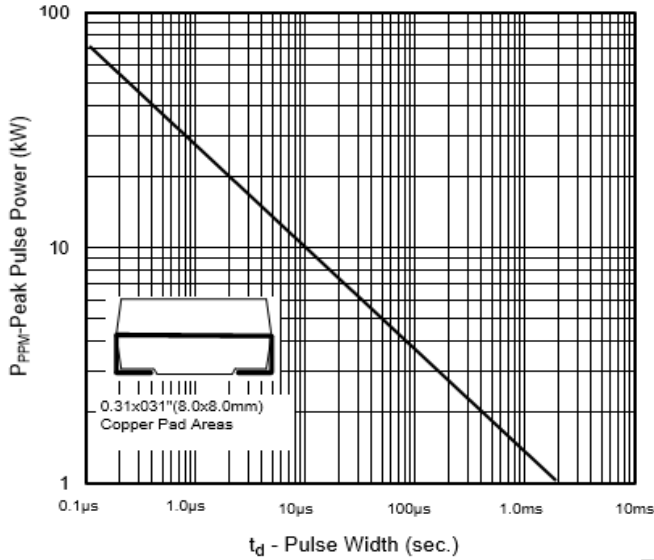


Fig.2 - Pulse Derating Curve

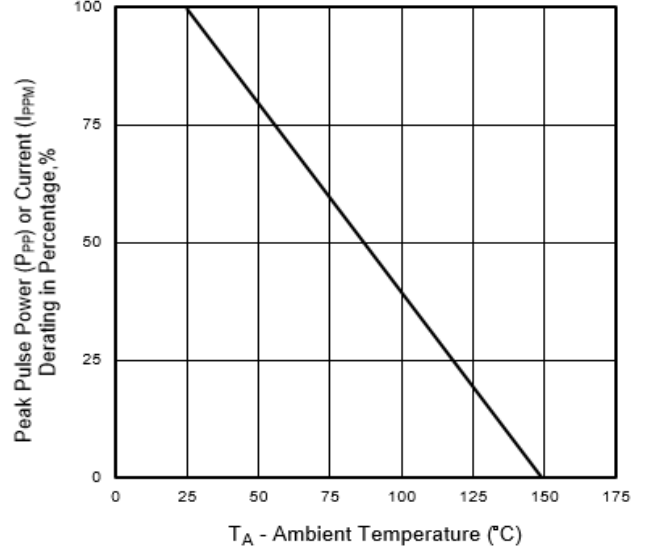


Fig.3 - Pulse Waveform

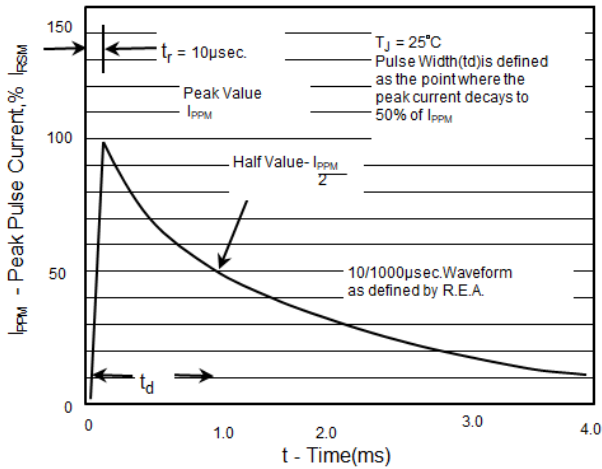


Fig. 4 - Typical Junction Capacitance

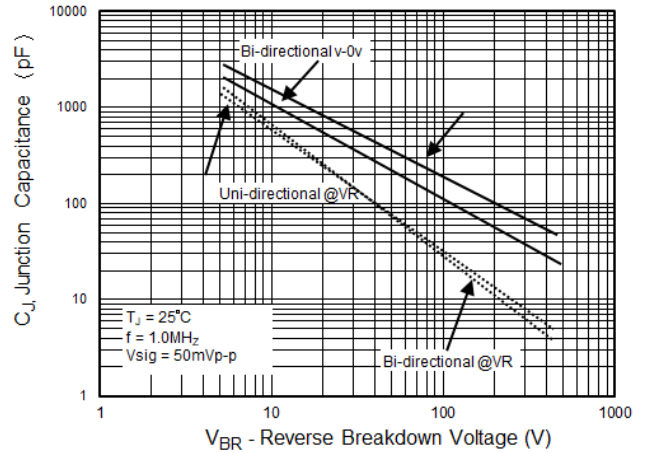


Fig. 5 - Steady State Power Derating Curve

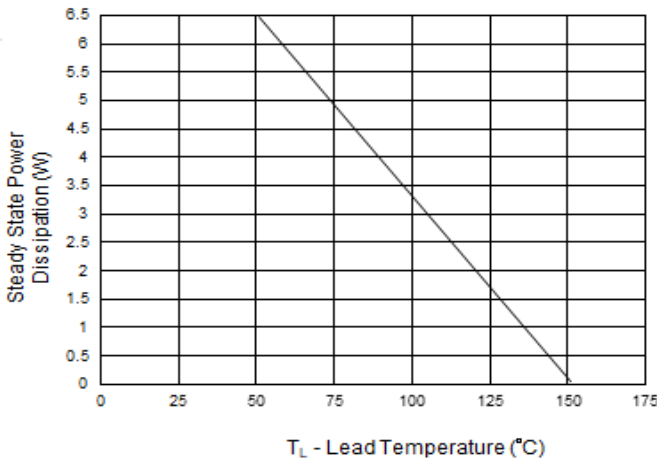
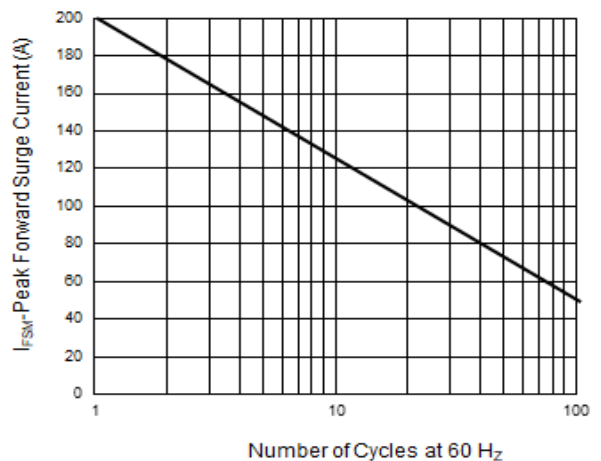


Fig.6 - Maximum Non-repetitive Forward Surge current uni-directional only

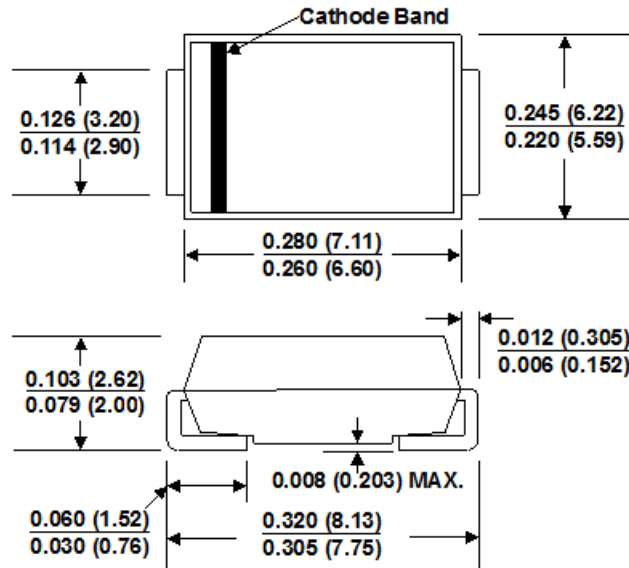


NOTE : Specification subject to change without notice.



### 7. Dimension

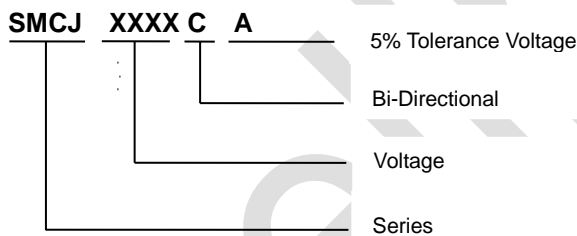
#### DO-214AB (SMC J-Bend)



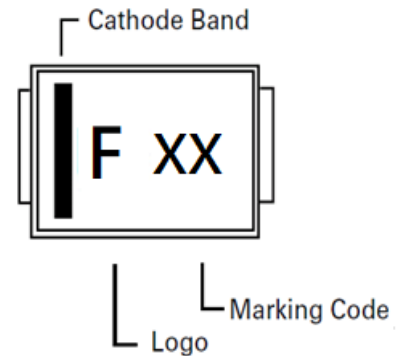
Dimensions in inches and (millimeters)

### 8. Part Numbering and Marking System

#### Part Numbering System



#### Marking System



### 9. Packaging Specification

| Part Number | Component Package | Quantity | Packaging Option            | Packaging Specification |
|-------------|-------------------|----------|-----------------------------|-------------------------|
| SMCJxxxXX   | DO-214AB          | 3000     | Tape & Reel - 16mm/13" tape | EIA STD RS-481          |
| SMCJxxxXX   | DO-214AB          | 500      | Tape & Reel - 16mm/ 7" tape | EIA STD RS-481          |

NOTE : Specification subject to change without notice.