

### Major Ratings and Characteristics

|                    |                |
|--------------------|----------------|
| $I_{F(AV)}$        | 3.0A           |
| $V_{RRM}$          | 50 V to 1000 V |
| $I_{FSM}$          | 100 A          |
| $t_{rr}$           | 50nS,75ns      |
| $V_F$              | 1.0V,1.3V,1.7V |
| $T_j \text{ max.}$ | 150 °C         |



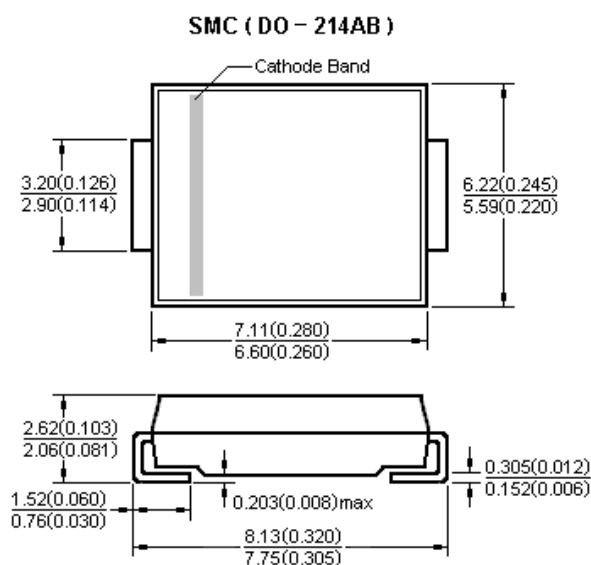
SMC (DO - 214AB )

### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- High temperature soldering:  
260°C/10 seconds at terminals
- Component in accordance to  
RoHS 2002/95/1 and WEEE 2002/96/EC

### Mechanical Data

- **Case:** JEDEC DO-214AB molded plastic body over passivated chip
- **Terminals:** Solder plated, solderable per J-STD-002B and JESD22-B102D
- **Polarity:** Laser band denotes cathode end



Dimensions in millimeters and (inches)

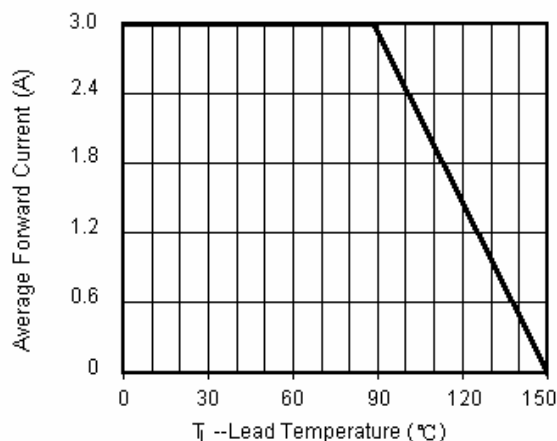
### Maximum Ratings & Thermal Characteristics & Electrical Characteristics

( $T_A = 25\text{ °C}$  unless otherwise noted)

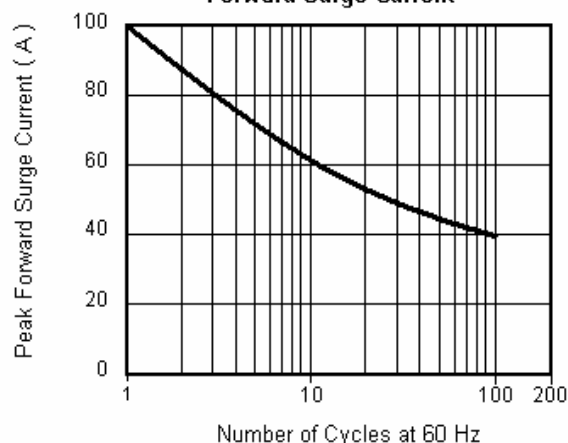
|                                                                                                                | Symbol                            | US3A        | US3B | US3D | US3G | US3J | US3K | US3M | UNIT  |
|----------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------|------|------|------|------|------|-------|
| Maximum repetitive peak reverse voltage                                                                        | V <sub>RRM</sub>                  | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V     |
| Maximum RMS voltage                                                                                            | V <sub>RMS</sub>                  | 35          | 70   | 140  | 280  | 420  | 560  | 700  | V     |
| Maximum DC blocking voltage                                                                                    | V <sub>DC</sub>                   | 50          | 100  | 200  | 400  | 600  | 800  | 1000 | V     |
| Maximum average forward rectified current                                                                      | I <sub>F(AV)</sub>                | 3           |      |      |      |      |      |      | A     |
| Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load                             | I <sub>FSM</sub>                  | 100         |      |      |      |      |      |      | A     |
| Maximum instantaneous forward voltage at 3.0A                                                                  | V <sub>F</sub>                    | 1.0         |      |      | 1.3  | 1.7  |      |      | V     |
| Maximum DC reverse current<br>at Rated DC blocking voltage                                                     | I <sub>R</sub>                    | 10.0        |      |      |      |      |      |      | μA    |
| T <sub>A</sub> = 25 °C<br>T <sub>A</sub> = 100°C                                                               |                                   | 50          |      |      |      |      |      |      |       |
| Maximum reverse recovery time<br>at I <sub>F</sub> = 0.5 A , I <sub>R</sub> = 1.0 A , I <sub>rr</sub> = 0.25 A | t <sub>rr</sub>                   | 50          |      |      |      | 75   |      |      | nS    |
| Typical junction capacitance at 4.0 V ,1MHz                                                                    | C <sub>J</sub>                    | 15          |      |      |      |      |      |      | pF    |
| Thermal resistance from junction to Lead                                                                       | R <sub>θJL</sub>                  | 75          |      |      |      |      |      |      | °C/ W |
| Operating junction and storage temperature range                                                               | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |      |      |      |      |      |      | °C    |

**Characteristic Curves** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

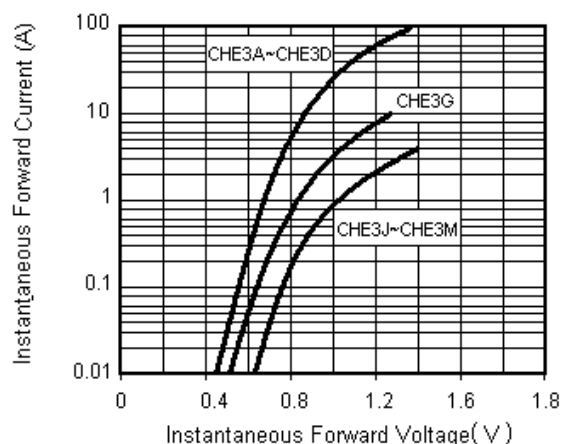
**Fig.1 Forward Current Derating Curve**



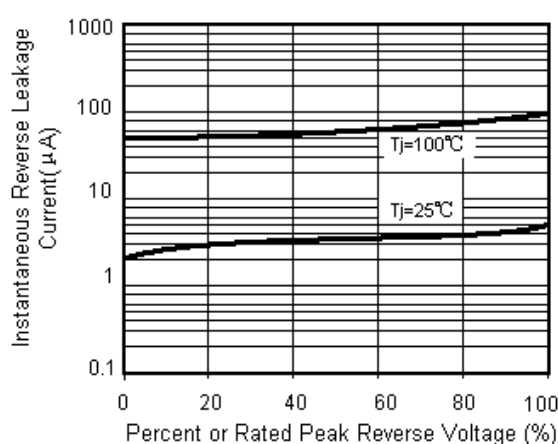
**Fig.2 Maximum Non-Repetitive Peak Forward Surge Current**



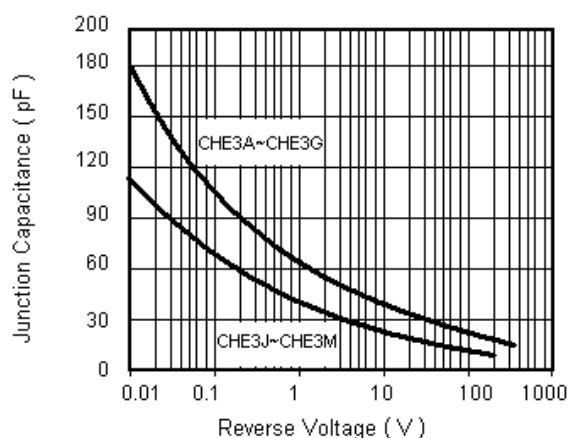
**Fig.3 Typical Instantaneous Forward Characteristics**



**Fig.4 Typical Reverse Leakage Characteristics**



**Fig.5 Typical Junction Capacitance**



**Fig.6 Transient Thermal Impedance**

