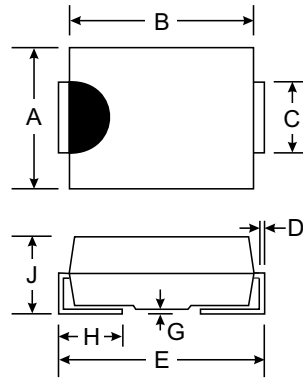


### Features

- Glass Passivated Die Construction
- Fast Recovery Time for High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 100A Peak
- Ideally Suited for Automatic Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: Molded Plastic
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- SMB Weight: 0.09 grams (approx.)
- SMC Weight: 0.20 grams (approx.)



| Dim                  | SMB  |      | SMC  |      |
|----------------------|------|------|------|------|
|                      | Min  | Max  | Min  | Max  |
| A                    | 3.30 | 3.94 | 5.59 | 6.22 |
| B                    | 4.06 | 4.57 | 6.60 | 7.11 |
| C                    | 1.96 | 2.21 | 2.75 | 3.18 |
| D                    | 0.15 | 0.31 | 0.15 | 0.31 |
| E                    | 5.00 | 5.59 | 7.75 | 8.13 |
| G                    | 0.10 | 0.20 | 0.10 | 0.20 |
| H                    | 0.76 | 1.52 | 0.76 | 1.52 |
| J                    | 2.00 | 2.62 | 2.00 | 2.62 |
| All Dimensions in mm |      |      |      |      |

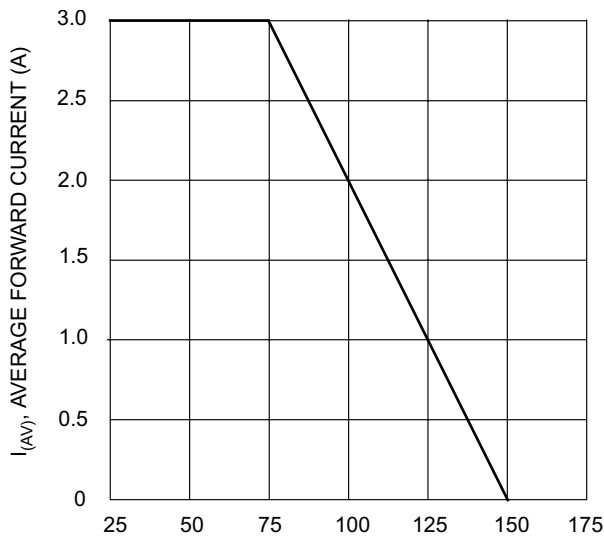
AB, BB, DB, GB, JB, KB, MB Suffix Designates SMB Package  
 A, B, D, G, J, K, M Suffix Designates SMC Package

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

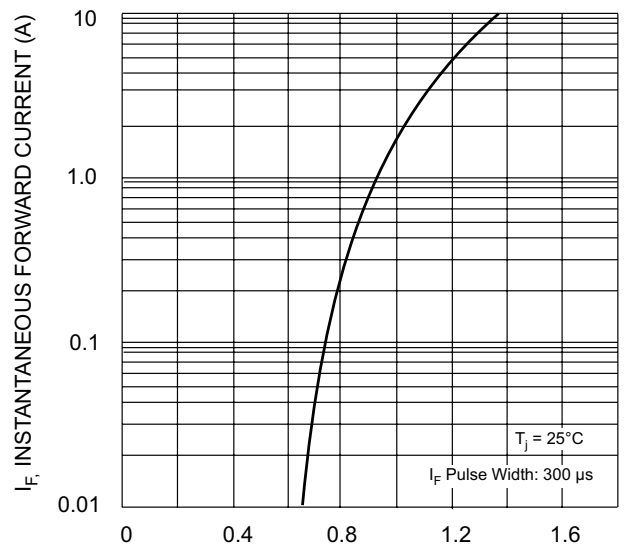
Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic                                                                                                        | Symbol                          | RS3<br>A/AB | RS3<br>B/BB | RS3<br>D/DB | RS3<br>G/GB | RS3<br>J/JB | RS3<br>K/KB | RS3<br>M/MB | Unit               |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50          | 100         | 200         | 400         | 600         | 800         | 1000        | V                  |
| RMS Reverse Voltage                                                                                                   | $V_{R(RMS)}$                    | 35          | 70          | 140         | 280         | 420         | 560         | 700         | V                  |
| Average Rectified Output Current @ $T_T = 75^{\circ}\text{C}$                                                         | $I_O$                           | 3.0         |             |             |             |             |             |             | A                  |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load<br>(JEDEC Method) | $I_{FSM}$                       | 100         |             |             |             |             |             |             | A                  |
| Forward Voltage @ $I_F = 3.0\text{A}$                                                                                 | $V_{FM}$                        | 1.3         |             |             |             |             |             |             | V                  |
| Peak Reverse Current @ $T_A = 25^{\circ}\text{C}$<br>at Rated DC Blocking Voltage @ $T_A = 125^{\circ}\text{C}$       | $I_{RM}$                        | 5.0<br>250  |             |             |             |             |             |             | $\mu\text{A}$      |
| Maximum Recovery Time (Note 3)                                                                                        | $t_{rr}$                        | 150         |             |             |             | 250         | 500         |             | ns                 |
| Typical Junction Capacitance (Note 2)                                                                                 | $C_j$                           | 50          |             |             |             |             |             |             | pF                 |
| Typical Thermal Resistance Junction to Terminal (Note 1)                                                              | $R_{\theta JT}$                 | 25          |             |             |             |             |             |             | K/W                |
| Operating and Storage Temperature Range                                                                               | $T_j, T_{STG}$                  | -65 to +150 |             |             |             |             |             |             | $^{\circ}\text{C}$ |

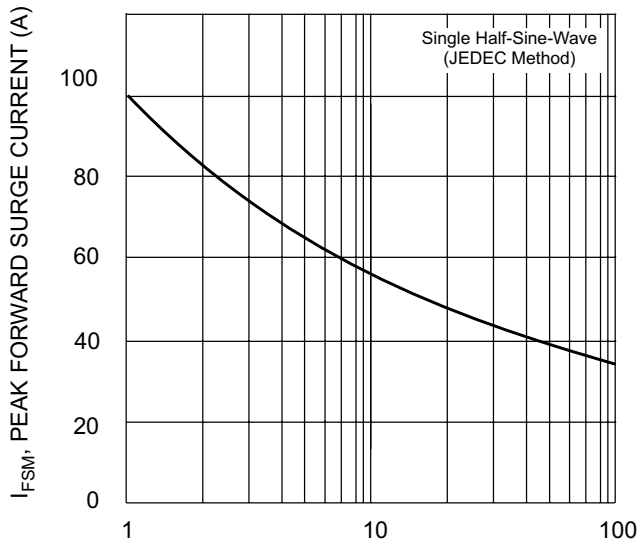
- Notes:
1. Thermal resistance: junction to terminal, unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pad as heat sink.
  2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  3. Reverse recovery test conditions:  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ . See figure 5.



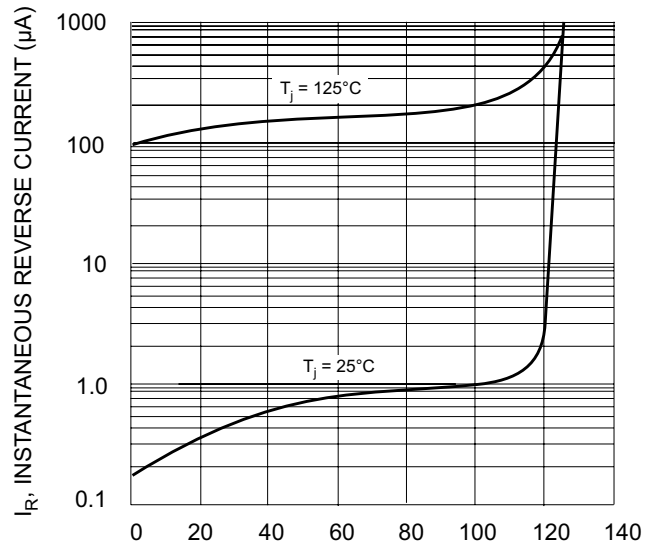
$T_T$ , TERMINAL TEMPERATURE (°C)  
Fig. 1 Forward Current Derating Curve



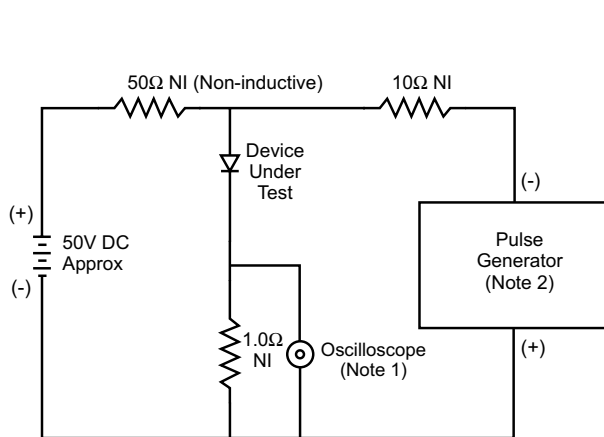
$V_F$ , INSTANTANEOUS FORWARD VOLTAGE (V)  
Fig. 2 Typical Forward Characteristics



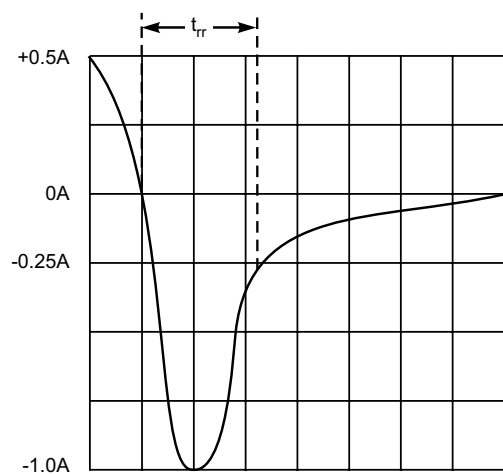
NUMBER OF CYCLES AT 60 Hz  
Fig. 3 Forward Surge Current Derating Curve



PERCENT OF RATED PEAK REVERSE VOLTAGE (%)  
Fig. 4 Typical Reverse Characteristics



- Notes:  
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.  
2. Rise Time = 10ns max. Input Impedance = 50Ω.



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit