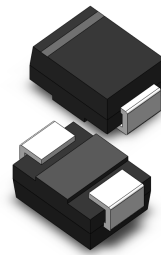


**VOLTAGE RANGE: 50 - 1000V**  
**CURRENT: 1.0 A**

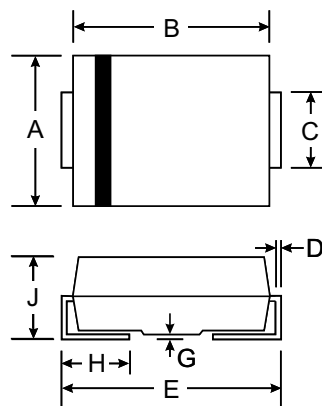


### Features

- Glass Passivated Die Construction
- Diffused Junction
- Ultra-Fast Recovery Time for High Efficiency
- Low Forward Voltage Drop, High Current Capability, and Low Power Loss
- Ideally Suited for Automated Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0

### Mechanical Data

- Case: SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.093 grams (approx.)



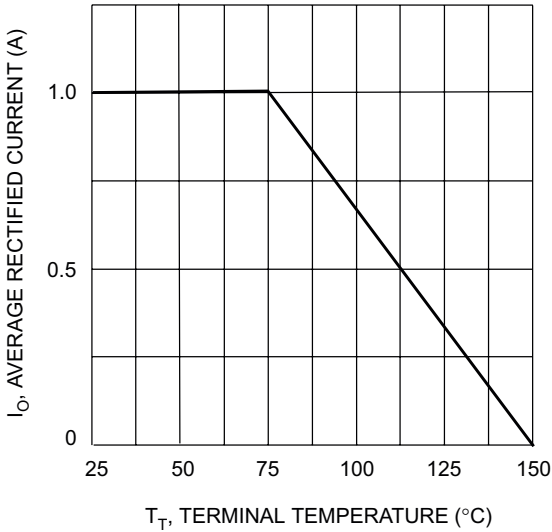
| SMB(DO-214AA)        |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 3.30 | 3.94 |
| B                    | 4.06 | 4.70 |
| C                    | 1.91 | 2.21 |
| D                    | 0.15 | 0.31 |
| E                    | 5.00 | 5.59 |
| G                    | 0.10 | 0.20 |
| H                    | 0.76 | 1.52 |
| J                    | 2.00 | 2.62 |
| All Dimensions in mm |      |      |

### Maximum Ratings and Electrical Characteristics T<sub>A</sub> = 25°C unless otherwise specified

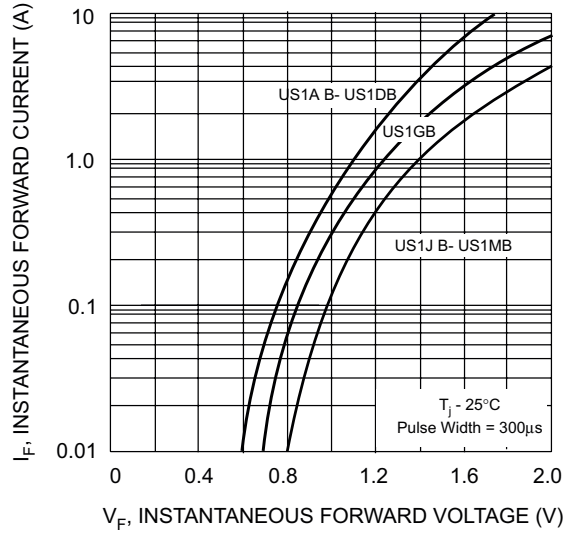
Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Characteristic  | Symbol                            | US1AB       | US1BB | US1DB | US1GB | US1JB | US1KB | US1MB | 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<br>@ T <sub>T</sub> = 75°C   | I <sub>O</sub>                    | 1.0         |       |       |       |       |       |       | A    |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load<br>(JEDEC Method) | I <sub>FSM</sub>                  | 30          |       |       |       |       |       |       | A    |
| Forward Voltage Drop<br>@ I <sub>F</sub> = 1.0A   | V <sub>FM</sub>                   | 1.0         |       | 1.3   |       | 1.7   |       | V     |      |
| Peak Reverse Current<br>at Rated DC Blocking Voltage<br>@ T <sub>A</sub> = 25°C<br>@ T <sub>A</sub> = 100°C           | I <sub>RM</sub>                   | 5.0<br>100  |       |       |       |       |       |       | μA   |
| Reverse Recovery Time (Note 2)  | t <sub>rr</sub>                   | 50          |       |       |       | 75    |       |       | ns   |
| Typical Junction Capacitance (Note 1)   | C <sub>j</sub>                    | 20          |       |       |       | 10    |       |       | pF   |
| Typical Thermal Resistance, Junction to Terminal  | R <sub>θJT</sub>                  | 30          |       |       |       |       |       |       | °C/W |
| Operating and Storage Temperature Range   | T <sub>j</sub> , T <sub>STG</sub> | -65 to +150 |       |       |       |       |       |       | °C   |

- Notes: 1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.  
 2. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A.



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



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

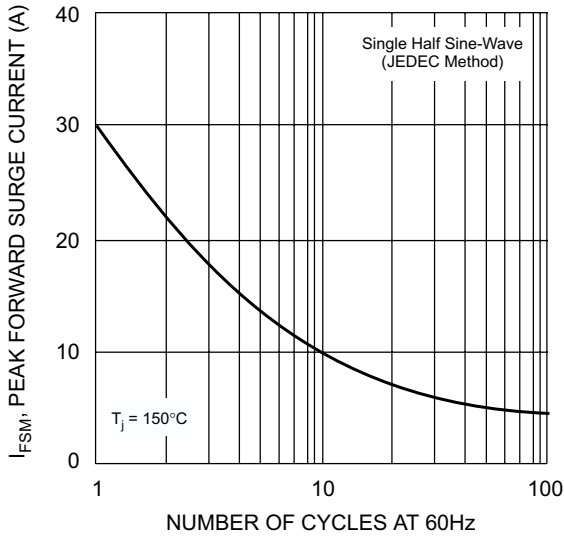


Fig. 3 Forward Surge Current Derating Curve

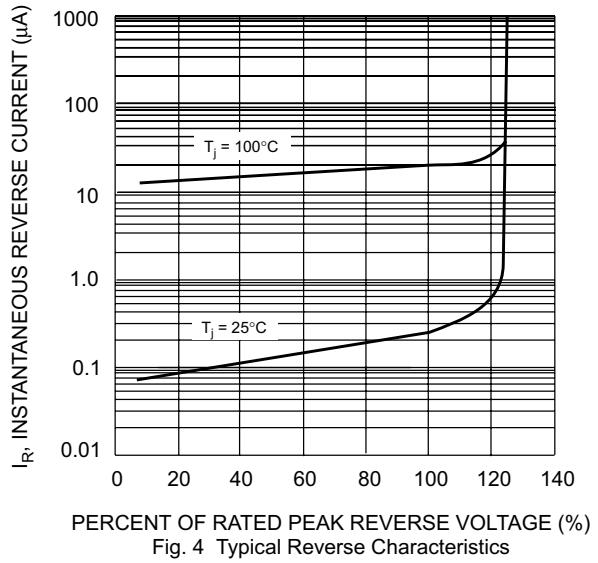
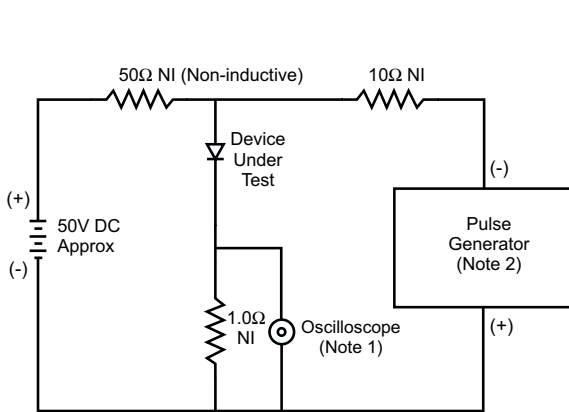
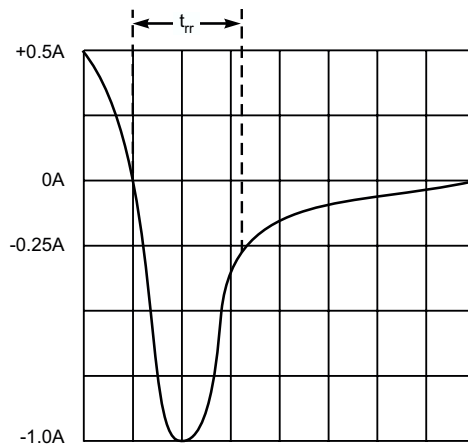


Fig. 4 Typical Reverse Characteristics



- 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