

**VOLTAGE RANGE: 50 - 600**

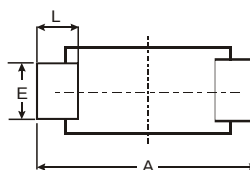
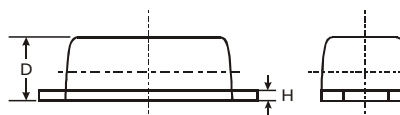
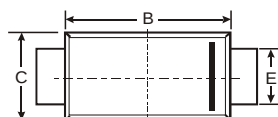
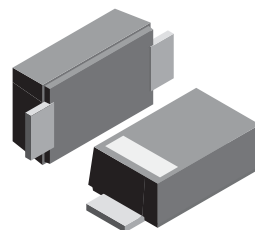
**CURRENT: 1.0 A**

### Features

- Glass Passivated Die Construction
- Ideally Suited for Automatic Assembly
- Low Forward Voltage Drop, High Efficiency
- Low Power Loss
- Super-Fast Recovery Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O

### Mechanical Data

- Case: SMAF, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.0018 ounce, 0.064 grams



| SMAF                 |       |      |      |
|----------------------|-------|------|------|
| Dim                  | Min   | Max  | Typ  |
| A                    | 4.75  | 4.85 | 4.80 |
| B                    | 3.68  | 3.72 | 3.70 |
| C                    | 2.57  | 2.63 | 2.60 |
| D                    | 0.097 | 1.03 | 1.00 |
| E                    | 1.38  | 1.42 | 1.40 |
| H                    | 0.13  | 0.17 | 0.15 |
| L                    | 0.63  | 0.67 | 0.65 |
| 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                          | ES1AF       | ES1BF | ES1CF | ES1DF | ES1EF | ES1GF | ES1JF | Unit          |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|-------|-------|-------|-------|-------|-------|---------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                                | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50          | 100   | 150   | 200   | 300   | 400   | 600   | V             |
| RMS Reverse Voltage                                                                                                   | $V_R(RMS)$                      | 35          | 70    | 105   | 140   | 210   | 280   | 420   | V             |
| Average Rectified Output Current @ $T_L = 120^{\circ}C$                                                               | $I_O$                           | 1.0         |       |       |       |       |       |       | A             |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave superimposed on<br>rated load (JEDEC Method) | $I_{FSM}$                       | 30          |       |       |       |       |       |       | A             |
| Forward Voltage @ $I_F = 1.0A$                                                                                        | $V_{FM}$                        | 0.95        |       |       |       | 1.25  |       | 1.7   | V             |
| Peak Reverse Current @ $T_A = 25^{\circ}C$<br>At Rated DC Blocking Voltage @ $T_A = 100^{\circ}C$                     | $I_{RM}$                        | 5.0<br>500  |       |       |       |       |       |       | $\mu A$       |
| Reverse Recovery Time (Note 1)                                                                                        | $t_{rr}$                        | 35          |       |       |       |       |       |       | nS            |
| Typical Junction Capacitance (Note 2)                                                                                 | $C_j$                           | 10          |       |       |       |       |       |       | pF            |
| Typical Thermal Resistance (Note 3)                                                                                   | $R_{\theta JL}$                 | 35          |       |       |       |       |       |       | $^{\circ}C/W$ |
| Operating and Storage Temperature Range                                                                               | $T_j, T_{STG}$                  | -65 to +150 |       |       |       |       |       |       | $^{\circ}C$   |

Note: 1. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A. See figure 5.  
 2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.  
 3. Mounted on P.C. Board with 8.0mm<sup>2</sup> land area.

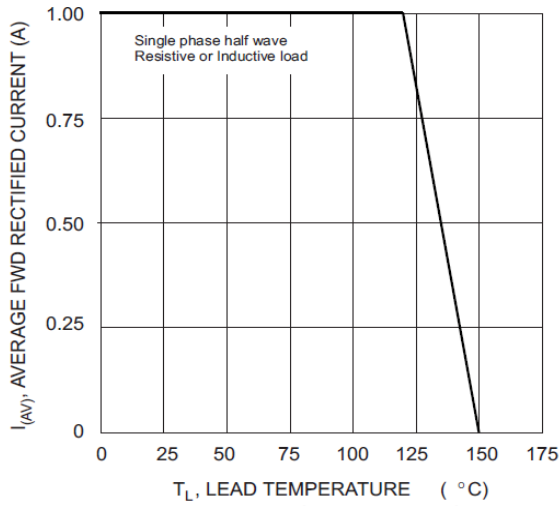


Fig. 1 Forward Current Derating Curve

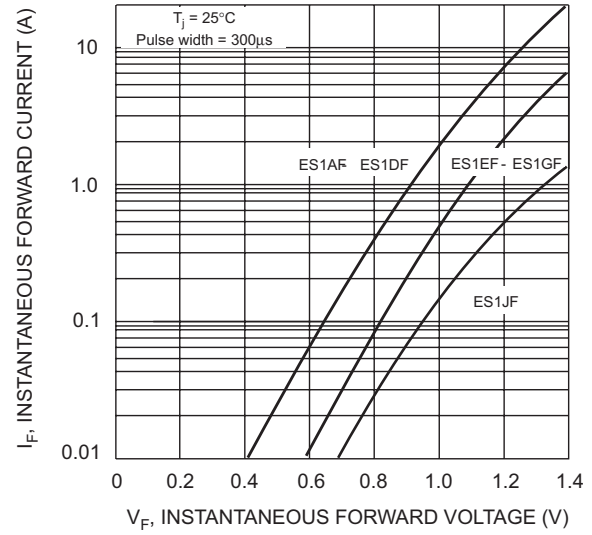


Fig. 2 Typical Forward Characteristics

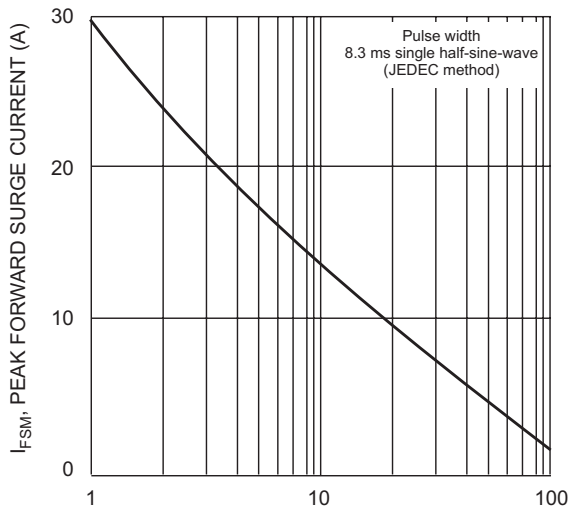


Fig. 3 Peak Forward Surge Current

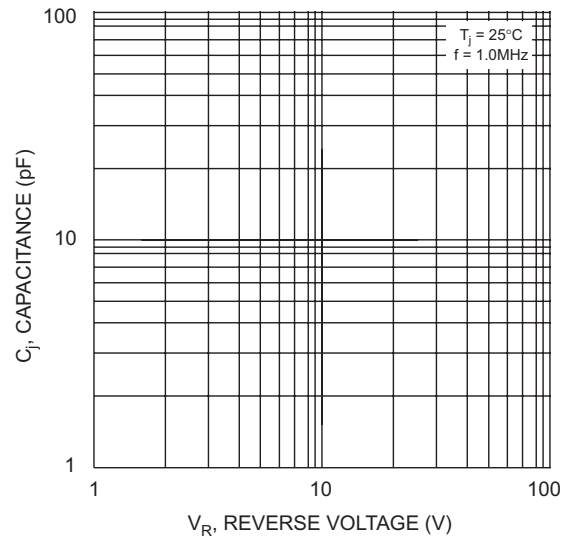
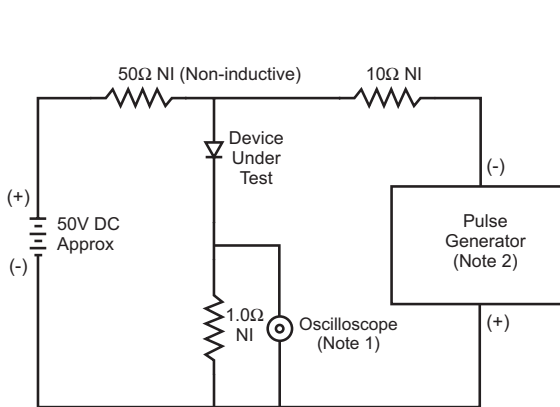
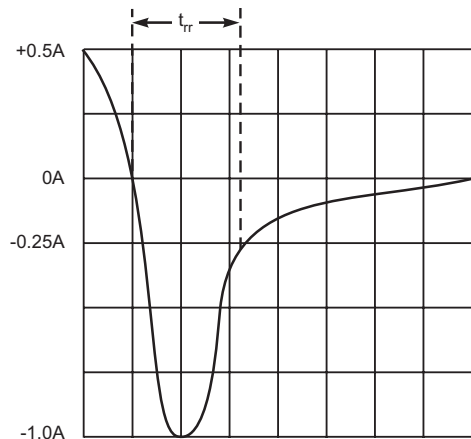


Fig. 4 Typical Junction Capacitance



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



Set time base for 5/10ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit