

SUPER-FAST RECTIFIER

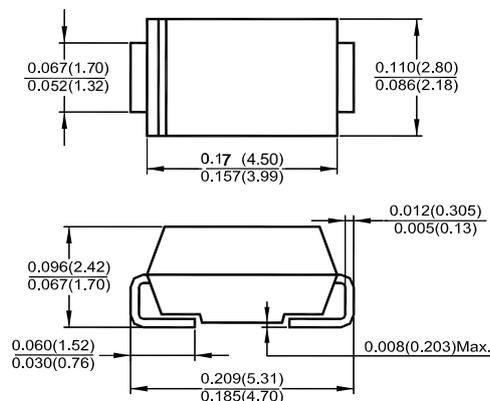
FEATURES

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 50A Peak
- Ideally Suited for Automated 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
- SMA Weight: 0.064 grams (approx.)
- SMB Weight: 0.093 grams (approx.)
- Mounting Position: Any
- Marking: Type Number

ES2A --- ES2D



Dimensions in inches and (millimeters)
DO-214AC (SMA)

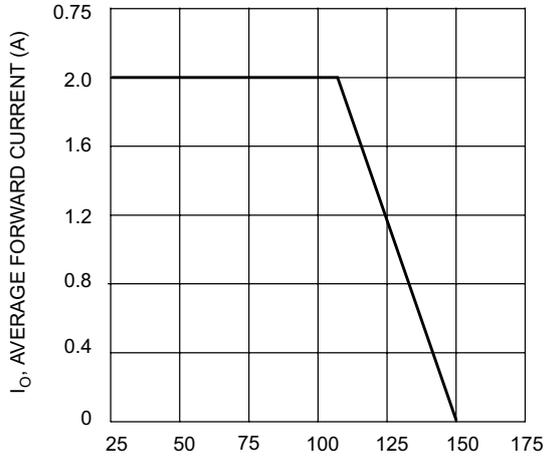
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

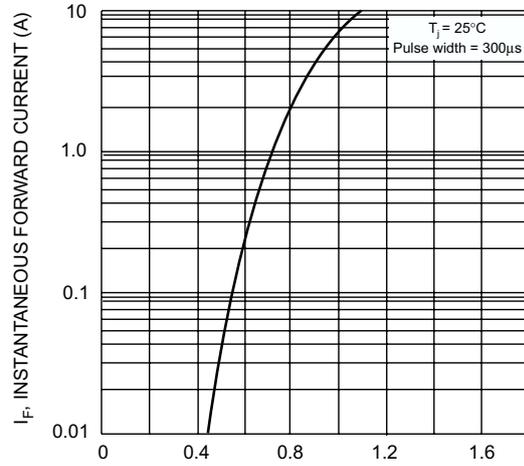
| Characteristic | Symbol | ES2A | ES2B | ES2C | ES2D | Unit |
|--|-----------------|-------------|------|------|------|--------------------|
| Peak Repetitive Reverse Voltage | V_{RRM} | 50 | 100 | 150 | 200 | V |
| Working Peak Reverse Voltage | V_{RWM} | | | | | |
| DC Blocking Voltage | V_R | | | | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 105 | 140 | V |
| Average Rectified Output Current @ $T_T = 110^\circ\text{C}$ | I_O | 2.0 | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method) | I_{FSM} | 50 | | | | A |
| Forward Voltage @ $I_F = 2.0\text{A}$ | V_{FM} | 0.92 | | | | V |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$ at Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$ | I_{RM} | 5.0 350 | | | | μA |
| Reverse Recovery Time (Note 3) | t_{rr} | 25 | | | | ns |
| Typical Junction Capacitance (Note 2) | C_j | 25 | | | | pF |
| Typical Thermal Resistance, Junction to Terminal (Note 1) | $R_{\theta JT}$ | 20 | | | | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_j, T_{STG} | -55 to +150 | | | | $^\circ\text{C}$ |

- Notes:
1. Unit mounted on PC board with 5.0 mm² (0.013 mm thick) copper pads as heat sink.
 2. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
 3. Measured with $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{rr} = 0.25\text{A}$. See Figure 5.

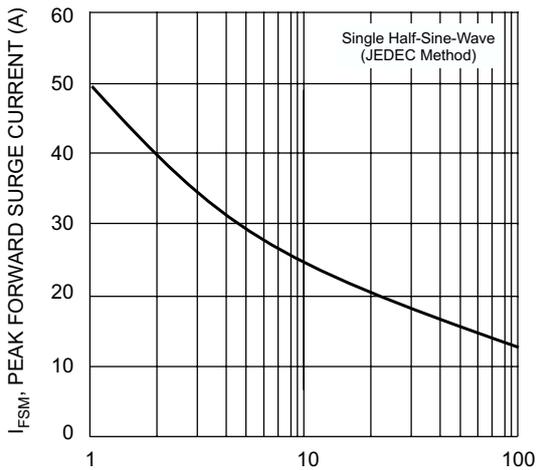
ES2A --- ES2D Typical Characteristics



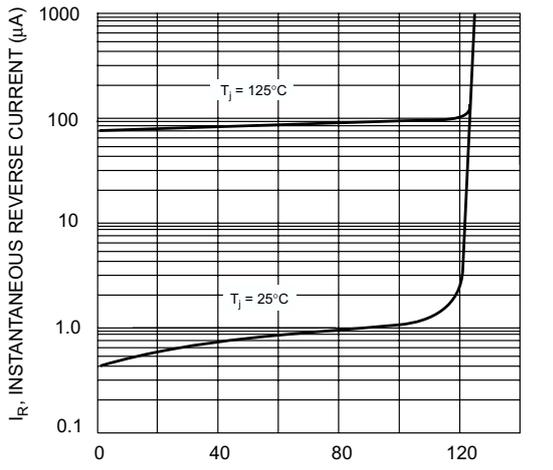
T_T , TERMINAL TEMPERATURE (°C)
Fig. 1 Forward Current Derating Curve



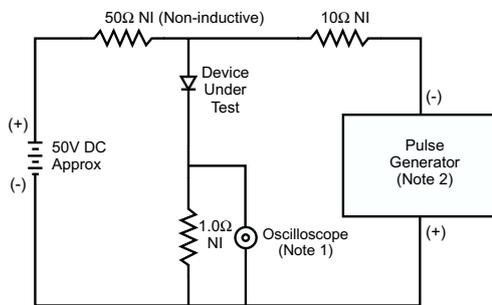
V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics



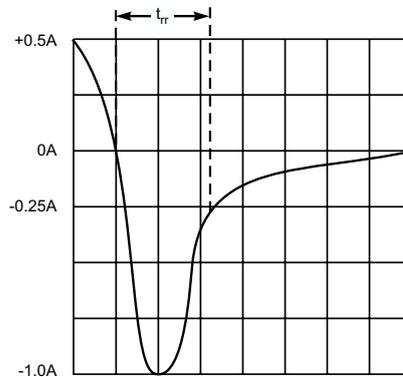
NUMBER OF CYCLES AT 60Hz
Fig. 3 Surge Current Derating Curve



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