



ES3AB THRU ES3JB

SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 3.0 Ampere

FEATURES

- The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- For surface mounted applications
- Super fast switching for high efficiency
- Low reverse leakage
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed:
250°C/10 seconds at terminals

MECHANICAL DATA

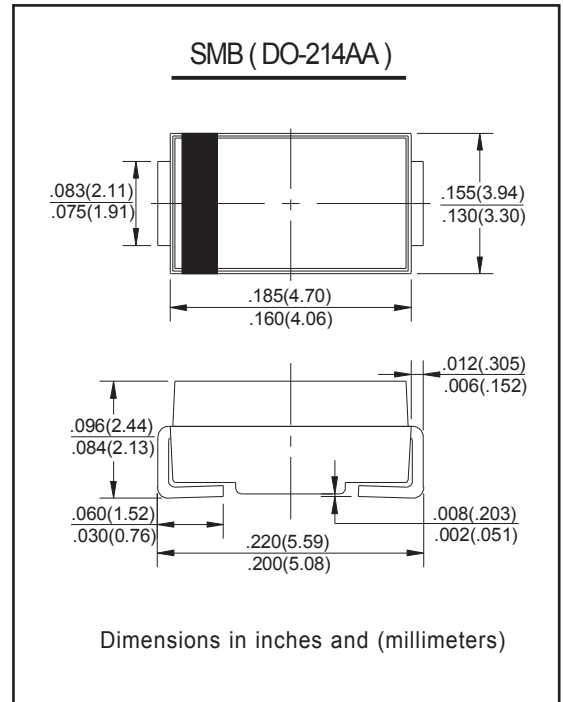
Case: JEDEC DO-214AA molded plastic body

Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: Color band denotes cathode end

Mounting Position: Any

Weight: 0.005 ounce, 0.138 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

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

| Characteristic | Symbol | ES3AB | ES3BB | ES3CB | ES3DB | ES3EB | ES3GB | ES3JB | Unit | |
|---|----------------|-------------|-------|-------|-------|-------|-------|-------|------------------|---|
| Peak Repetitive Reverse Voltage | V_{RRM} | | | | | | | | V | |
| Working Peak Reverse Voltage | V_{RWM} | 50 | 100 | 150 | 200 | 300 | 400 | 600 | | |
| DC Blocking Voltage | V_R | | | | | | | | | |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 105 | 140 | 210 | 280 | 420 | V | |
| Average Rectified Output Current @ $T_C = 100^\circ\text{C}$ | I_o | 3.0 | | | | | | | | A |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | | | | | 100 | | | A | |
| Forward Voltage @ $I_F = 3.0\text{A}$ | V_{FM} | 0.95 | | | 1.3 | | 1.7 | | V | |
| Peak Reverse Current @ $T_A = 25^\circ\text{C}$ At Rated DC Blocking Voltage @ $T_A = 125^\circ\text{C}$ | I_{RM} | | | | | 10 | | | μA | |
| | | | | | | 500 | | | | |
| Reverse Recovery Time (Note 1) | t_{rr} | | | | | 35 | | | nS | |
| Typical Junction Capacitance (Note 2) | C_j | | | | | 45 | | | pF | |
| Operating and Storage Temperature Range | T_j, T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ | |

Note: 1. Measured with $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $IRR = 0.25\text{A}$.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0V D.C.



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RATINGS AND CHARACTERISTIC CURVES

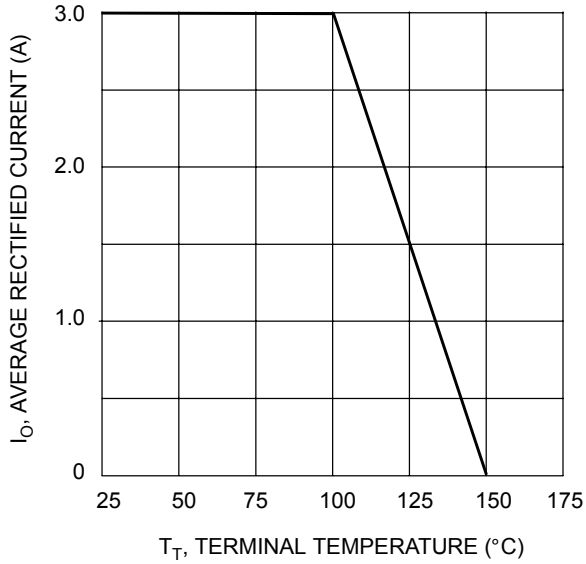


Fig. 1 Forward Current Derating Curve

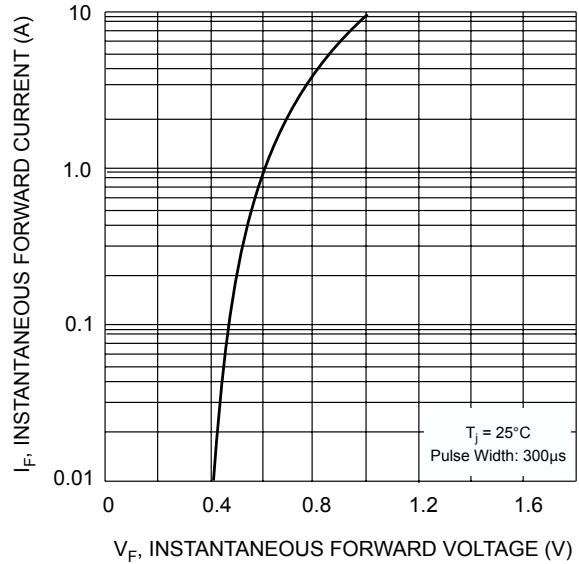


Fig. 2 Typical Forward Characteristics

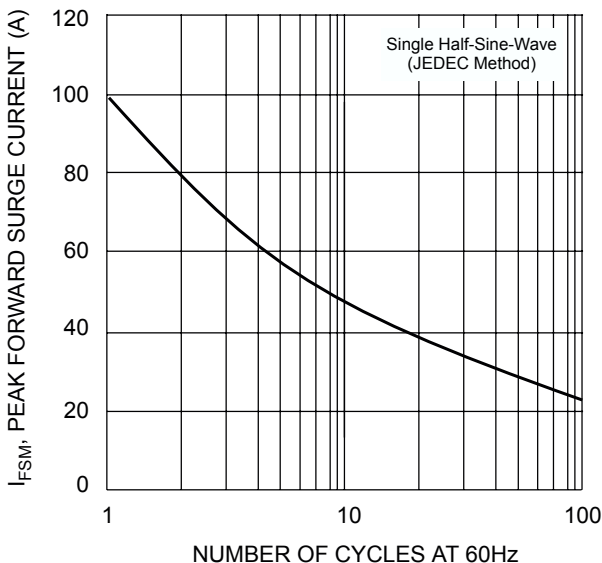


Fig. 3 Surge Current Derating Curve

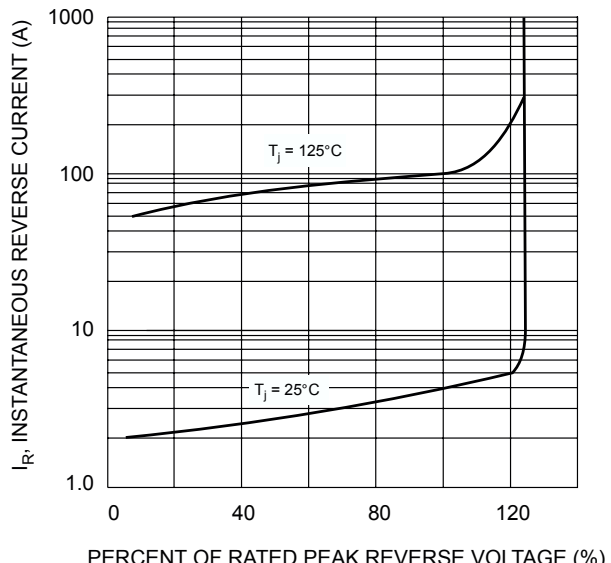
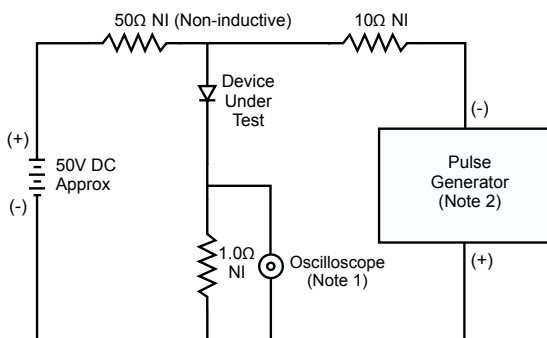


Fig. 4 Typical Reverse Characteristics



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

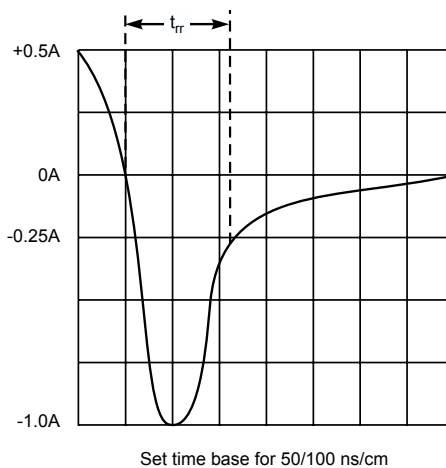


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit