



# ES3A THRU ES3J

## SURFACE MOUNT SUPER FAST RECTIFIER

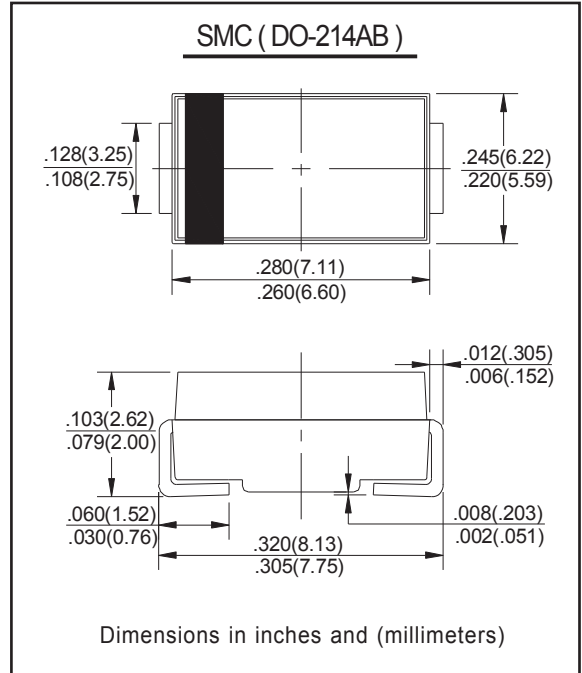
Reverse Voltage - 50 to 600 Volts      Forward Current - 3.0 Ampere

### 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-214AB molded plastic body  
**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.007 ounce, 0.24grams



### 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         | ES3A        | ES3B | ES3C | ES3D | ES3E | ES3G | ES3J | Unit |                  |
|---|----------------|-------------|------|------|------|------|------|------|------|------------------|
| Peak Repetitive Reverse Voltage   | $V_{RRM}$      |             |      |      |      |      |      |      |      |                  |
| Working Peak Reverse Voltage  | $V_{RWM}$      | 50          | 100  | 150  | 200  | 300  | 400  | 600  | V    |                  |
| DC Blocking Voltage   | $V_R$          |             |      |      |      |      |      |      |      |                  |
| RMS Reverse Voltage   | $V_{R(RMS)}$   | 35          | 70   | 105  | 140  | 210  | 280  | 420  | V    |                  |
| Average Rectified Output Current<br>@ $T_C = 100^\circ\text{C}$   | $I_o$          | 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<br>@ $I_F = 3.0\text{A}$  | $V_{FM}$       | 0.95        |      |      |      | 1.3  |      | 1.7  | V    |                  |
| Peak Reverse Current<br>@ $T_A = 25^\circ\text{C}$<br>At Rated DC Blocking Voltage<br>@ $T_A = 125^\circ\text{C}$ | $I_{RM}$       | 10<br>500   |      |      |      |      |      |      |      | $\mu\text{A}$    |
| 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

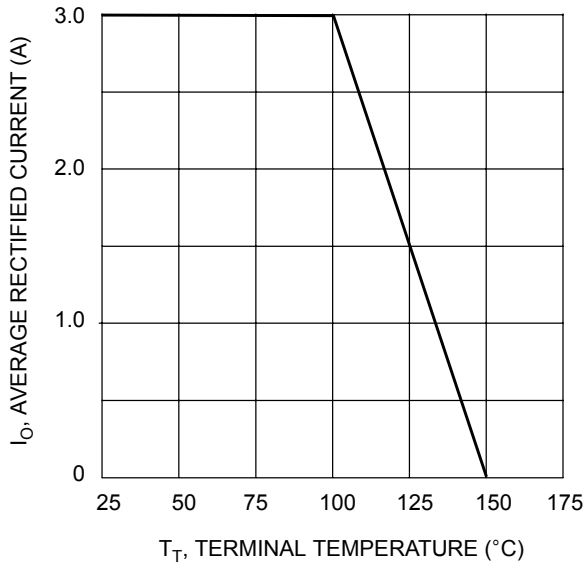


Fig. 1 Forward Current Derating Curve

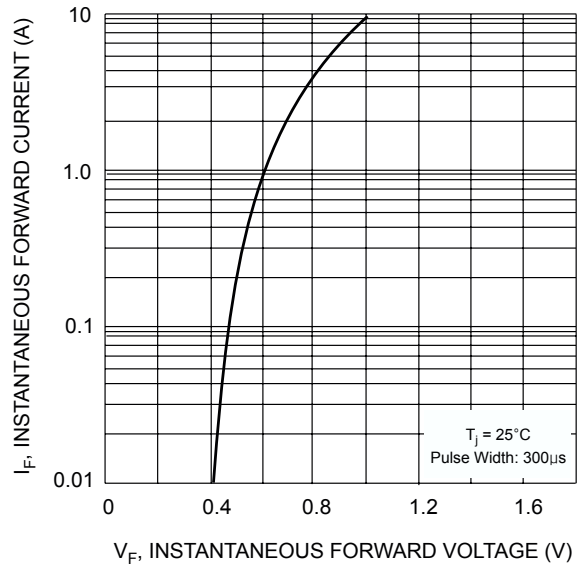


Fig. 2 Typical Forward Characteristics

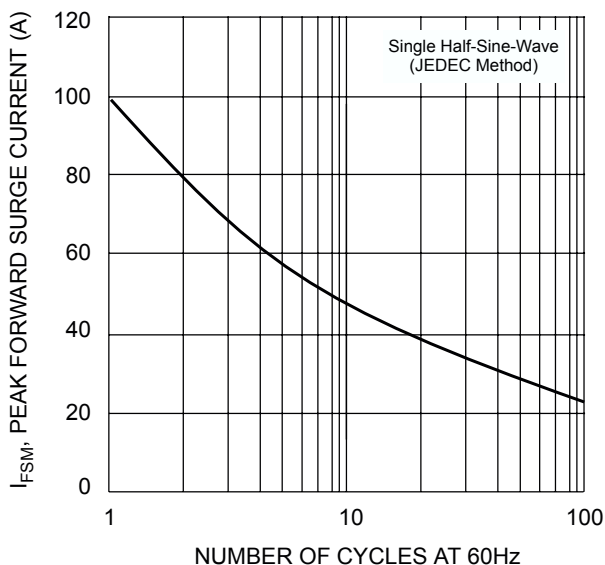


Fig. 3 Surge Current Derating Curve

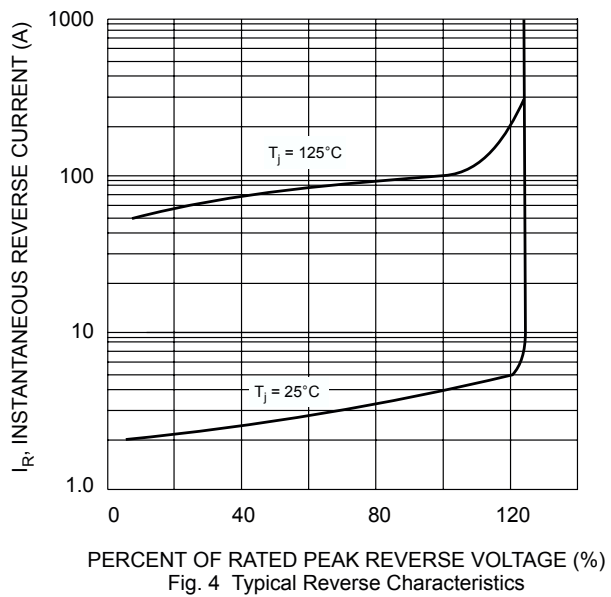
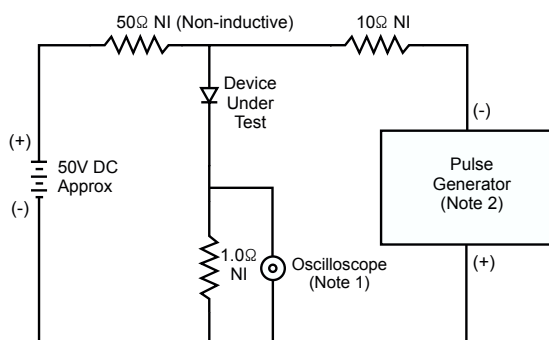


Fig. 4 Typical Reverse Characteristics



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

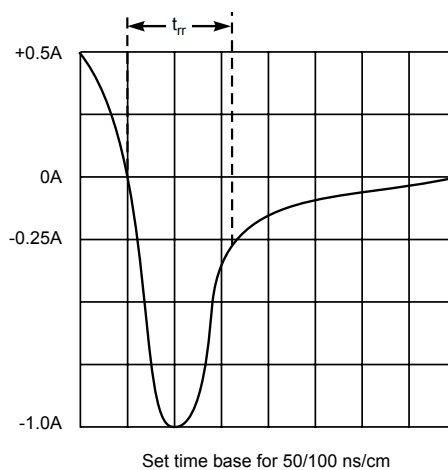


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit