

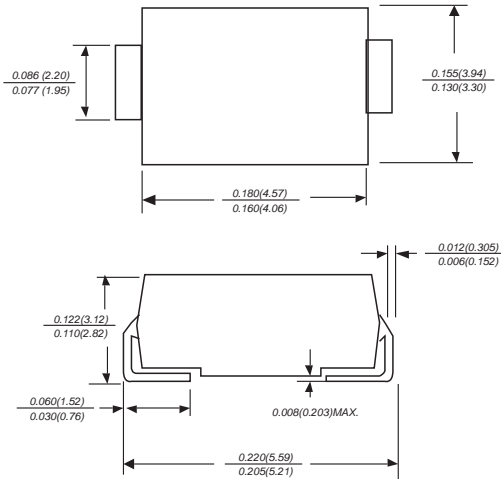


# ER1A THRU ER1J

## SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 1.0 Ampere

### DO-214AA



Dimensions in inches and (millimeters)

### 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%.

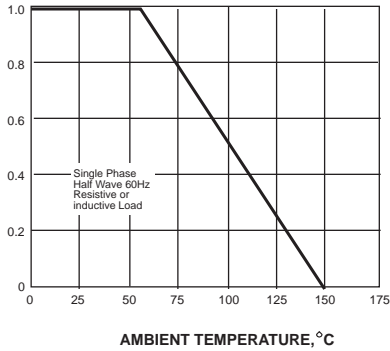
|   | SYMBOLS        | ER1A        | ER1B | ER1C | ER1D | ER1E | ER1G | ER1J | UNITS                     |
|---|----------------|-------------|------|------|------|------|------|------|---------------------------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$      | 50          | 100  | 150  | 200  | 300  | 400  | 600  | VOLTS                     |
| Maximum RMS voltage   | $V_{RMS}$      | 35          | 70   | 105  | 140  | 210  | 280  | 420  | VOLTS                     |
| Maximum DC blocking voltage   | $V_{DC}$       | 50          | 100  | 150  | 200  | 300  | 400  | 600  | VOLTS                     |
| Maximum average forward rectified current at $T_L=55^\circ\text{C}$                                       | $I_{(AV)}$     | 1.0         |      |      |      |      |      |      | Amp                       |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method)       | $I_{FSM}$      | 30.0        |      |      |      |      |      |      | Amps                      |
| Maximum instantaneous forward voltage at 1.0A   | $V_F$          | 0.95        |      |      |      | 1.25 |      |      | Volts                     |
| Maximum DC reverse current $T_A=25^\circ\text{C}$<br>at rated DC blocking voltage $T_A=100^\circ\text{C}$ | $I_R$          | 5.0<br>50.0 |      |      |      |      |      |      | $\mu\text{A}$             |
| Maximum reverse recovery time (NOTE 1)  | $t_{rr}$       | 35          |      |      |      |      |      |      | ns                        |
| Typical junction capacitance (NOTE 2)   | $C_J$          | 15.0        |      |      |      |      |      |      | pF                        |
| Typical thermal resistance (NOTE 3)   | $R_{qJA}$      | 60.0        |      |      |      |      |      |      | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range  | $T_J, T_{STG}$ | -65 to +150 |      |      |      |      |      |      | $^\circ\text{C}$          |

- Note:**
1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$
  2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
  3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

# RATINGS AND CHARACTERISTIC CURVES ER1A THRU ER1J

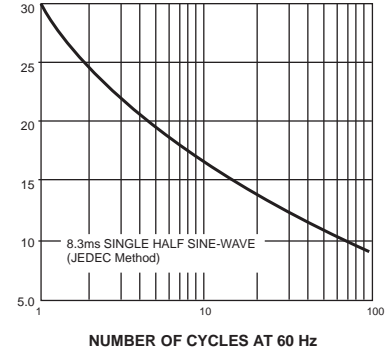
AVERAGE FORWARD RECTIFIED CURRENT, AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



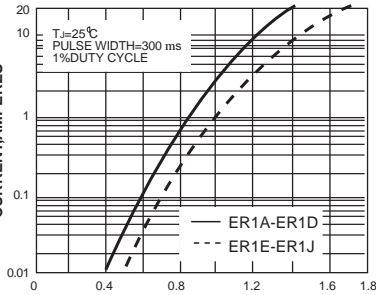
PEAK FORWARD SURGE CURRENT, AMPERES

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



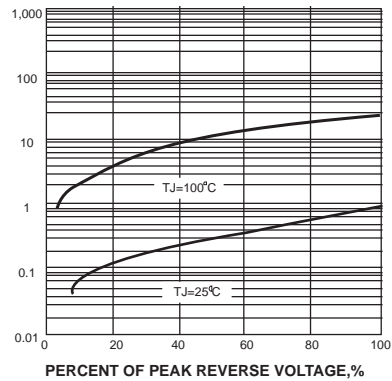
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



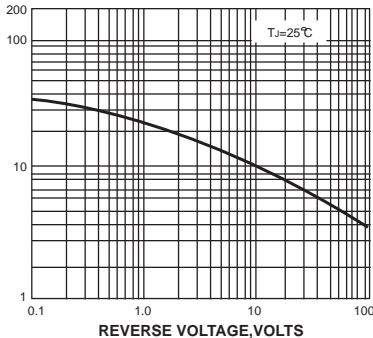
INSTANTANEOUS REVERSE CURRENT, MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE, °C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

