

ES1A

THRU

ES1J

## SUPER FAST RECOVERY GLASS PASSIVATED RECTIFIER

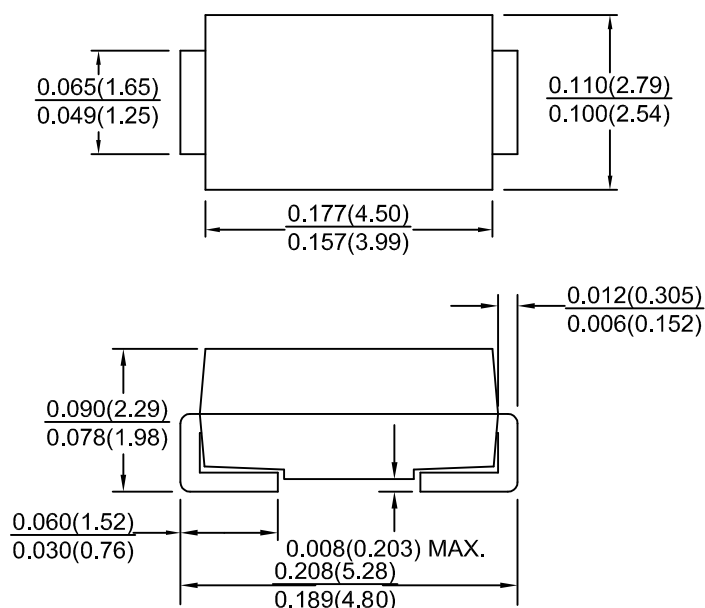
## FEATURES:

- 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:  
50°C/10 seconds at terminals

## MECHANICAL DATA

**Case:** JEDEC DO-214AC 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

SMA/DO-214AC



Dimensions in inches and (millimeters)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25° C ambient temp. unless otherwise specified.

Single phase, half sine wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20 %.

| Characteristic                                                                                         | SYMBOLS                                                         | ES1A        | ES1B | ES1C | ES1D | ES1E | ES1G | ES1J | UNITS |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|-------------|------|------|------|------|------|------|-------|
| Maximum repetitive peak reverse voltage                                                                | V <sub>RRM</sub>                                                | 50          | 100  | 150  | 200  | 300  | 400  | 600  | VOLTS |
| Maximum RMS voltage                                                                                    | V <sub>RMS</sub>                                                | 35          | 70   | 105  | 140  | 210  | 280  | 420  | VOLTS |
| Maximum DC blocking voltage                                                                            | V <sub>DC</sub>                                                 | 50          | 100  | 150  | 200  | 300  | 400  | 600  | VOLTS |
| Maximum average forward rectified current<br>at T <sub>L</sub> =55°C                                   | I <sub>(AV)</sub>                                               | 1.0         |      |      |      |      |      |      | Amp   |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load (JEDEC Method) | I <sub>FSM</sub>                                                | 30.0        |      |      |      |      |      |      | Amps  |
| Maximum instantaneous forward voltage at 1.0A                                                          | V <sub>F</sub>                                                  | 0.95        |      |      |      | 1.25 |      | 1.70 | Volts |
| Maximum DC reverse current<br>at rated DC blocking voltage                                             | T <sub>A</sub> =25°C<br>I <sub>R</sub><br>T <sub>A</sub> =100°C | 5.0<br>50.0 |      |      |      |      |      |      | uA    |
| Maximum reverse recovery time (NOTE 1)                                                                 | t <sub>rr</sub>                                                 | 35          |      |      |      |      |      |      | ns    |
| Typical junction capacitance (NOTE 2)                                                                  | C <sub>J</sub>                                                  | 15.0        |      |      |      |      |      |      | pF    |
| Typical thermal resistance (NOTE 3)                                                                    | R <sub>qJA</sub>                                                | 60.0        |      |      |      |      |      |      | °C/W  |
| Operating junction and storage temperature range                                                       | T <sub>J</sub> , T <sub>STG</sub>                               | -65 to +150 |      |      |      |      |      |      | °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 ES1A THRU ES1J

FIG. 1- FORWARD CURRENT DERATING CURVE

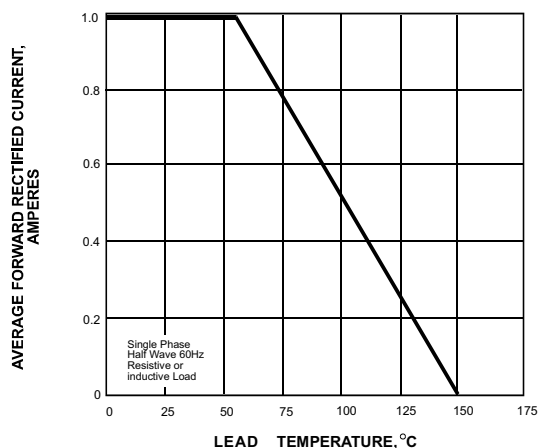


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

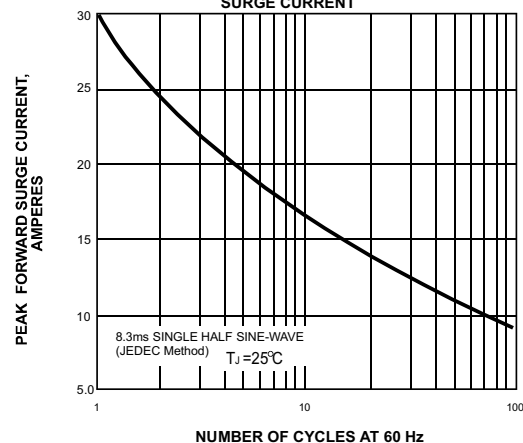


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

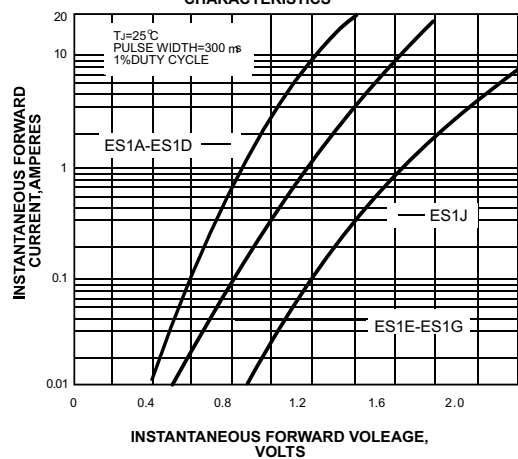


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

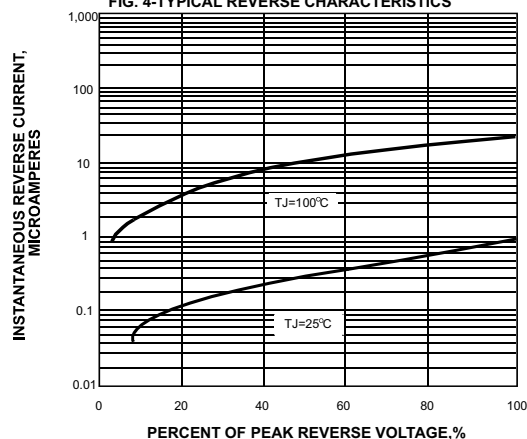


FIG. 5-TYPICAL JUNCTION CAPACITANCE

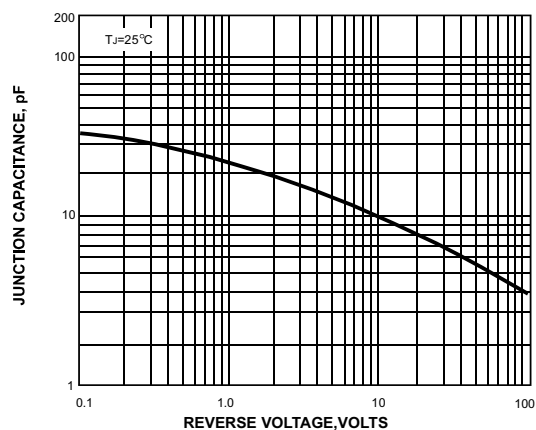


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

