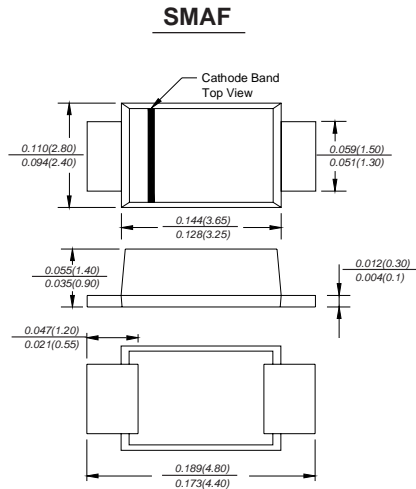


# ES2AAF THRU ES2JAF

## SURFACE MOUNT SUPER FAST RECTIFIER

Reverse Voltage - 50 to 600 Volts Forward Current - 2.0 Amperes



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: 260°C/10 seconds at terminals
- ◆ Glass passivated chip junction

### MECHANICAL DATA

**Case:** JEDEC SMAF molded plastic body over passivated chip

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

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.0014 ounce, 0.038 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         | ES2AAF      | ES2BAF | ES2CAF | ES2DAF | ES2EAF | ES2GAF | ES2JAF | 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 $T_L=55^\circ\text{C}$                                       | $I_{(AV)}$      | 2.0         |        |        |        |        |        |        | Amps                      |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load (JEDEC Method)       | $I_{FSM}$       | 50.0        |        |        |        |        |        |        | Amps                      |
| Maximum instantaneous forward voltage at 2.0A   | $V_F$           | 0.95        |        |        | 1.25   |        | 1.7    |        | 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)   | $C_J$           | 60.0        |        |        |        |        |        |        | pF                        |
| Typical thermal resistance (NOTE 3)   | $R_{\theta JA}$ | 95.0        |        |        |        |        |        |        | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range  | $T_J, T_{STG}$  | -55 to +150 |        |        |        |        |        |        | $^\circ\text{C}$          |

**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$

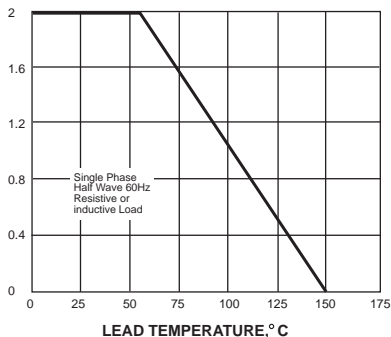
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

## RATINGS AND CHARACTERISTIC CURVES ES2AAF THRU ES2JAF

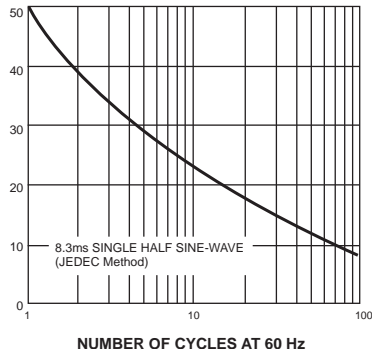
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



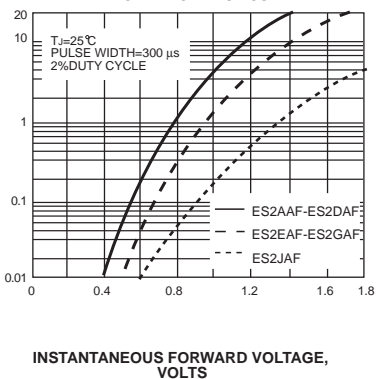
PEAK FORWARD SURGE CURRENT,  
AMPERES

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



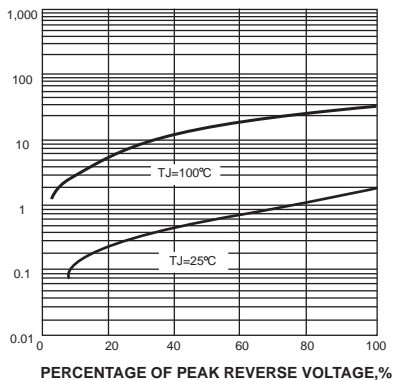
INSTANTANEOUS FORWARD CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



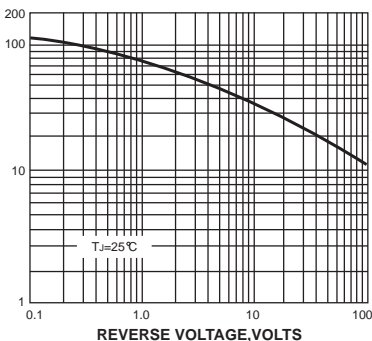
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

