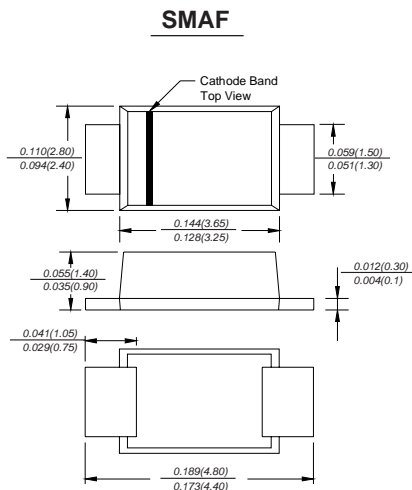


## ES1AAF THRU ES1JAF

### SURFACE MOUNT SUPER FAST RECTIFIER

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



*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:** 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	ES1AAF	ES1BAF	ES1CAF	ES1DAF	ES1EAF	ES1GAF	ES1JAF	UNITS
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	150	200	300	400	600	V
Maximum RMS voltage	V <sub>RMS</sub>	35	70	105	140	210	280	420	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	150	200	300	400	600	V
Maximum average forward rectified current at T <sub>L</sub> =110°C	I <sub>(AV)</sub>	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30.0							A
Maximum instantaneous forward voltage at 1.0A	V <sub>F</sub>	0.95				1.25		1.7	V
Maximum DC reverse current      T <sub>A</sub> =25°C at rated DC blocking voltage      T <sub>A</sub> =125°C	I <sub>R</sub>	5.0 50.0							μA
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>θJA</sub>	88.0							°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150							°C

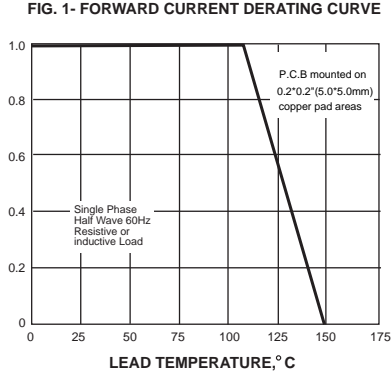
**Note:** 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$

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

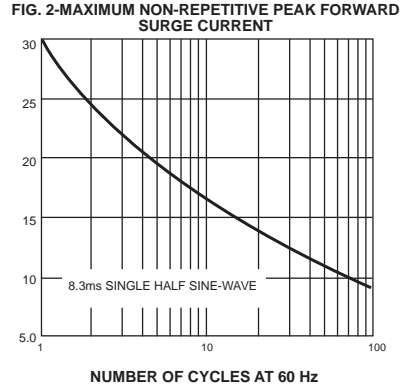
3. P.C.B. mounted with 0.2x0.2" (5.0x5.0mm) copper pad areas

## RATINGS AND CHARACTERISTIC CURVES ES1AAF THRU ES1JAF

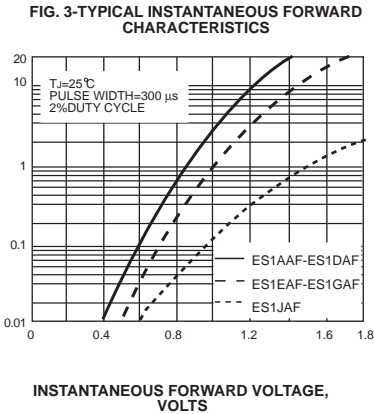
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES



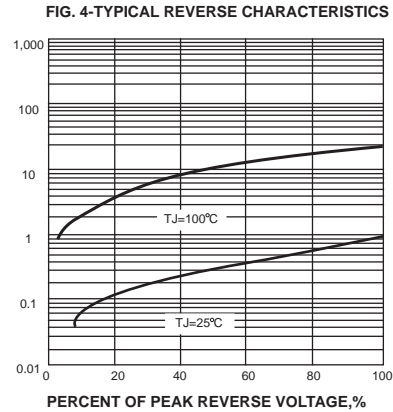
PEAK FORWARD SURGE CURRENT,  
AMPERES



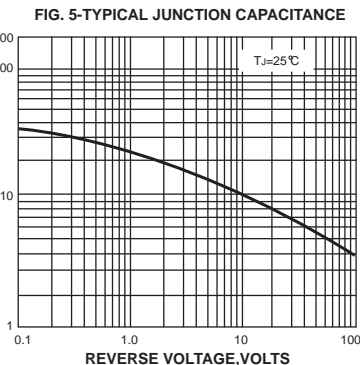
INSTANTANEOUS FORWARD  
CURRENT,AMPERES



INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES



JUNCTION CAPACITANCE, pF



TRANSIENT THERMAL IMPEDANCE,  
°C/W

