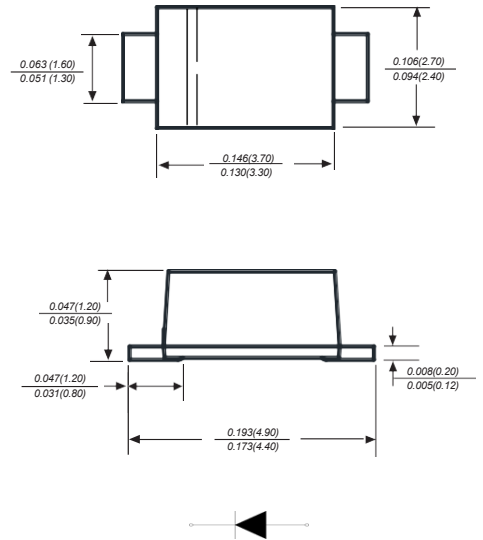


## SURFACE MOUNT SUPER FAST RECOVERY RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ 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

### SMAF



Dimensions in inches and (millimeters)

### 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%.

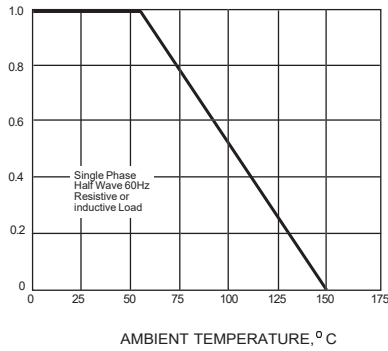
| Parameter                                                                                              | SYMBOLS                           | ES1AF       | ES1BF | ES1CF | ES1DF | ES1EF | ES1GF | ES1JF | UNITS |
|--------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|-------|-------|-------|-------|-------|-------|-------|
| Marking Code                                                                                           |                                   |             |       |       |       |       |       |       |       |
| 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 TL=55°C                                                   | I <sub(av)< sub=""></sub(av)<>    | 1.0         |       |       |       |       |       |       | A     |
| Peak forward surge current<br>8.3ms single half sine-wave<br>superimposed on rated load (JEDEC Method) | I <sub>FSM</sub>                  | 30          |       |       |       |       |       |       | A     |
| Maximum instantaneous forward voltage at 1.0A                                                          | V <sub>F</sub>                    | 0.95        |       |       |       | 1.25  |       | 1.70  | V     |
| Maximum DC reverse current      TA=25°C<br>at rated DC blocking voltage      TA=125°C                  | I <sub>R</sub>                    | 5.0<br>50   |       |       |       |       |       |       | 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>θJA</sub>                  | 60.0        |       |       |       |       |       |       | °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  $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$   
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

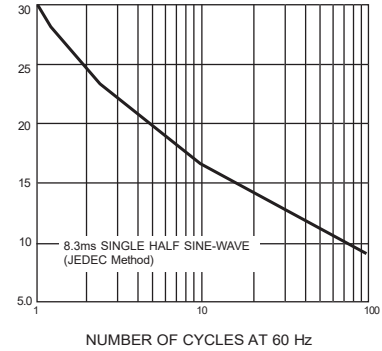
AVERAGE FORWARD RECTIFIED CURRENT,  
AMPERES

FIG. 1- FORWARD CURRENT DERATING CURVE



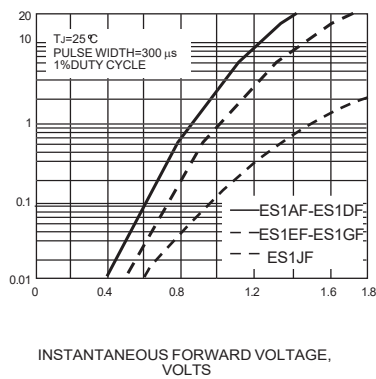
PEAK FORWARD SURGE CURRENT,  
AMPERES

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



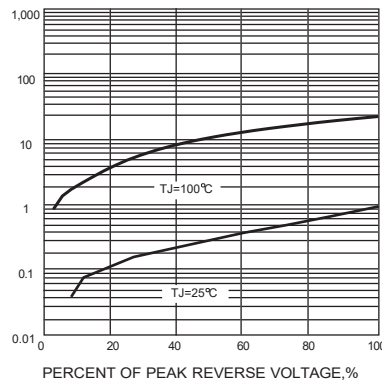
INSTANTANEOUS FORWARD  
CURRENT, AMPERES

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



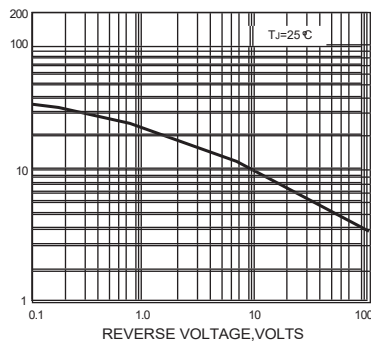
INSTANTANEOUS REVERSE CURRENT,  
MICROAMPERES

FIG. 4-TYPICAL REVERSE CHARACTERISTICS



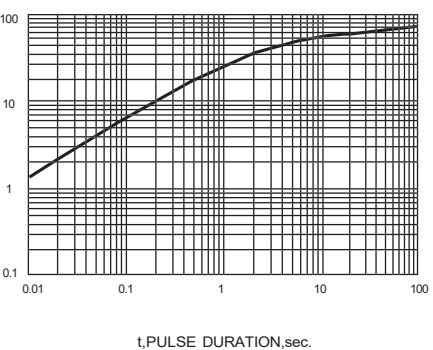
JUNCTION CAPACITANCE, pF

FIG. 5-TYPICAL JUNCTION CAPACITANCE



TRANSIENT THERMAL IMPEDANCE,  
°C/W

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



The curve above is for reference only.