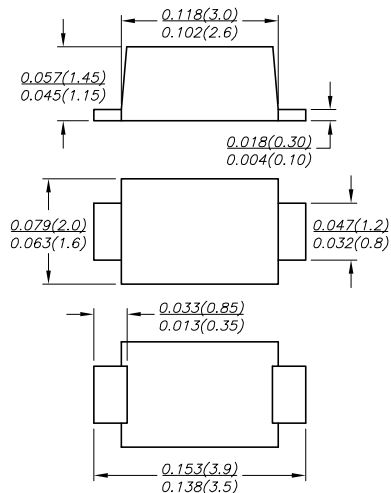


# ES1AL THRU ES1JL

## SURFACE MOUNT SUPER FAST RECTIFIER

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

### SOD-123FL



Dimensions in inches and (millimeters)

### FEATURES

- ◆ Glass passivated device
- ◆ Ideal for surface mounted applications
- ◆ Low reverse leakage
- ◆ Metallurgically bonded construction
- ◆ High temperature soldering guaranteed:  
260°C/10 seconds, 0.375"(9.5mm) lead length,  
5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case:** SOD-123FL molded plastic body over passivated chip  
**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026  
**Polarity:** Color band denotes cathode end  
**Mounting Position:** Any  
**Weight:** 0.0007 ounce, 0.02 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                          | ES1AL<br>EA  | ES1BL<br>EB | ES1CL<br>EC | ES1DL<br>ED | ES1EL<br>EE | ES1GL<br>EG | ES1JL<br>EJ | 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                                                                   | I <sub>(AV)</sub>                | 1.0          |             |             |             |             |             |             | A     |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on<br>rated load                     | I <sub>FSM</sub>                 | 25.0         |             |             |             |             |             |             | A     |
| Maximum instantaneous forward voltage at1.0A                                                                | V <sub>F</sub>                   | 0.95         |             |             |             | 1.25        |             | 1.7         | V     |
| Maximum DC reverse current    T <sub>A</sub> =25°C<br>at rated DC blocking voltage    T <sub>A</sub> =100°C | I <sub>R</sub>                   | 5.0<br>100.0 |             |             |             |             |             |             | μA    |
| Maximum reverse recovery time (NOTE 1)                                                                      | t <sub>rr</sub>                  | 35           |             |             |             |             |             |             | ns    |
| Typical junction capacitance (NOTE 2)                                                                       | C <sub>J</sub>                   | 10           |             |             |             |             |             |             | pF    |
| Typical thermal resistance (NOTE 3)                                                                         | R <sub>θJA</sub>                 | 95           |             |             |             |             |             |             | °C/W  |
| Operating junction and storage temperature range                                                            | T <sub>J</sub> ,T <sub>STG</sub> | -55 to +150  |             |             |             |             |             |             | °C    |

**Note:** 1. Measured with  $I_F=0.5A$ ,  $I_R=1A$ ,  $I_{rr}=0.25A$ .  
2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
3. PCB mounted on 0.2\*0.2" (5.0\*5.0mm) copper pad area.

# RATINGS AND CHARACTERISTIC CURVES ES1AL THRU ES1JL

FIG. 1- FORWARD CURRENT DERATING CURVE

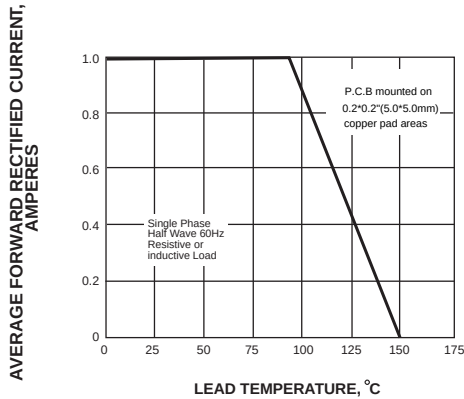


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

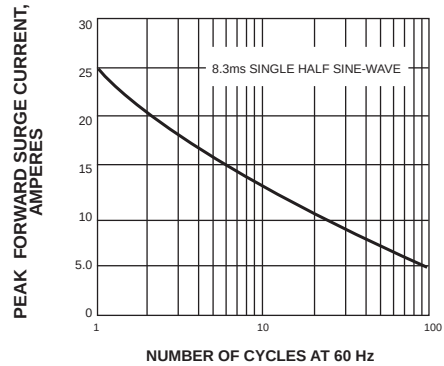


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

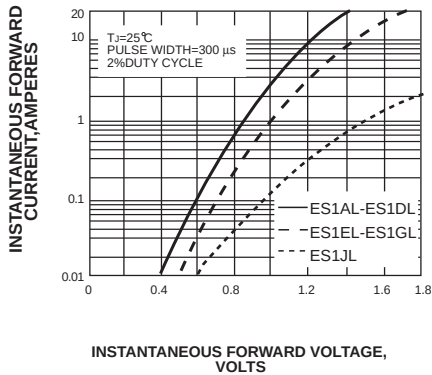


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

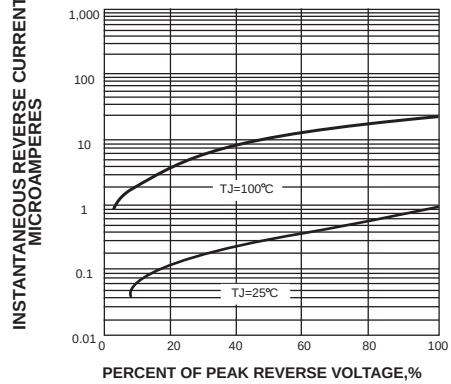


FIG. 5-TYPICAL JUNCTION CAPACITANCE

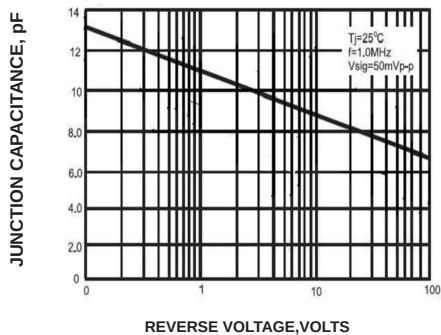


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE

