

### Features

- Super Low Forward Voltage Drop
- High Current Capability, High Efficiency
- High Junction Temperature Capability
- Low Leakage Current
- RoHs Product

### Applications

- Surface mount schottky barrier rectifier
- Buck and Boost dc-dc Converters
- Low Voltage High Frequency Switching Power Supply
- Low Voltage High Frequency Invers Circuit
- Low Voltage Continued Circuit and Protection Circuit



### Absolute Maximum Ratings

| PARAMETER                                                         | SYMBOL | UNIT  | VALUE      |
|-------------------------------------------------------------------|--------|-------|------------|
| Maximum repetitive peak reverse voltage                           | VRRM   | V     | 20         |
| Maximum RMS voltage                                               | VRMS   | V     | 14         |
| Maximum DC blocking voltage                                       | VDC    | V     | 20         |
| Maximum average forward rectified current                         | IF(AV) | A     | 1          |
| Non-repetitive Peak Forward Surge Current @t=8.3ms Half-sine wave | IFSM   | A     | 12         |
| Junction Temperature                                              | Tj     | °C    | -65 ~ +125 |
| Storage temperature range                                         | TSTG   | °C    | -65 ~ +125 |
| Typical thermal resistance                                        | RθJA   | °C /W | 85         |

Part mounted on FR-4 board with 1.8mm X 2.5mm copper pads. TA = 25°C.

### Electrical Characteristics (TA=25°C unless otherwise specified)

| Parameter         | Symbol | Test Condition     | Min | Typ  | Max  | Unit |
|-------------------|--------|--------------------|-----|------|------|------|
| Reverse current   | IR     | VR=20V             | --  | --   | 1    | mA   |
|                   |        | VR=5V              | --  | 0.26 | --   | mA   |
| Forward voltage   | VF     | IF=0.1A            | --  | 0.20 | --   | V    |
|                   |        | IF=0.7A            | --  | 0.30 | --   | V    |
|                   |        | IF=1A              | --  | 0.32 | 0.36 | V    |
| Total Capacitance | CT     | VR = 0V, f = 1 MHz | --  | 75   | --   | pF   |

## Typical Electrical Characteristic Curves

Fig. 1 - Typical Instantaneous Forward Characteristics

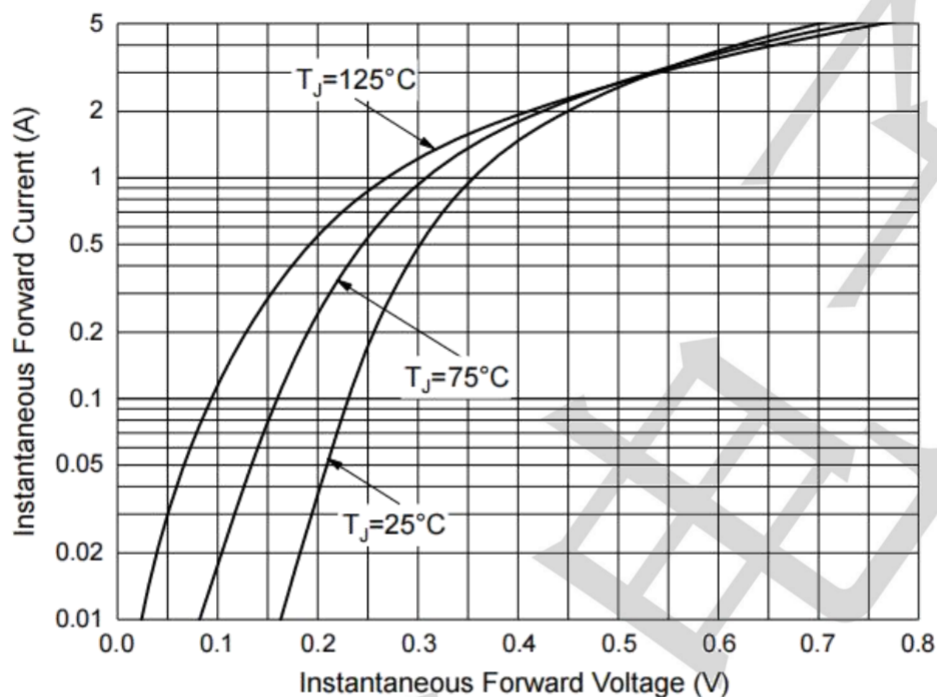
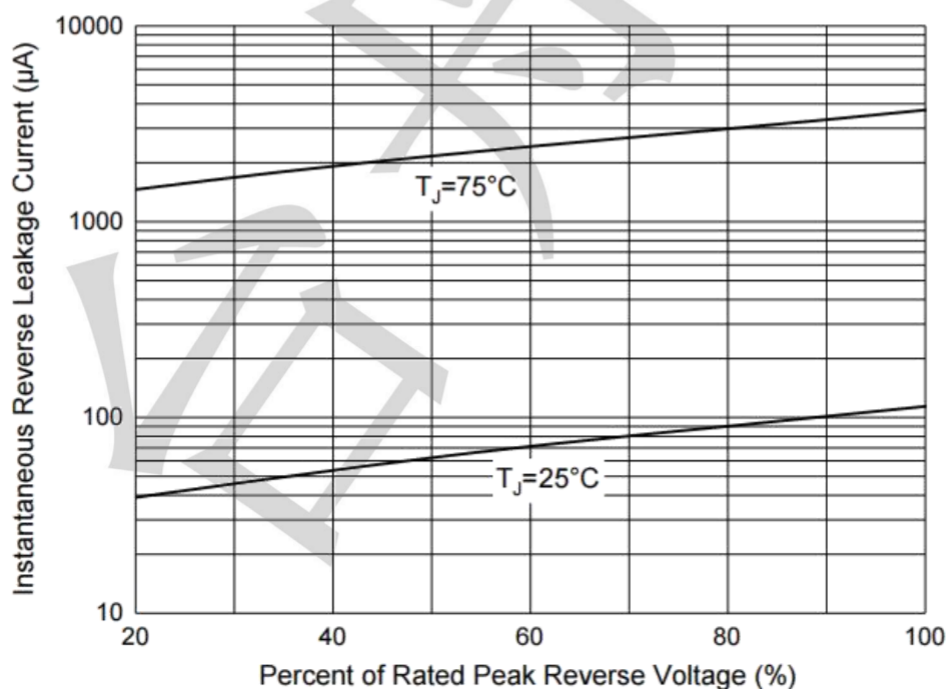
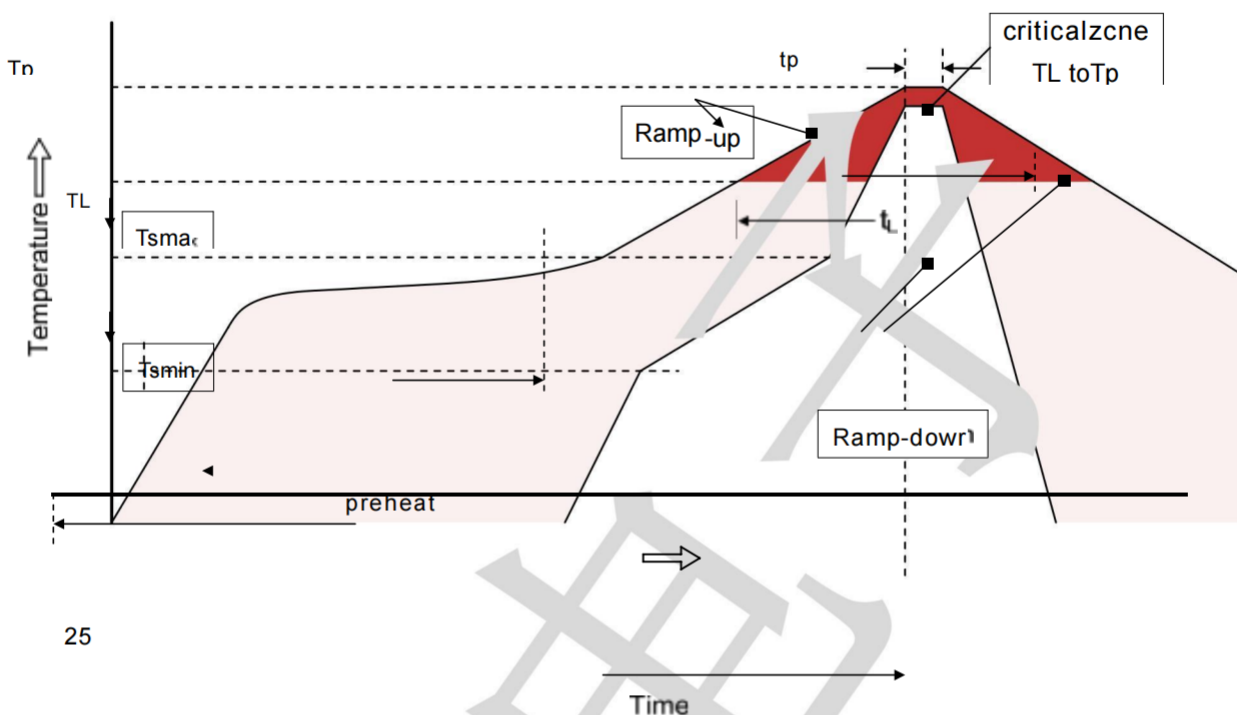


Fig. 2 - Typical Reverse Leakage Characteristics



**Recommended Soldering Conditions**

**Reflow Soldering**

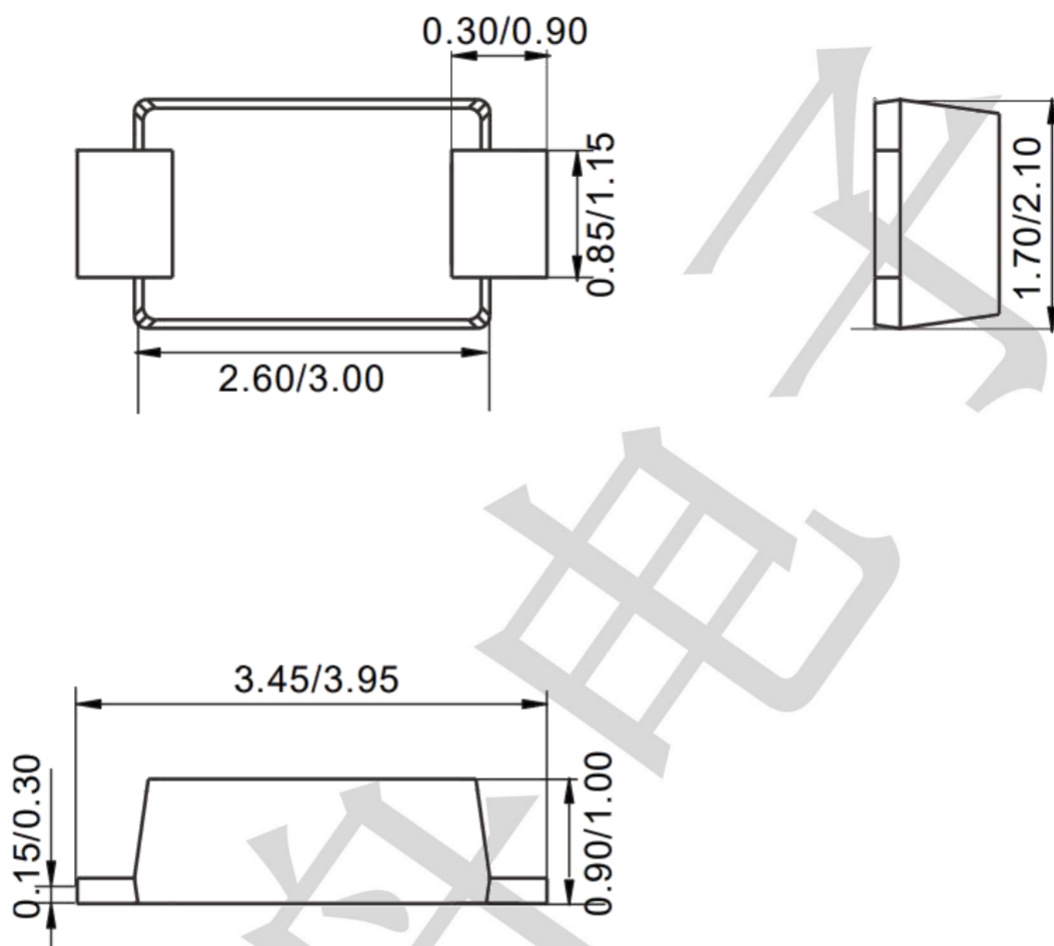


**Recommended Conditions**

| Profile Feature                                      | Pb-Free Assembly |
|------------------------------------------------------|------------------|
| Average ramp-up rate ( $T_L$ to $T_P$ )              | 3°C/second max.  |
| Preheat                                              |                  |
| -Temperature Min ( $T_{Smin}$ )                      | 150°C            |
| -Temperature Max ( $T_{Smax}$ )                      | 200°C            |
| -Time (min to max) ( $t_s$ )                         | 60-180 seconds   |
| $T_{Smax}$ to $T_L$                                  |                  |
| -Ramp-up Rate                                        | 3°C/second max.  |
| Time maintained above:                               |                  |
| -Temperature ( $T_L$ )                               | 217°C            |
| -Time ( $t_L$ )                                      | 60-150 seconds   |
| Peak Temperature ( $T_P$ )                           | 260°C            |
| Time within 5°C of actual Peak Temperature ( $t_p$ ) | 20-40 seconds    |
| Ramp-down Rate                                       | 6°C/second max.  |
| Time 25°C to Peak Temperature                        | 8 minutes max.   |

**Package Outline Dimensions (unit: mm)**

SOD-123FL



**Mounting Pad Layout (unit: mm)**

