

**Fast Recovery Surface Mount Rectifiers**

**Reverse Voltage: 50 to 1000V**

**Forward Current: 1.0 Amp**

**Features**

- Low profile package
- For surface mounted applications
- Glass passivated chip junction
- High forward surge capability
- Fast reverse recovery time
- High temperature soldering guaranteed  
260℃/10 seconds at terminals

**Mechanical Data**

- **Package:** SOD-123FL  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per MIL-STD-750, Method 2026
- **Polarity:** Cathode line denotes the cathode end

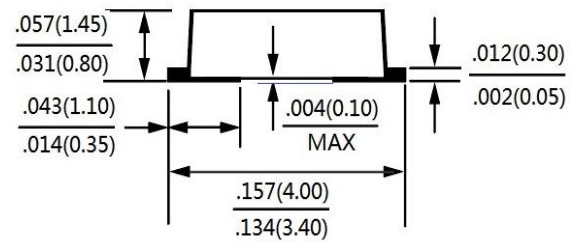
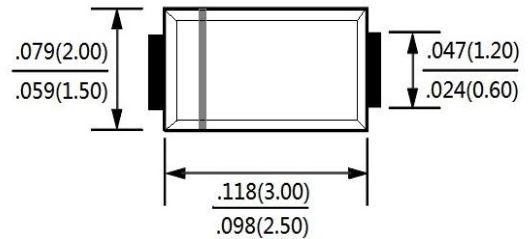
**Typical Applications**

For use in fast switching rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, and telecommunication.

**SOD-123FL**

ROHS  
COMPLIANT

HALOGEN  
FREE



Package Outline Dimensions in Inches (Millimeters)

**Maximum Ratings and Electrical Characteristics**

Rating at 25℃ ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter&Test Conditions                                                         | SYM.                              | F1          | F2  | F3  | F4  | F5  | F6  | F7   | Unit |
|-----------------------------------------------------------------------------------|-----------------------------------|-------------|-----|-----|-----|-----|-----|------|------|
| Device marking code                                                               |                                   | F1          | F2  | F3  | F4  | F5  | F6  | F7   |      |
| Maximum Recurrent Peak Reverse Voltage                                            | V <sub>RRM</sub>                  | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | V    |
| Maximum RMS Voltage                                                               | V <sub>RMS</sub>                  | 35          | 70  | 140 | 280 | 420 | 560 | 700  | V    |
| Maximum DC Blocking Voltage                                                       | V <sub>DC</sub>                   | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | V    |
| Average rectified output current @60Hz sine wave, Resistance load, TL (FIG.1)     | I <sub>O(AV)</sub>                | 1.0         |     |     |     |     |     |      | A    |
| Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed On Rated Load | I <sub>FSM</sub>                  | 30          |     |     |     |     |     |      | A    |
| Maximum Thermal Resistance, Junction To Ambient (Note 1)                          | R <sub>θJA</sub>                  | 150         |     |     |     |     |     |      | ℃/W  |
| Operating junction and storage temperature range                                  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 |     |     |     |     |     |      | ℃    |

**Electrical Characteristics** (Ta=25℃ Unless otherwise specified)

| Parameter&Test Conditions                               |           | SYM.            | F1  | F2 | F3 | F4 | F5  | F6  | F7 | Unit |
|---------------------------------------------------------|-----------|-----------------|-----|----|----|----|-----|-----|----|------|
| Maximum Instantaneous Forward Voltage IFM =1A           |           | V <sub>FM</sub> | 1.3 |    |    |    |     |     |    | V    |
| Maximum DC reverse current at rated DC blocking voltage | TA = 25℃  | I <sub>R</sub>  | 5   |    |    |    |     |     |    | μA   |
|                                                         | TA = 125℃ |                 | 200 |    |    |    |     |     |    |      |
| Maxinum reverse recovery time(Note 2)                   |           | T <sub>rr</sub> | 150 |    |    |    | 250 | 500 |    | ns   |
| Typical junction capacitance(Note 3)                    |           | C <sub>J</sub>  | 11  |    |    |    | 6   |     |    | pF   |

**Notes:**

1. Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 3mm\*3mm copper pad areas.
2. Reverse recovery time test condition: IF=0.5A IR=1.0A Irr=0.25A .
3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
4. The typical data above is for reference only.

## Rating and Characteristic Curves

FIG. 1- DERATING CURVE OUTPUT RECTIFIED

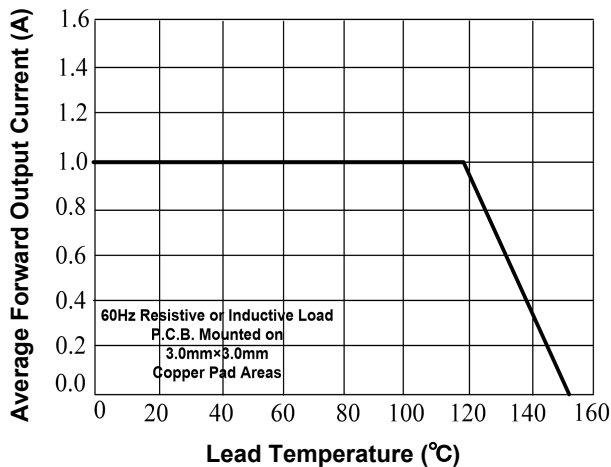


FIG. 2- -MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PERLEG

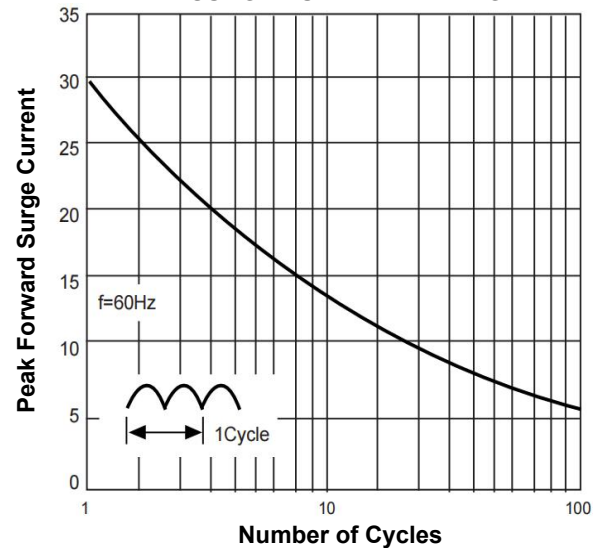


FIG. 3- TYPICAL FORWARD VOLTAGE

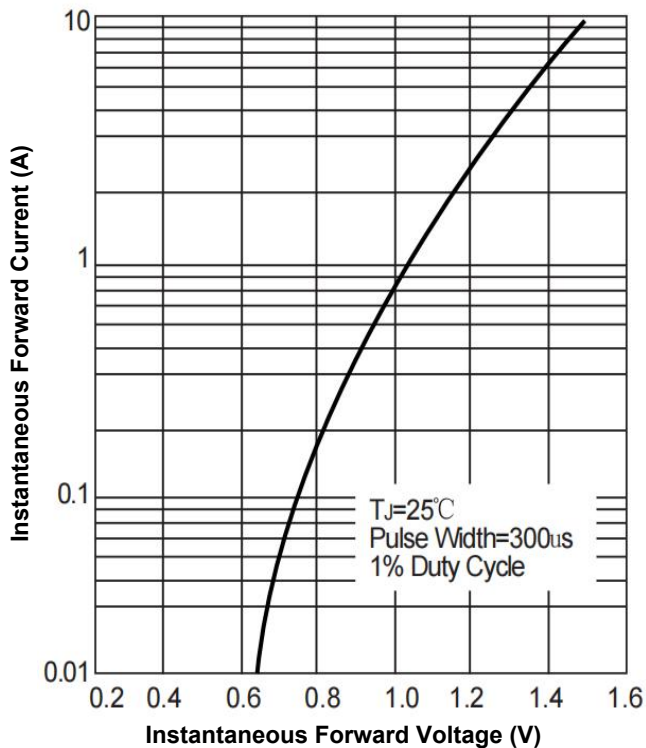


FIG. 4- TYPICAL REVERSE LEAKAGE

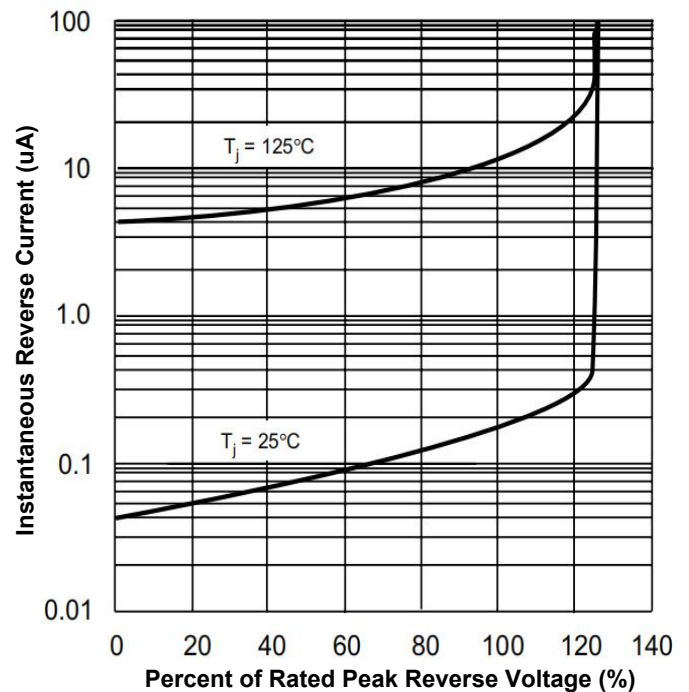
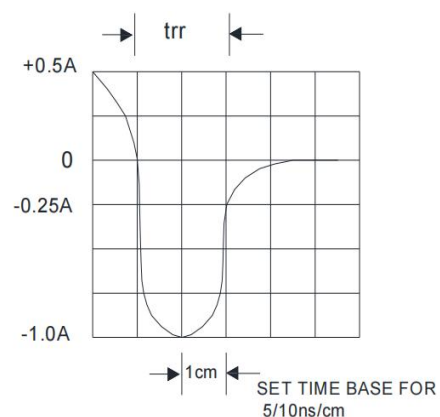
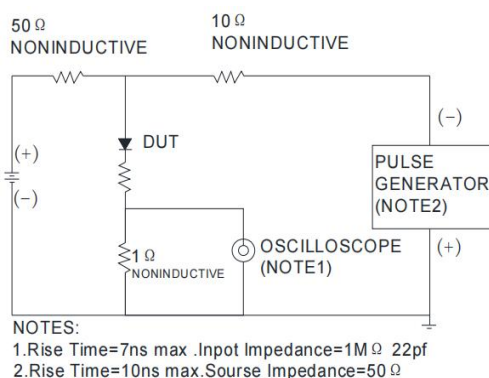
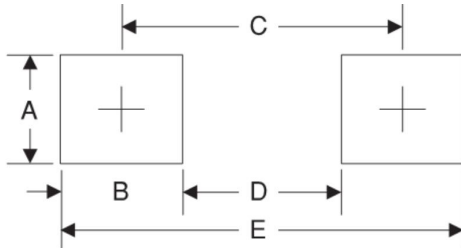


FIG. 5- Diagram of circuit and Testing wave form of reverse recovery



The curve above is for reference only.

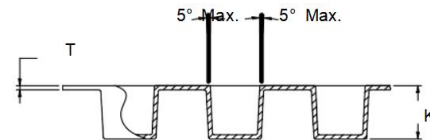
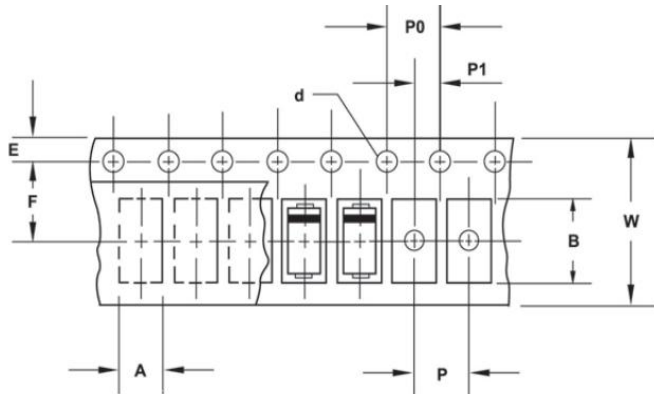
### Recommended Pad Layout



| SYMBOL | Millimeters |
|--------|-------------|
| A      | 1.50        |
| B      | 1.15        |
| C      | 3.10        |
| D      | 1.90        |
| E      | 4.25        |

### Package Information

#### Carrier Dimension(mm)



| W   | F   | d      | E         |
|-----|-----|--------|-----------|
| 8.0 | 3.5 | ∅ 1.55 | 1.75      |
| A   | B   | K      | T         |
| 2.2 | 3.9 | 1.37   | 0.22      |
| P0  | P1  | P      | Tolerance |
| 4.0 | 2.0 | 4.0    | 0.10      |

#### Package Specifications

| Package   | Reel Size | Reel DIA.<br>(mm) | Q'TY/Reel<br>(Kpcs) | Box Size<br>(mm) | QTY/Box<br>(Kpcs) | Carton Size<br>(mm) | Q'TY/Carton<br>(Kpcs) |
|-----------|-----------|-------------------|---------------------|------------------|-------------------|---------------------|-----------------------|
| SOD-123FL | 7'        | 178               | 3                   | 185              | 15                | 390*400*230         | 180                   |

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