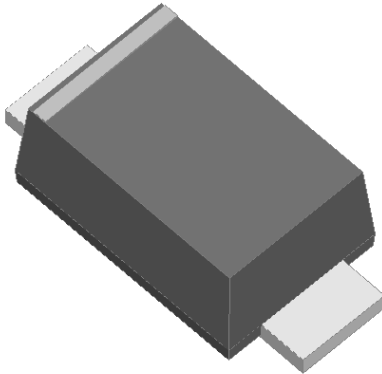




**EN:** This Datasheet/Document is presented by the manufacturer.

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## Surface Mount Fast Recovery Rectifier

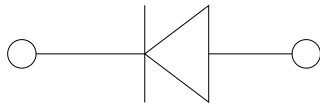


### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for fast recovery
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

### Typical Applications

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



### Mechanical Data

- **Package:** SOD-123FL  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Cathode line denotes the cathode end

### ■Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                                                    | SYMBOL           | UNIT | F1A       | F1B | F1D | F1G | F1J | F1K | F1M  |
|----------------------------------------------------------------------------------------------|------------------|------|-----------|-----|-----|-----|-----|-----|------|
| Device marking code                                                                          |                  |      | F1A       | F1B | F1D | F1G | F1J | F1K | F1M  |
| Repetitive peak reverse voltage                                                              | VRRM             | V    | 50        | 100 | 200 | 400 | 600 | 800 | 1000 |
| Average rectified output current<br>@60Hz sine wave, Resistance load, T <sub>a</sub> (FIG.1) | I <sub>O</sub>   | A    | 1.0       |     |     |     |     |     |      |
| Surge(non-repetitive)forward current<br>@ 60Hz half-sine wave,1 cycle, T <sub>j</sub> =25°C  | IFSM             | A    | 30        |     |     |     |     |     |      |
| Storage temperature                                                                          | T <sub>stg</sub> | °C   | -55 ~+150 |     |     |     |     |     |      |
| Junction temperature                                                                         | T <sub>j</sub>   | °C   | -55 ~+150 |     |     |     |     |     |      |

### ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER                                                         | SYMBOL           | UNIT | TEST CONDITIONS                                                    | F1A | F1B | F1D | F1G | F1J | F1K | F1M |
|-------------------------------------------------------------------|------------------|------|--------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|
| Maximum instantaneous forward voltage drop per diode              | V <sub>F</sub>   | V    | I <sub>FM</sub> =1.0A                                              | 1.3 |     |     |     |     |     |     |
| Maximum reverse recovery time                                     | t <sub>rr</sub>  | ns   | I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A | 150 |     |     |     | 250 | 500 |     |
| Maximum DC reverse current at rated DC blocking voltage per diode | I <sub>RRM</sub> | μA   | T <sub>a</sub> =25°C                                               | 5   |     |     |     |     |     |     |
|                                                                   |                  |      | T <sub>a</sub> =125°C                                              | 100 |     |     |     |     |     |     |



# F1A THRU F1M

## ■ Thermal Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

| PARAMETER          | SYMBOL            | UNIT | F1A               | F1B | F1D | F1G | F1J | F1K | F1M |
|--------------------|-------------------|------|-------------------|-----|-----|-----|-----|-----|-----|
| Thermal resistance | R <sub>θJ-A</sub> | °C/W | 68 <sup>(1)</sup> |     |     |     |     |     |     |
|                    | R <sub>θJ-L</sub> |      | 20 <sup>(1)</sup> |     |     |     |     |     |     |

Note:

(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm\*3mm.

## ■ Characteristics (Typical)

FIG1:I<sub>o</sub>-T<sub>L</sub> Curve

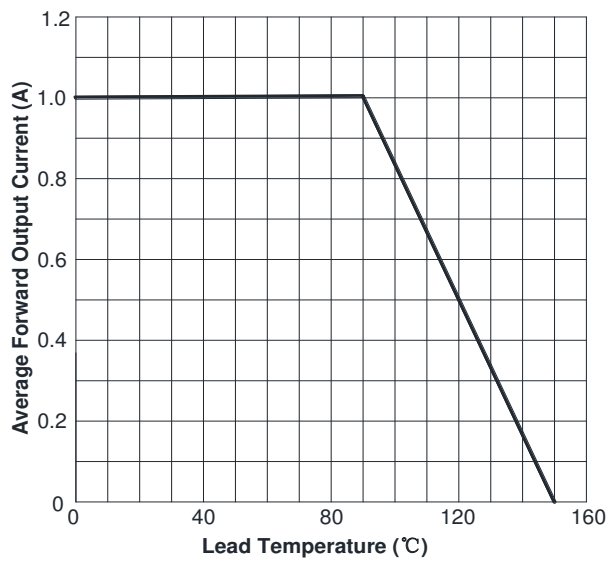


FIG2: Surge Forward Current Capability

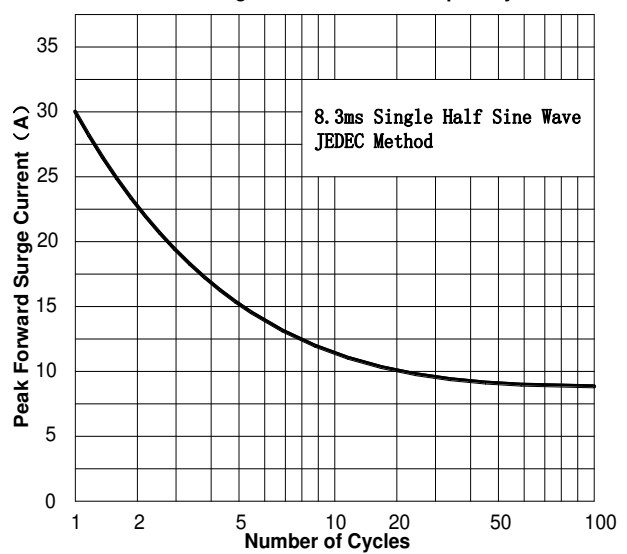


FIG3: Forward Voltage

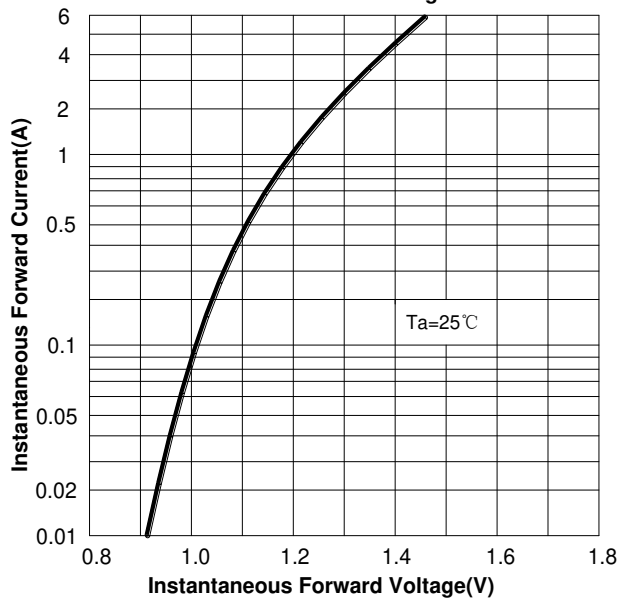


FIG4: Typical Reverse Characteristics

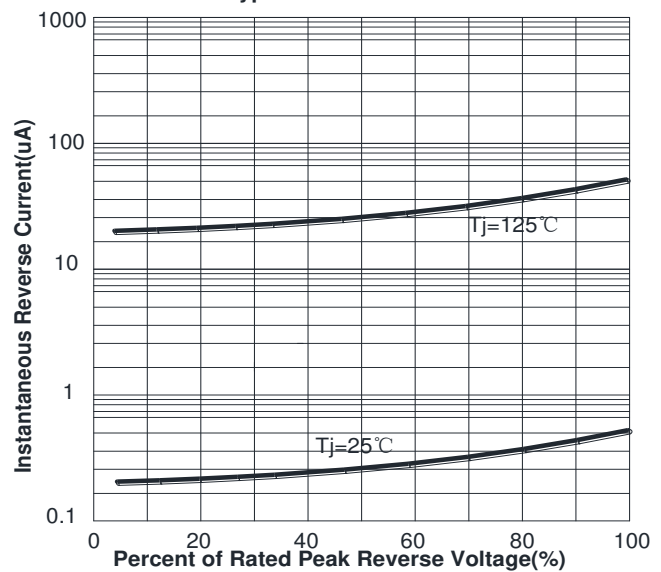
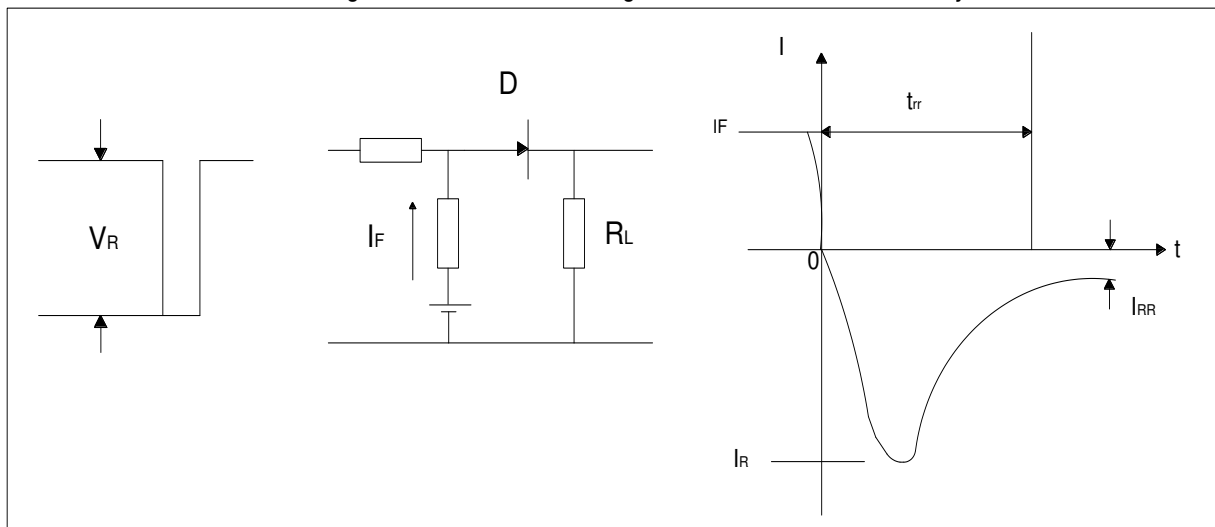


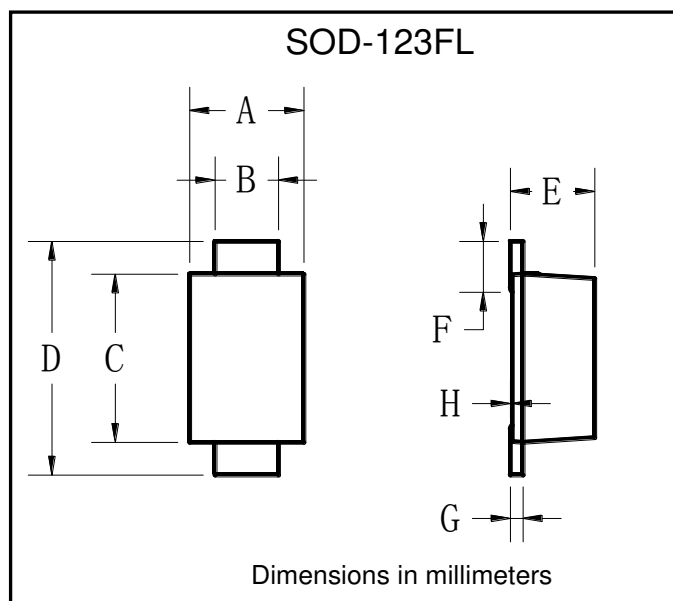
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■ Ordering Information (Example)

| PREFERRED P/N | PACKING CODE | UNIT WEIGHT(g)     | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|--------------|--------------------|----------------------|-------------------------|----------------------------|---------------|
| F1A THRU F1M  | F1           | Approximate 0.0169 | 3000                 | 15000                   | 120000                     | 7" reel       |
| F1A THRU F1M  | F2           | Approximate 0.0169 | 2500                 | 12500                   | 100000                     | 7" reel       |
| F1A THRU F1M  | F3           | Approximate 0.0169 | 10000                | 30000                   | 210000                     | 13" reel      |
| F1A THRU F1M  | F4           | Approximate 0.0169 | 3000                 | 27000                   | 108000                     | 7" reel       |
| F1A THRU F1M  | F5           | Approximate 0.0169 | 10000                | 20000                   | 160000                     | 13" reel      |
| F1A THRU F1M  | F6           | Approximate 0.0169 | 3000                 | 12000                   | 60000                      | 7" reel       |

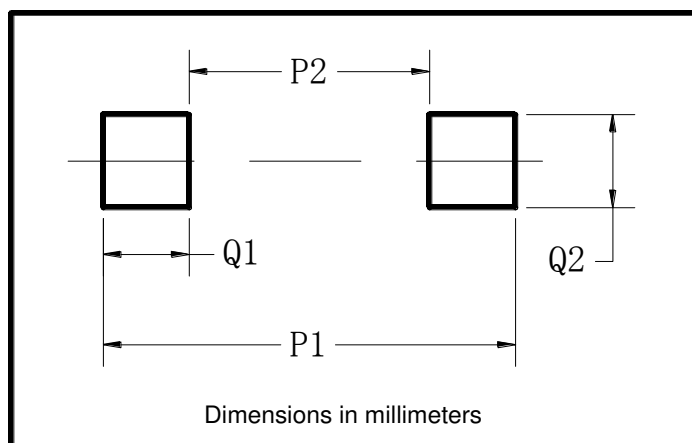
## ■ Outline Dimensions



| SOD-123FL |      |      |
|-----------|------|------|
| Dim       | Min  | Max  |
| A         | 1.60 | 1.90 |
| B         | 0.90 | 1.10 |
| C         | 2.55 | 2.85 |
| D         | 3.60 | 3.90 |
| E         | 1.00 | 1.20 |
| F         | 0.40 | 0.90 |
| G         | 0.10 | 0.25 |
| H         | 0.02 | 0.05 |



## ■ Suggested pad layout



| SOD-123FL |             |
|-----------|-------------|
| Dim       | Millimeters |
| P1        | 3.90        |
| P2        | 1.90        |
| Q1        | 1.00        |
| Q2        | 1.50        |



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