

SOD-123FL Surface Mount Fast Recovery Rectifier

Features

- Low profile package
- Ideal for automated placement
- Glass passivated pallet chip junction
- Fast reverse recovery time
- Fast switching for high efficiency
- High forward surge capability

Applications

For use in fast switching rectification of power supplies,inverters, converters, and free wheeling diodes forconsumer, and telecommunication.

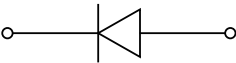
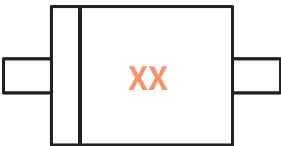
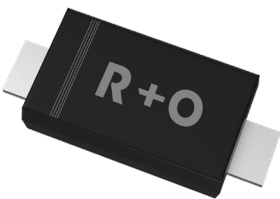
Mechanical Data

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

Function Diagram

Reverse Voltage  
50-1000 V  
Forward Current  
1 Ampere

SOD-123FL



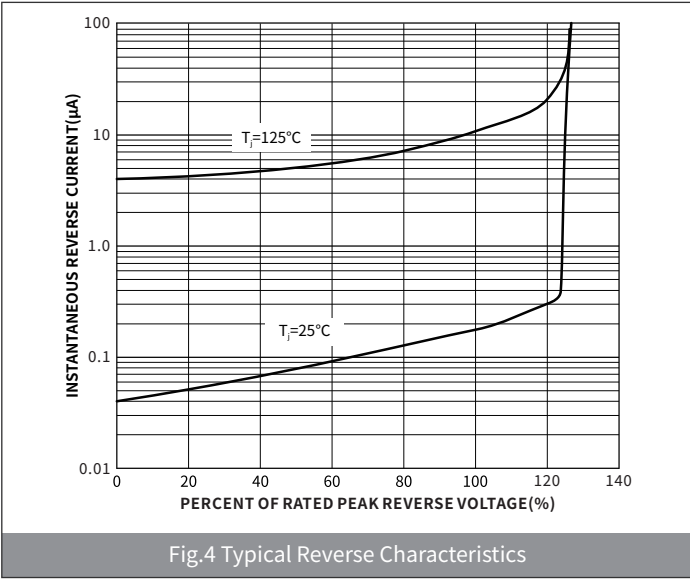
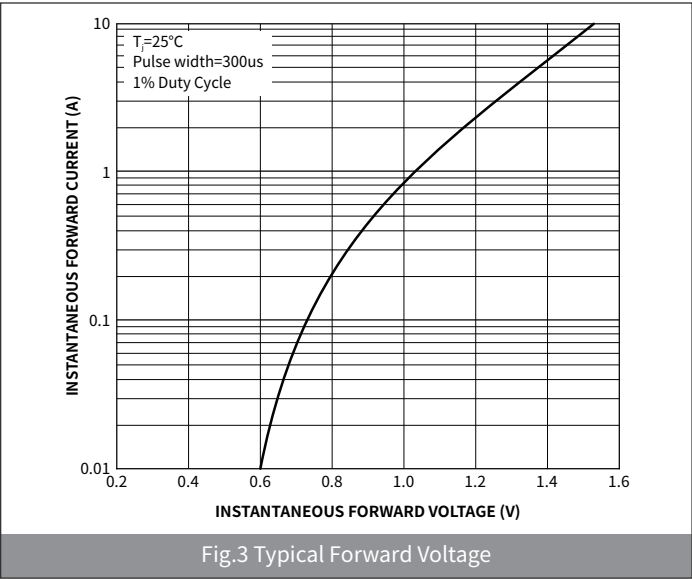
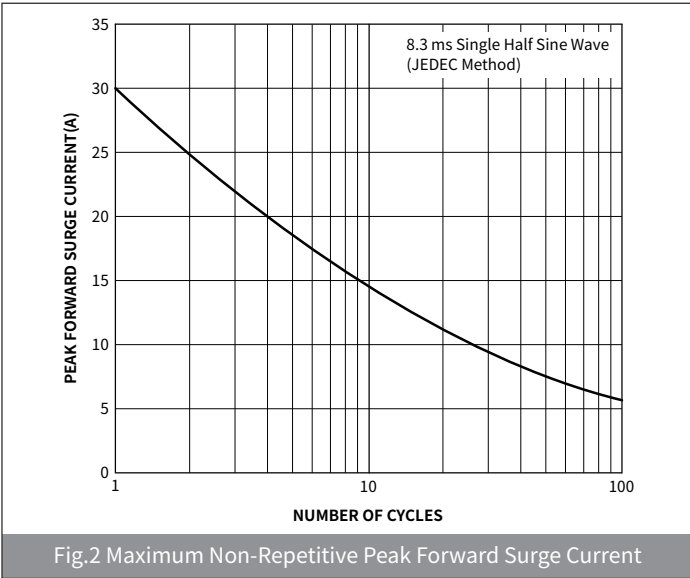
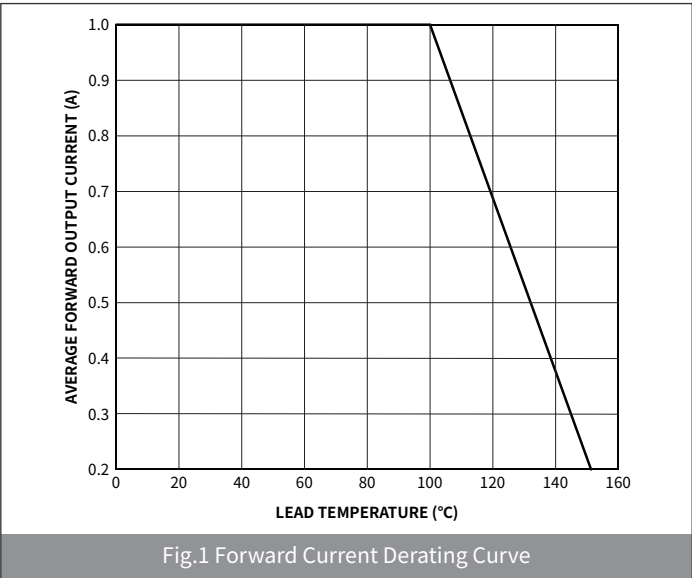
Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                                                                             | SYMBOL           | UNIT  | FR101W     | FR102W | FR103W | FR104W | FR105W | FR106W | FR107W |
|---------------------------------------------------------------------------------------|------------------|-------|------------|--------|--------|--------|--------|--------|--------|
| Device marking code                                                                   |                  |       | F1         | F2     | F3     | F4     | F5     | F6     | F7     |
| Maximum Repetitive Peak Reverse Voltage                                               | $V_{RRM}$        | V     | 50         | 100    | 200    | 400    | 600    | 800    | 1000   |
| Maximum RMS Voltage                                                                   | $V_{RMS}$        | V     | 35         | 70     | 140    | 280    | 420    | 560    | 700    |
| Maximum DC blocking Voltage                                                           | $V_{DC}$         | V     | 50         | 100    | 200    | 400    | 600    | 800    | 1000   |
| Maximum Average Forward Rectified Current @ 60Hz sinewave, Resistance load,TL (Fig.1) | $I_{F(AV)}$      | A     | 1.0        |        |        |        |        |        |        |
| Non-repetitive Peak Forward Surge Current @ t=8.3ms Half-sine wave                    | $I_{FSM}$        | A     | 30.0       |        |        |        |        |        |        |
| Storage temperature                                                                   | $T_{stg}$        | °C    | -55 ~ +150 |        |        |        |        |        |        |
| Junction temperature                                                                  | $T_j$            | °C    | -55 ~ +150 |        |        |        |        |        |        |
| Typical Thermal Resistance                                                            | $R_{\theta J-A}$ | °C /W | 85         |        |        |        |        |        |        |
|                                                                                       | $R_{\theta J-L}$ | °C /W | 28         |        |        |        |        |        |        |

● Electrical Characteristics (Ta=25°C Unless otherwise noted)

| PARAMETER                                               | TEST CONDITIONS                                                    | SYMBOL          | UNIT | FR101W | FR102W | FR103W | FR104W | FR105W | FR106W | FR107W |
|---------------------------------------------------------|--------------------------------------------------------------------|-----------------|------|--------|--------|--------|--------|--------|--------|--------|
| Maximum instantaneous forward voltage                   | I <sub>F</sub> =1.0A                                               | V <sub>F</sub>  | V    | 1.3    |        |        |        |        |        |        |
| Maximum reverse recovery time                           | I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>rr</sub> =0.25A | T <sub>rr</sub> | ns   | 150    |        |        |        | 250    | 500    |        |
| Maximum DC reverse current at rated DC blocking voltage | V <sub>R</sub> =V <sub>DC</sub> , T <sub>A</sub> =25°C             | I <sub>R1</sub> | μA   | 2.0    |        |        |        |        |        |        |
|                                                         | V <sub>R</sub> =V <sub>DC</sub> , T <sub>A</sub> =125°C            | I <sub>R2</sub> |      | 200    |        |        |        |        |        |        |
| Typical junction capacitance                            | 4.0V DC, 1MHz                                                      | C <sub>J</sub>  | pF   | 9      |        |        |        |        |        |        |

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



# FR101W THRU FR107W

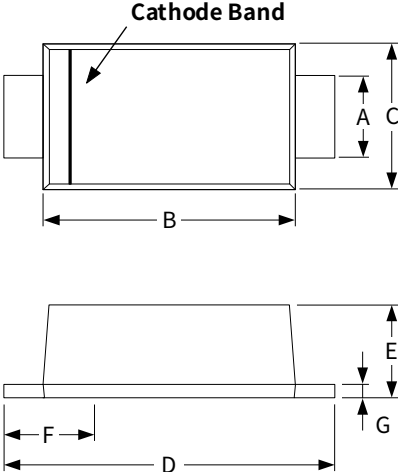
SURFACE MOUNT FAST RECOVERY RECTIFIER

## ● Ordering Information

| PACKAGE   | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|-----------|--------------|----------------|-----------|----------|-------------|---------------|
| SOD-123FL | R1           | 0.0169         | 3000      | 45000    | 180000      | 7"            |

## ● Package Outline Dimensions (SOD -123FL)

| Symbol | Dimensions  |      |        |       |
|--------|-------------|------|--------|-------|
|        | Millimeters |      | Inches |       |
|        | Min.        | Max. | Min.   | Max.  |
| A      | 0.90        | 1.10 | 0.035  | 0.430 |
| B      | 2.55        | 2.85 | 0.100  | 0.111 |
| C      | 1.60        | 1.90 | 0.063  | 0.074 |
| D      | 3.60        | 3.90 | 0.031  | 0.043 |
| E      | 1.00        | 1.20 | 0.031  | 0.035 |
| F      | 0.40        | 0.90 | 0.047  | 0.055 |
| G      | 0.10        | 0.25 | 0.003  | 0.007 |



## ● Suggested Pad Layout

| Symbol | Dimensions  |      |        |       |
|--------|-------------|------|--------|-------|
|        | Millimeters |      | Inches |       |
|        | Min.        | Max. | Min.   | Max.  |
| J      | 1.00        | -    | 0.040  | -     |
| K      | -           | 1.90 | -      | 0.074 |
| M      | 1.50        | -    | 0.059  | -     |

