

SOD-323 Surface Mount Fast Recovery Rectifier

Features

- Low profile package
- Low forward voltage drop
- For surface mounted applications
- Glass Passivated Chip Junction
- Fast switching for high efficiency
- Easy to pick and place

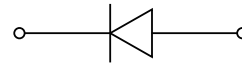
Applications

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

Mechanical Data

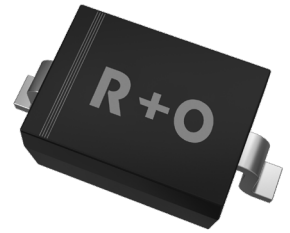
- Case: SOD-323
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

Function Diagram



Reverse Voltage
50-1000 V
Forward Current
1 Ampere

SOD-323



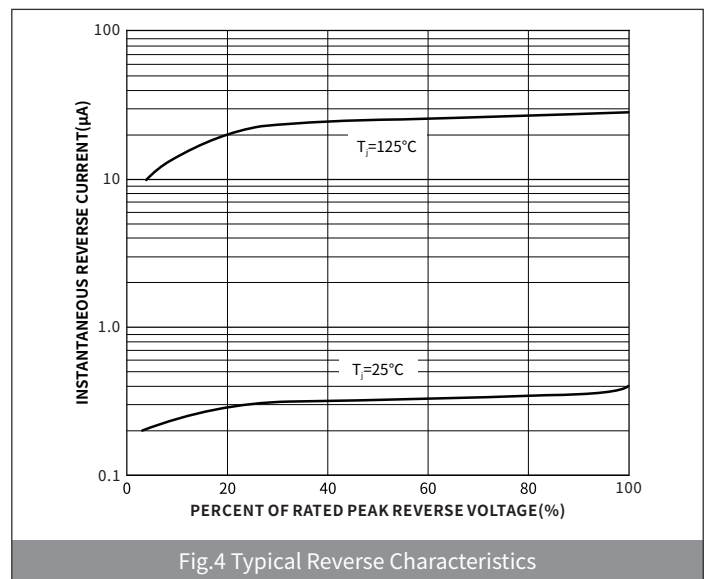
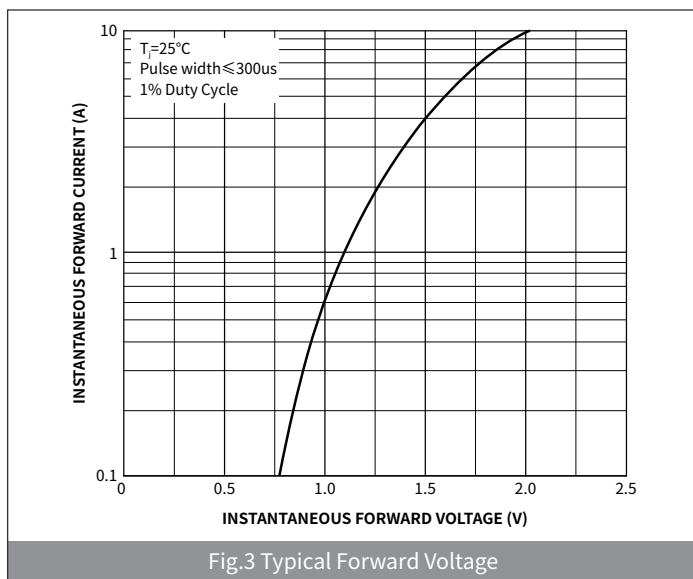
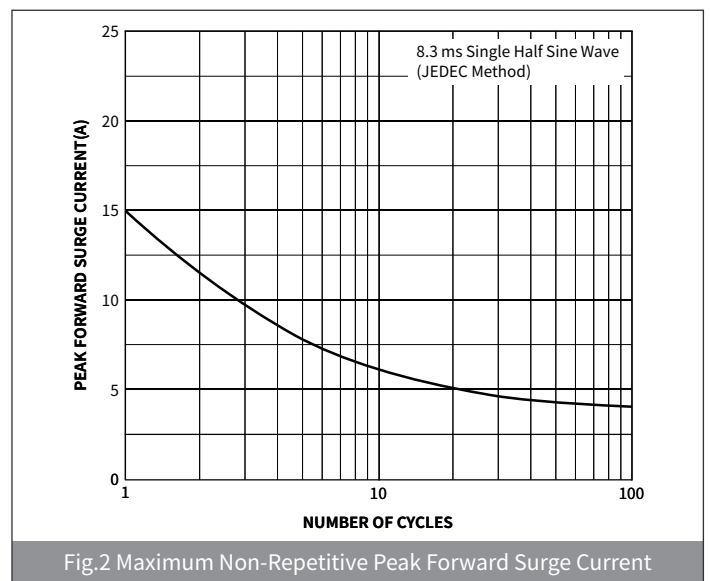
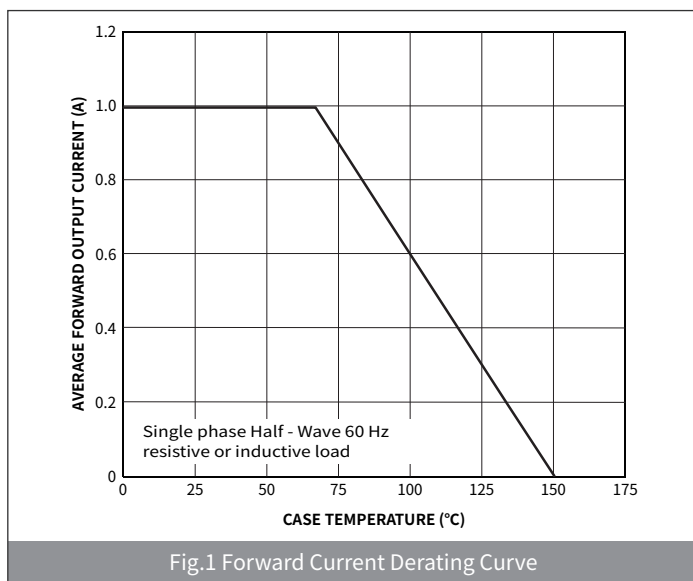
Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | FR101WS | FR102WS | FR103WS | FR104WS | FR105WS | FR106WS | FR107WS |
|--|------------------|------------------|------------|---------|---------|---------|---------|---------|---------|
| Device marking code | | | 1R | 2R | 3R | 4R | 5R | 6R | 7R |
| 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 | | | | | | |
| Peak Forward Surge Current @ t=8.3ms Half-sine wave | I_{FSM} | A | 15 | | | | | | |
| Peak Forward Surge Current @ t=1ms Half-sine wave | I_{FSM} | A | 30 | | | | | | |
| I^2t Rating for fusing (3ms ≤ t ≤ 8.3ms) | I^2t | A ² S | 0.9 | | | | | | |
| Storage temperature | T_{stg} | °C | -55 ~ +150 | | | | | | |
| Junction temperature | T_j | °C | -55 ~ +150 | | | | | | |
| Typical Thermal Resistance | $R_{\theta J-A}$ | °C/W | 150 | | | | | | |
| | $R_{\theta J-C}$ | °C/W | 50 | | | | | | |
| | $R_{\theta J-L}$ | °C/W | 75 | | | | | | |

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

| PARAMETER | TEST CONDITIONS | SYMBOL | UNIT | FR101WS | FR102WS | FR103WS | FR104WS | FR105WS | FR106WS | FR107WS |
|---|------------------------------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| Maximum instantaneous forward voltage | $I_F=1.0A$ | V_F | V | 1.3 | | | | | | |
| Maximum reverse recovery time | $I_F=0.5A, I_R=1.0A, I_{rr}=0.25A$ | T_{rr} | ns | 150 | | | 250 | | 500 | |
| Maximum DC reverse current at rated DC blocking voltage | $V_R=V_{DC}, T_A=25^\circ C$ | I_{R1} | μA | 5 | | | | | | |
| | $V_R=V_{DC}, T_A=125^\circ C$ | I_{R2} | | 50 | | | | | | |
| Typical junction capacitance | 4.0V DC, 1MHz | C_J | pF | 3 | | | | | | |

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



FR101WS THRU FR107WS

SURFACE MOUNT FAST RECOVERY RECTIFIER

● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOD-323 | R1 | 0.0048 | 3000 | 45000 | 180000 | 7" |

● Package Outline Dimensions (SOD-323)

| Symbol | Dimensions | | | |
|----------------|-------------|------|----------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 1.40 | 1.80 | 0.055 | 0.071 |
| B | 0.25 | 0.40 | 0.010 | 0.016 |
| C | 2.30 | 2.80 | 0.091 | 0.110 |
| D | 0.80 | 1.10 | 0.031 | 0.043 |
| D ₁ | 0.80 | 0.90 | 0.031 | 0.035 |
| E | 1.20 | 1.40 | 0.047 | 0.055 |
| F | 0.08 | 0.18 | 0.003 | 0.007 |
| L | 0.475REF | | 0.019REF | |
| L ₁ | 0.20 | 0.45 | 0.008 | 0.018 |
| H | - | 0.2 | - | 0.008 |

● Suggested Pad Layout

| Symbol | Dimensions | | | |
|--------|-------------|------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| X | 0.65 | 0.75 | 0.026 | 0.030 |
| Y | 0.65 | 0.75 | 0.026 | 0.030 |
| Z | 2.10 | 2.20 | 0.084 | 0.088 |