



FR101WS THRU FR107WS

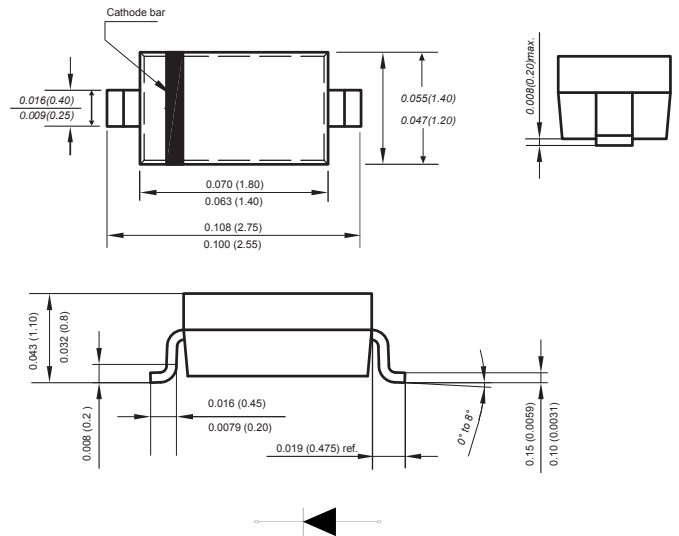
Reverse Voltage - 50 to 1000 Volts Forward Current - 1.0 Ampere

SURFACE MOUNT GLASS PASSIVATED FAST RECOVERY RECTIFIER

Features

- ◆ Glass passivated Chip Junction
- ◆ Low forward voltage drop
- ◆ Low leakage current
- ◆ For surface mounted applications
- ◆ Low profile package
- ◆ Easy to pick and place
- ◆ Lead free in comply with EU RoHS 2011/65/EU directives

SOD-323



Dimensions in inches and (millimeters)

Mechanical Data

Case: SOD-323

Terminals: Solderable per MIL-STD-750, Method 2026A

Polarity: Polarity symbol marking on body

Mounting Position: Any

Approx. Weight: 0.0019 ounce, 0.0548 grams

Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

| Parameter | SYMBOLS | FR101WS | FR102WS | FR103WS | FR104WS | FR105WS | FR106WS | FR107WS | UNITS |
|---|-------------|-------------|---------|---------|---------|---------|---------|---------|------------------|
| Marking Code | | 1R | 2R | 3R | 4R | 5R | 6R | 7R | |
| Maximum repetitive peak reverse voltage | V_{RMM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage | V_{DC} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward rectified current | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) | I_{FSM} | 15 | | | | | | | A |
| Maximum instantaneous forward voltage at 1.0A | V_F | 1.3 | | | | | | | V |
| Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=125^\circ\text{C}$ | I_R | 5 50 | | | | | | | μA |
| Typical junction capacitance (NOTE 3) | C_J | 5 | | | | | | | pF |
| Typical reverse recovery time (NOTE 2) | T_{rr} | 150 | | | | 250 | 500 | | ns |
| Operating junction temperature range | T_J | -55 to +125 | | | | | | | $^\circ\text{C}$ |
| Storage temperature range | T_{STG} | -55 to +150 | | | | | | | $^\circ\text{C}$ |

- Note:**
1. P.C.B. mounted with 0.2" X 0.2" (5 X 5 mm) copper pad areas.
 2. Measured with $I_F=0.5\text{A}$, $I_R=1\text{A}$, $I_{rr}=0.25\text{A}$
 3. Measured at 1.0MHz and applied reverse voltage of 4.0V D.C.
 4. The typical data above is for reference only.



Typical Characteristics

Fig.1 Forward Current Derating Curve

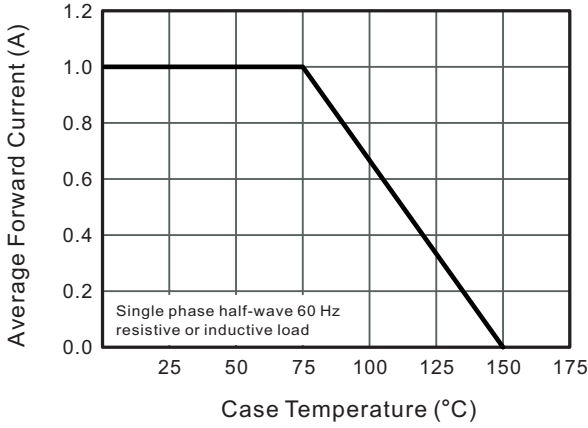


Fig.2 Typical Instantaneous Reverse Characteristics

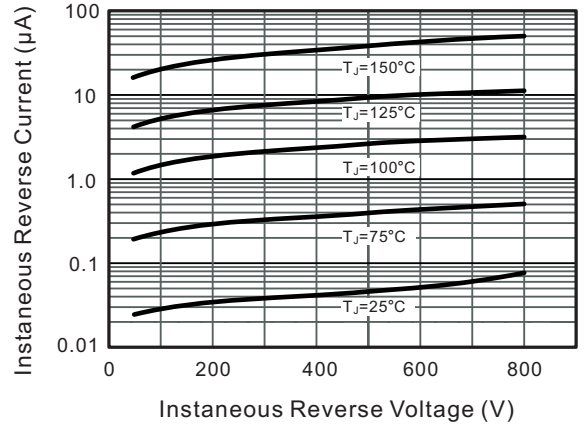


Fig.3 Typical Forward Characteristic

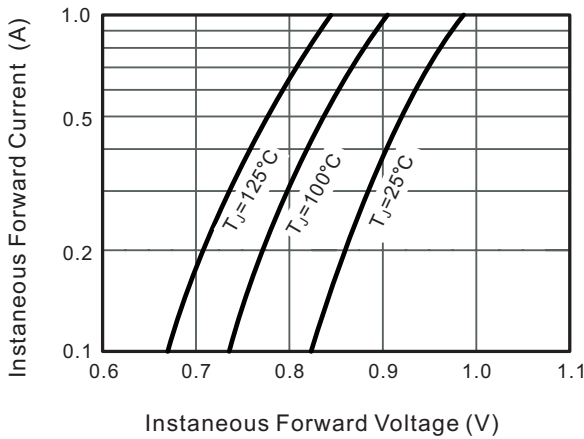


Fig.4 Typical Junction Capacitance

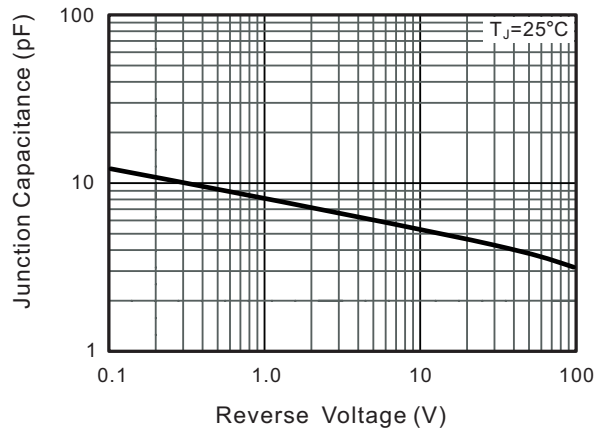
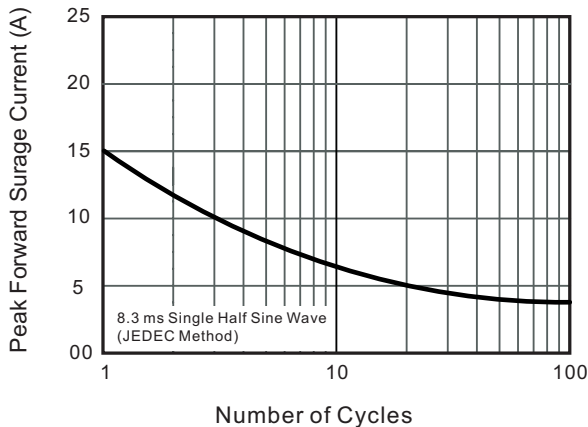


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



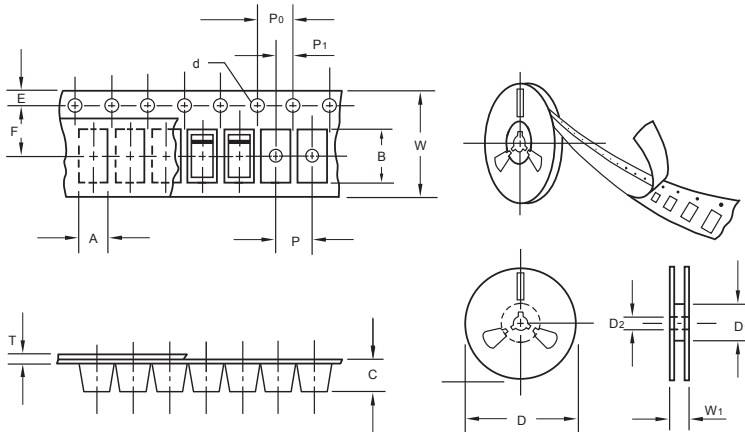
The curve above is for reference only.



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Packing information



unit:mm

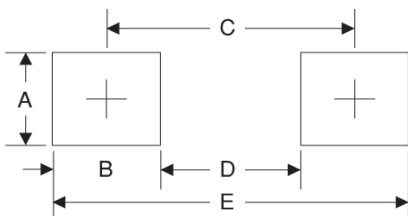
| Item | Symbol | Tolerance | SOD-323 |
|---------------------------|----------------|-----------|---------|
| Carrier width | A | 0.1 | 1.46 |
| Carrier length | B | 0.1 | 2.90 |
| Carrier depth | C | 0.1 | 1.25 |
| Sprocket hole | d | 0.05 | 1.50 |
| 13" Reel outside diameter | D | 2.0 | 330.00 |
| 13" Reel inner diameter | D ₁ | min | 50.00 |
| 7" Reel outside diameter | D | 2.0 | 178.00 |
| 7" Reel inner diameter | D ₁ | min | 54.40 |
| Feed hole diameter | D ₂ | 0.5 | 13.00 |
| Sprocket hole position | E | 0.1 | 1.75 |
| Punch hole position | F | 0.1 | 3.50 |
| Punch hole pitch | P | 0.1 | 4.00 |
| Sprocket hole pitch | P ₀ | 0.1 | 4.00 |
| Embossment center | P ₁ | 0.1 | 2.00 |
| Overall tape thickness | T | 0.1 | 0.06 |
| Tape width | W | 0.3 | 8.00 |
| Reel width | W ₁ | 1.0 | 12.30 |

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

| PACKAGE | REEL SIZE | REEL (pcs) | COMPONENT SPACING (m/m) | BOX (pcs) | INNER BOX (m/m) | REEL DIA. (m/m) | CARTON SIZE (m/m) | CARTON (pcs) | APPROX. GROSS WEIGHT (kg) |
|---------|-----------|------------|-------------------------|-----------|-----------------|-----------------|-------------------|--------------|---------------------------|
| SOD-323 | 7" | 3,000 | 4.0 | 45,000 | 210*208*203 | 178 | 430*430*235 | 180,000 | 9.0 |

Suggested Pad Layout



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 1.2 | 0.047 |
| B | 1.2 | 0.047 |
| C | 3.6 | 0.141 |
| D | 1.4 | 0.055 |
| E | 3.8 | 0.149 |