



3DFR1A THRU 3DFR1M

Surface Mount Glass Passivated Fast Recovery Rectifier

Reverse Voltage -50~1000 V

Forward Current - 1.0A

FEATURES

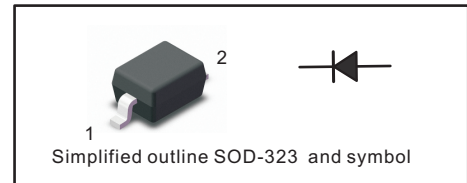
- Low forward voltage drop
- Low leakage current
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Easy to pick and place
- Lead free in comply with EU RoHS 2011/65/EU directives

MECHANICAL DATA

- Case: SOD-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 5.48mg / 0.00019oz

PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | Cathode |
| 2 | Anode |



Maximum Ratings and Electrical characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

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

| Parameter | Symbols | 3DFR1A | 3DFR1B | 3DFR1D | 3DFR1G | 3DFR1J | 3DFR1K | 3DFR1M | Units |
|---|----------------|------------|--------|--------|--------|--------|--------|--------|------------------|
| Maximum Repetitive Peak Reverse Voltage | V_{RRM} | 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 | | | | | | | A |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load | I_{FSM} | 15 | | | | | | | A |
| Maximum Instantaneous Forward Voltage at 1 A | V_F | 1.3 | | | | | | | V |
| Maximum DC Reverse Current $T_a = 25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage $T_a = 125\text{ }^\circ\text{C}$ | I_R | 5 50 | | | | | | | μA |
| Typical reverse recovery time ⁽²⁾ | t_{rr} | 150 | | | | 250 | 500 | | ns |
| Typical junction capacitance ⁽³⁾ | C_j | 5 | | | | | | | pF |
| Operating and Storage Temperature Range | T_j, T_{stg} | -55 ~ +150 | | | | | | | $^\circ\text{C}$ |

(1) P.C.B. mounted with 0.2" X 0.2" (5 X 5 mm) copper pad areas.

(2) Measured with $I_F=0.5\text{A}, I_R=1\text{A}, t_{rr}=0.25\text{A}$

(3) Measured at 1 MHz and applied reverse voltage of 4 V D.C



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Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Fig.1 Forward Current Derating Curve

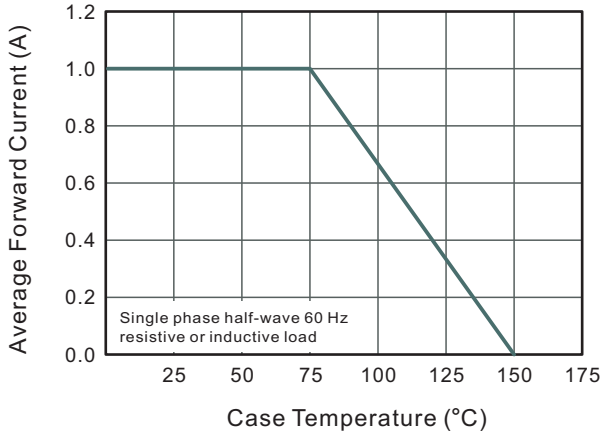


Fig.2 Typical Instantaneous Reverse Characteristics

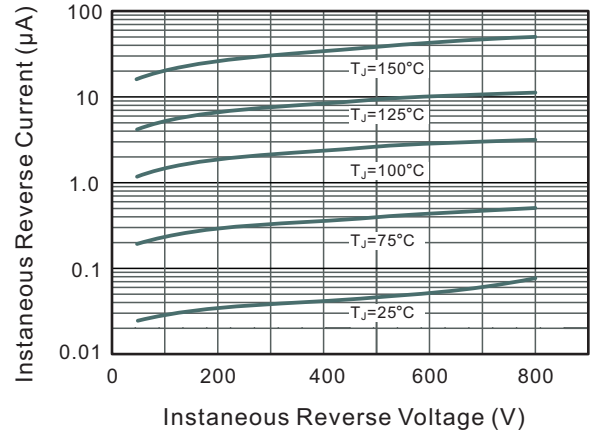


Fig.3 Typical Forward Characteristic

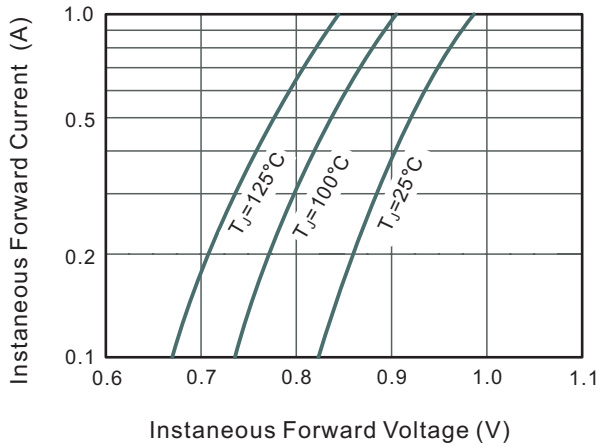


Fig.4 Typical Junction Capacitance

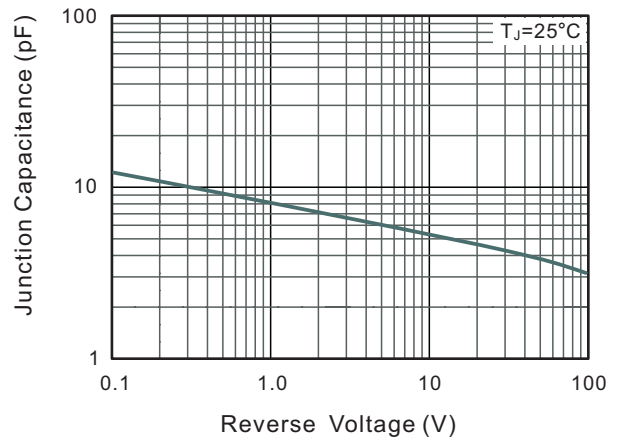
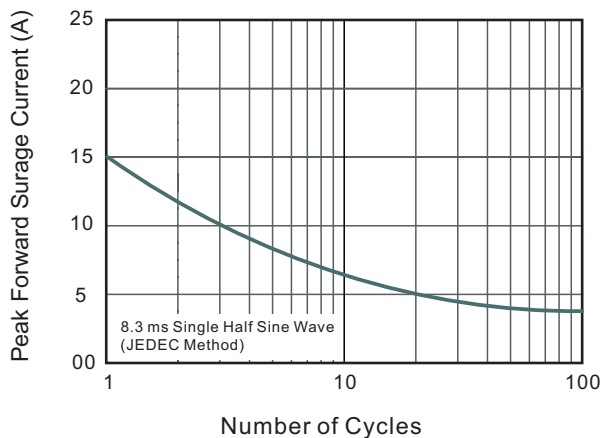


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current





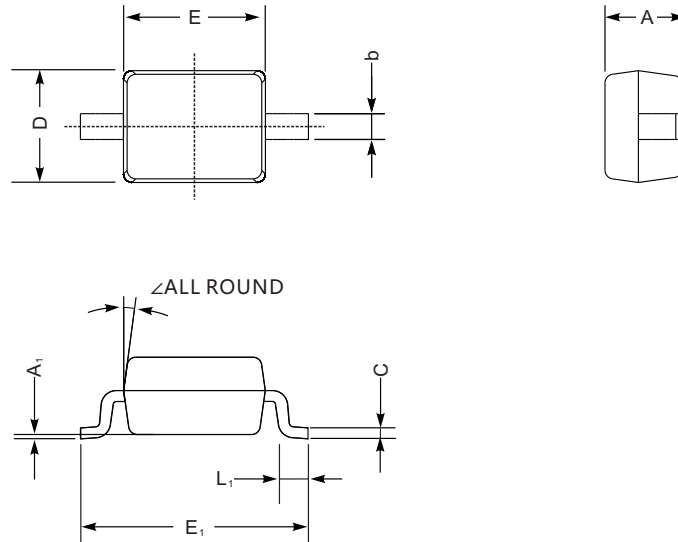
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PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

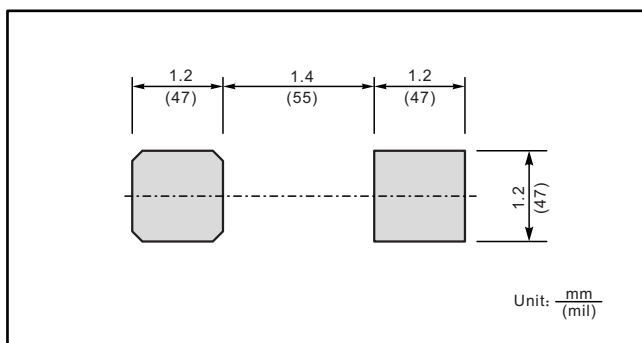
SOD-323



SOD-323 mechanical data

| UNIT | | A | C | D | E | E ₁ | b | L ₁ | A ₁ | ∠ |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| mm | max | 1.1 | 0.15 | 1.4 | 1.8 | 2.75 | 0.4 | 0.45 | 0.2 | 9° |
| | min | 0.8 | 0.08 | 1.2 | 1.4 | 2.55 | 0.25 | 0.2 | — | |
| mil | max | 43 | 5.9 | 55 | 70 | 108 | 16 | 16 | 8 | |
| | min | 32 | 3.1 | 47 | 63 | 100 | 9.8 | 7.9 | — | |

The recommended mounting pad size



Marking

| Type number | Marking code |
|-------------|--------------|
| 3DFR1A | 1R |
| 3DFR1B | 2R |
| 3DFR1D | 3R |
| 3DFR1G | 4R |
| 3DFR1J | 5R |
| 3DFR1K | 6R |
| 3DFR1M | R7 |

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