

## Surface Mount Fast Recovery Rectifiers

Reverse Voltage - 50 to 1000 V

Forward Current - 1 A

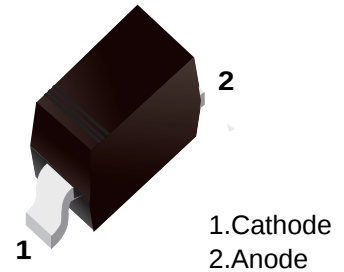
### Features

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

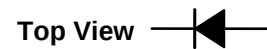


### Mechanical Data

- Case: SOD-323
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 4.5mg / 0.00016oz



■ Simplified outline(SOD-323)



### Maximum Ratings and Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

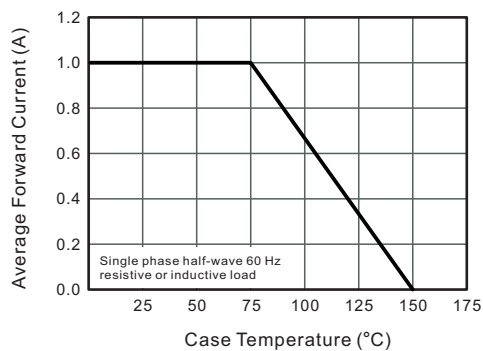
Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter                                                                                             | Symbols                           | FR101WS    | FR102WS | FR103WS | FR104WS | FR105WS | FR106WS | FR107WS | Units |
|-------------------------------------------------------------------------------------------------------|-----------------------------------|------------|---------|---------|---------|---------|---------|---------|-------|
| Maximum Repetitive Peak Reverse Voltage                                                               | V <sub>RRM</sub>                  | 50         | 100     | 200     | 400     | 600     | 800     | 1000    | V     |
| Maximum RMS voltage                                                                                   | V <sub>RMS</sub>                  | 35         | 70      | 140     | 280     | 420     | 560     | 700     | V     |
| Maximum DC Blocking Voltage                                                                           | V <sub>DC</sub>                   | 50         | 100     | 200     | 400     | 600     | 800     | 1000    | V     |
| Maximum Average Forward Rectified Current at T <sub>c</sub> = 125 °C                                  | IF(AV)                            | 1          |         |         |         |         |         |         | A     |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load                    | I <sub>FSM</sub>                  | 25         |         |         |         |         |         |         | A     |
| Maximum Instantaneous Forward Voltage at 1 A                                                          | V <sub>F</sub>                    | 1.3        |         |         |         |         |         |         | V     |
| Maximum DC Reverse Current T <sub>a</sub> = 25 °C at Rated DC Blocking Voltage T <sub>a</sub> =125 °C | I <sub>R</sub>                    | 5<br>50    |         |         |         |         |         |         | μA    |
| Typical Junction Capacitance at VR=4V,f=1MHZ                                                          | C <sub>j</sub>                    | 5          |         |         |         |         |         |         | pF    |
| Maximum Reverse Recovery Time <sup>(1)</sup>                                                          | T <sub>rr</sub>                   | 150        |         |         |         | 250     | 500     |         | nS    |
| Typical Thermal Resistance <sup>(2)</sup>                                                             | R <sub>θJA</sub>                  | 85         |         |         |         |         |         |         | ℃/W   |
| Operating and Storage Temperature Range                                                               | T <sub>j</sub> , T <sub>stg</sub> | -55 ~ +150 |         |         |         |         |         |         | ℃     |

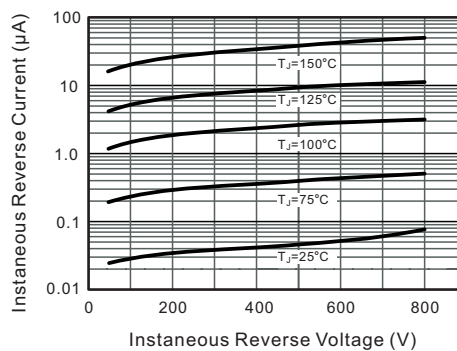
(1) Measured with  $I_F=0.5\text{A}, I_R=1\text{A}, I_n=0.25\text{A}$

(2) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.

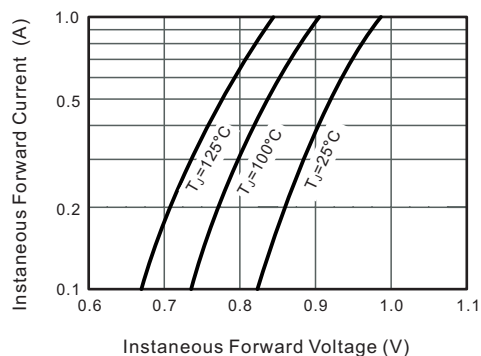
**Fig.1 Forward Current Derating Curve**



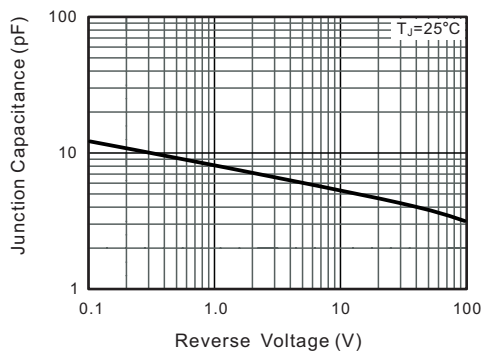
**Fig.2 Typical Instantaneous Reverse Characteristics**



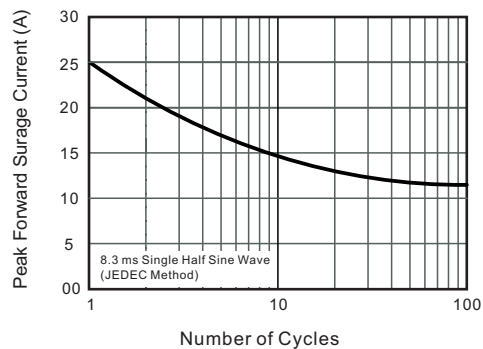
**Fig.3 Typical Forward Characteristic**



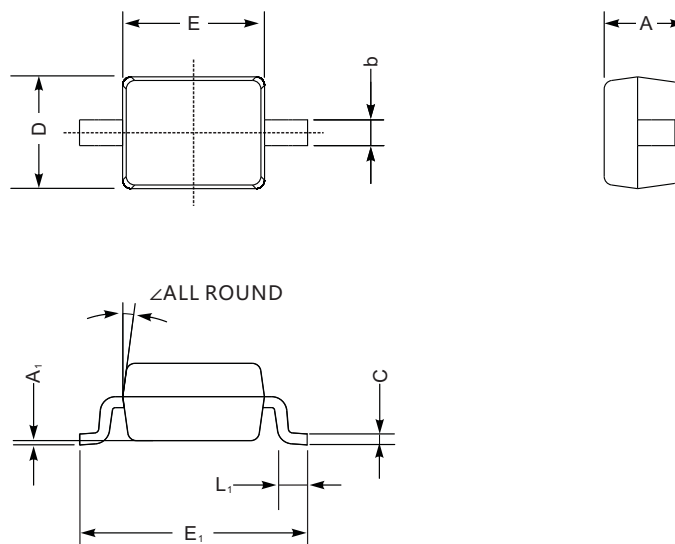
**Fig.4 Typical Junction Capacitance**



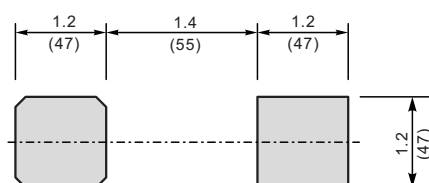
**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



## Plastic surface mounted package; 2 leads



| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | b    | L <sub>1</sub> | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| 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            | —              |    |



Unit:  $\frac{\text{mm}}{(\text{mil})}$

| Package | Packing Description | Packing Quantity | Industry Standard |
|---------|---------------------|------------------|-------------------|
| SOD-323 | Tape/Reel, 7" reel  | 3000             | EIA-481-1         |