

## Surface Mount General Purpose Silicon Rectifiers

Reverse Voltage - 50 to 1000 V

Forward Current - 1 A

## FEATURES

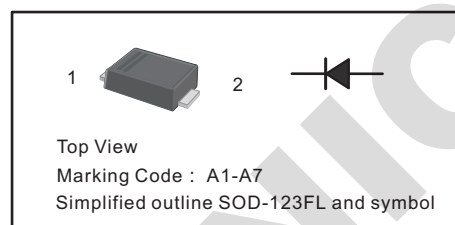
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Ideal for automated placement
- Lead free in comply with EU RoHS 2011/65/EU directives

## MECHANICAL DATA

- Case: SOD-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 15mg 0.00048oz

## 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         | 1N4001W         | 1N4002W | 1N4003W | 1N4004W | 1N4005W | 1N4006W | 1N4007W | 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 at $T_a = 65^\circ\text{C}$                                               | $I_{F(AV)}$     | 1               |         |         |         |         |         |         | A                  |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)                   | $I_{FSM}$       | 25              |         |         |         |         |         |         | A                  |
| Maximum Instantaneous Forward Voltage at 1 A                                                                        | $V_F$           | 1.1             |         |         |         |         |         |         | V                  |
| Maximum DC Reverse Current<br>at Rated DC Blocking Voltage<br>$T_a = 25^\circ\text{C}$<br>$T_a = 125^\circ\text{C}$ | $I_R$           | 5<br>50         |         |         |         |         |         |         | $\mu\text{A}$      |
| Typical Junction Capacitance <sup>1)</sup>                                                                          | $C_j$           | 4               |         |         |         |         |         |         | pF                 |
| Typical Thermal Resistance <sup>2)</sup>                                                                            | $R_{\theta JA}$ | 180             |         |         |         |         |         |         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                                                                             | $T_j, T_{stg}$  | $-55 \sim +150$ |         |         |         |         |         |         | $^\circ\text{C}$   |

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

2) Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P.C.B. mounted

Fig.1 Forward Current Derating Curve

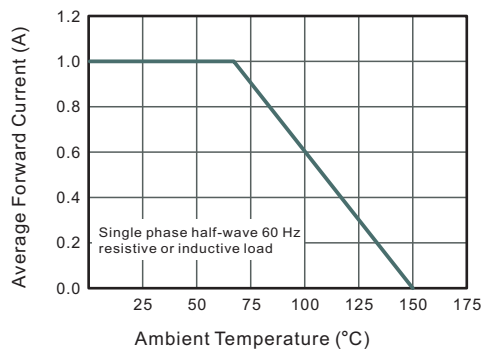


Fig.2 Typical Instantaneous Reverse Characteristics

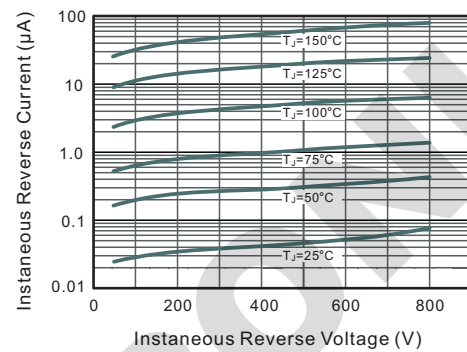


Fig.3 Typical Forward Characteristic

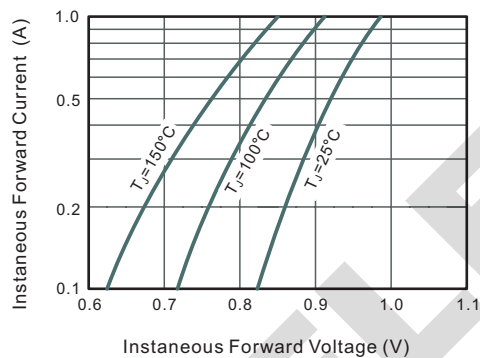
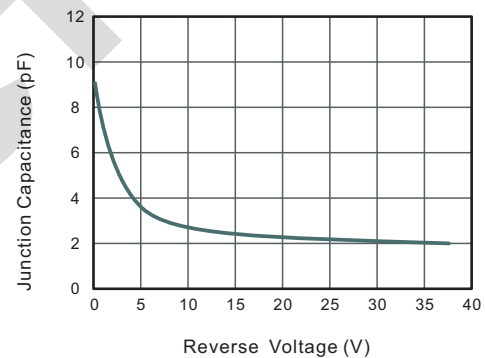


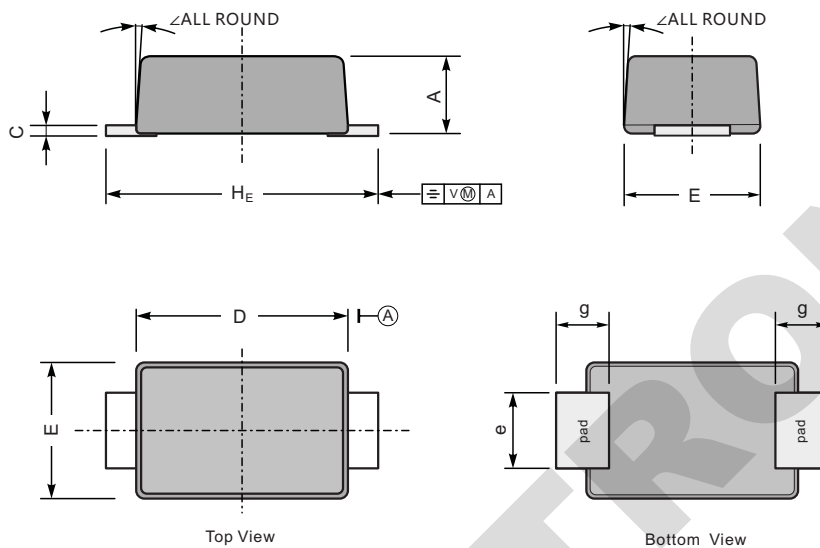
Fig.4 Typical Junction Capacitance



### PACKAGE OUTLINE

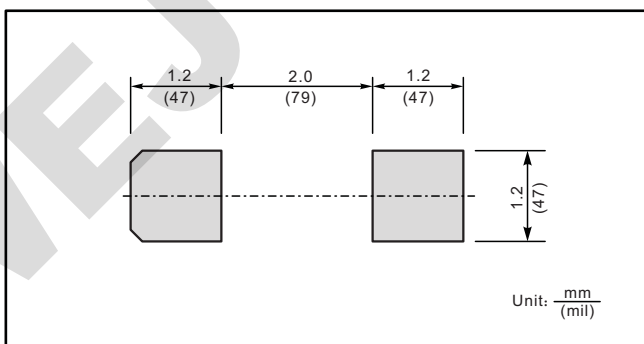
Plastic surface mounted package; 2 leads

SOD-123FL



| UNIT |     | A   | C    | D   | E   | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|-----|------|-----|-----|-----|-----|----------------|----|
| mm   | max | 1.1 | 0.20 | 2.9 | 1.9 | 1.1 | 0.9 | 3.8            | 7° |
|      | min | 0.9 | 0.12 | 2.6 | 1.7 | 0.8 | 0.7 | 3.5            |    |
| mil  | max | 43  | 7.9  | 114 | 75  | 43  | 35  | 150            |    |
|      | min | 35  | 4.7  | 102 | 67  | 31  | 28  | 138            |    |

### The recommended mounting pad size



### Marking

| Type number | Marking code |
|-------------|--------------|
| 1N4001W     | A1           |
| 1N4002W     | A2           |
| 1N4003W     | A3           |
| 1N4004W     | A4           |
| 1N4005W     | A5           |
| 1N4006W     | A6           |
| 1N4007W     | A7           |