

## Surface Mount General Purpose Silicon Rectifiers

Reverse Voltage - 50 to 1000 V

Forward Current - 1 A

### FEATURES

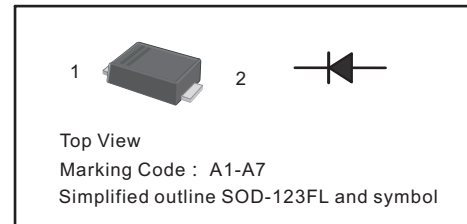
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Ideal for automated placement
- Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- Case: SOD-123FL
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 15mg / 0.00053oz

### 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 %.

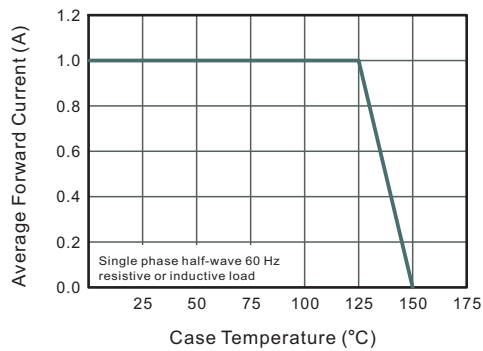
| Parameter                                                                                                                         | Symbols         | SOD4001    | SOD4002 | SOD4003 | SOD4004 | SOD4005 | SOD4006 | SOD4007 | Units                |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------|------------|---------|---------|---------|---------|---------|---------|----------------------|
| 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 $T_c = 125\text{ }^{\circ}\text{C}$                                                  | $I_{F(AV)}$     | 1          |         |         |         |         |         |         | A                    |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load                                                | $I_{FSM}$       | 30         |         |         |         |         |         |         | A                    |
| Maximum Instantaneous Forward Voltage at 1 A                                                                                      | $V_F$           | 1.1        |         |         |         |         |         |         | V                    |
| Maximum DC Reverse Current $T_a = 25\text{ }^{\circ}\text{C}$<br>at Rated DC Blocking Voltage $T_a = 125\text{ }^{\circ}\text{C}$ | $I_R$           | 5<br>50    |         |         |         |         |         |         | $\mu\text{A}$        |
| Typical Junction Capacitance <sup>(1)</sup>                                                                                       | $C_j$           | 8(TYP.)    |         |         |         |         |         |         | pF                   |
| Typical Thermal Resistance <sup>(2)</sup>                                                                                         | $R_{\theta JA}$ | 90         |         |         |         |         |         |         | $^{\circ}\text{C/W}$ |
| Operating and Storage Temperature Range                                                                                           | $T_j, T_{stg}$  | -55 ~ +150 |         |         |         |         |         |         | $^{\circ}\text{C}$   |

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

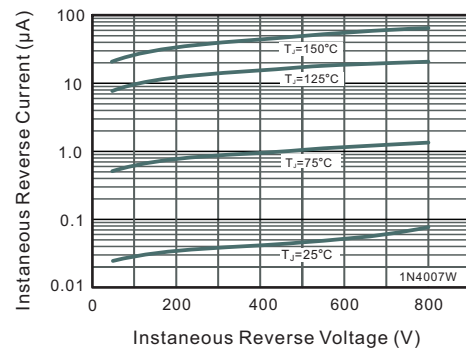
( 2 ) P.C.B. mounted with 2.0" X 2.0" (5 X 5 cm) copper pad areas.



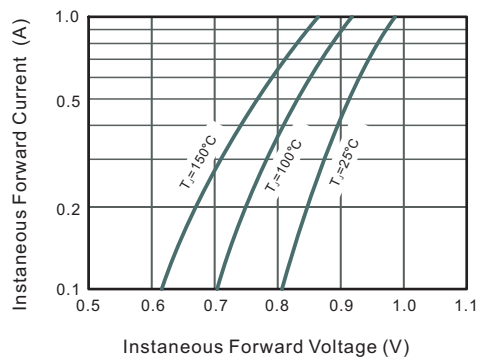
**Fig.1 Forward Current Derating Curve**



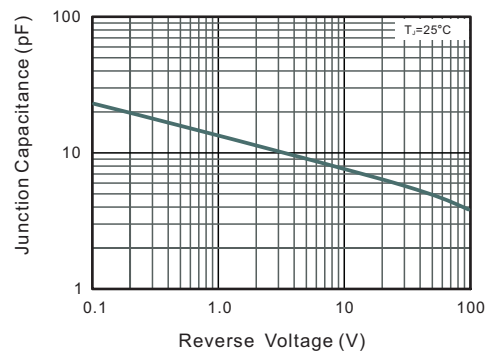
**Fig.2 Typical Instantaneous Reverse Characteristics**



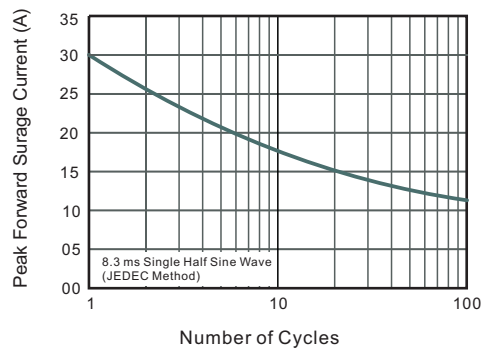
**Fig.3 Typical Forward Characteristic**



**Fig.4 Typical Junction Capacitance**



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

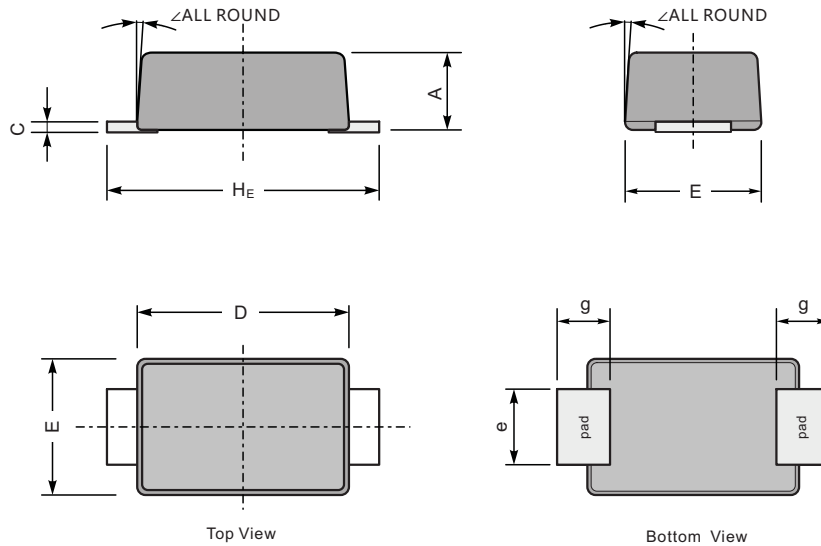




## PACKAGE OUTLINE

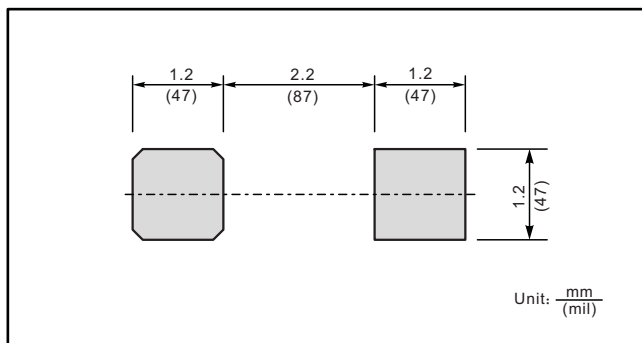
Plastic surface mounted package; 2 leads

SOD-123FL



| UNIT |     | A    | C    | D   | E    | e   | g   | H <sub>E</sub> | ∠  |
|------|-----|------|------|-----|------|-----|-----|----------------|----|
| mm   | max | 1.15 | 0.20 | 2.8 | 2.0  | 1.2 | 0.9 | 3.8            | 5° |
|      | min | 0.95 | 0.12 | 2.5 | 1.7  | 0.9 | 0.7 | 3.5            |    |
| mil  | max | 45   | 7.9  | 110 | 78.7 | 47  | 35  | 150            |    |
|      | min | 37   | 4.7  | 98  | 67   | 35  | 28  | 138            |    |

### The recommended mounting pad size



### Marking

| Type number | Marking code |
|-------------|--------------|
| SOD4001     | A1           |
| SOD4002     | A2           |
| SOD4003     | A3           |
| SOD4004     | A4           |
| SOD4005     | A5           |
| SOD4006     | A6           |
| SOD4007     | A7           |