

## Surface Mount General Purpose Silicon Rectifiers

Reverse Voltage - 50 to 1000 V

Forward Current - 1.2 A

### FEATURES

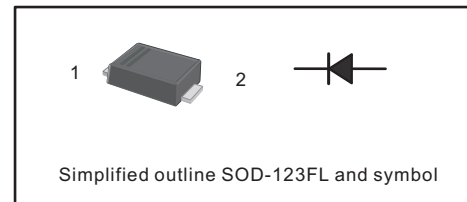
- For surface mounted applications
- Low profile package
- Glass Passivated Chip Junction
- Ideal for automated placement
- Lead free in comply with EU RoHS 2011/65/EU directives

### 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.

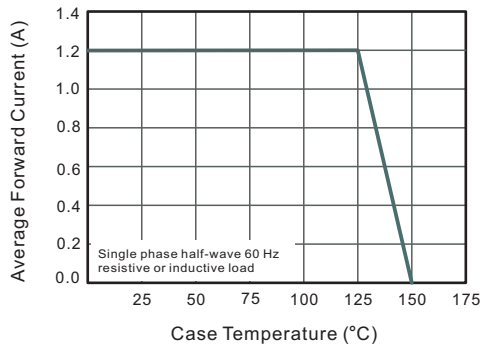
Single phase half-wave 60 Hz, resistive or inductive load, for capacitive load current derate by 20 %.

| Parameter   | Symbols                            | S12AW      | S12BW | S12DW | S12GW | S12JW | S12KW | S12MW | 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 $T_c = 125\text{ }^\circ\text{C}$  | $I_{F(AV)}$                        | 1.2        |       |       |       |       |       |       | A                  |
| Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load  | $I_{FSM}$                          | 40         |       |       |       |       |       |       | A                  |
| Maximum Instantaneous Forward Voltage at 1.2 A  | $V_F$                              | 1.0        |       |       |       |       |       |       | 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>   | $C_j$                              | 18         |       |       |       |       |       |       | pF                 |
| Typical Thermal Resistance <sup>(2)</sup>   | $R_{\theta JA}$<br>$R_{\theta JC}$ | 80<br>25   |       |       |       |       |       |       | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range   | $T_j, T_{stg}$                     | -55 ~ +150 |       |       |       |       |       |       | $^\circ\text{C}$   |

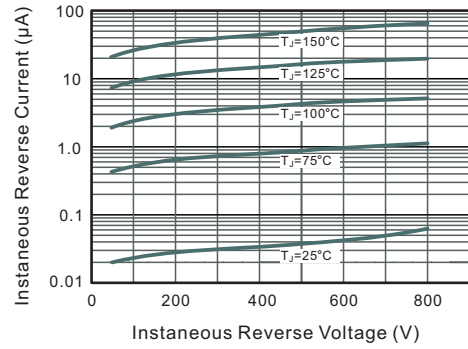
( 1 ) Measured at 1 MHz and applied reverse voltage of 4 V D.C

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

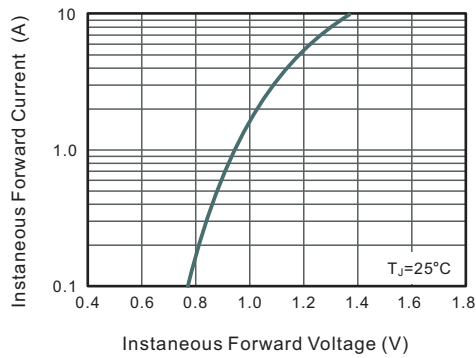
**Fig.1 Forward Current Derating Curve**



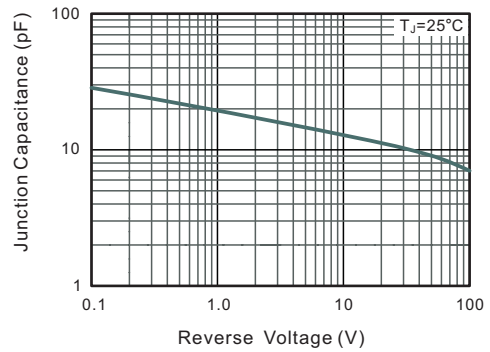
**Fig.2 Typical Instantaneous Reverse Characteristics**



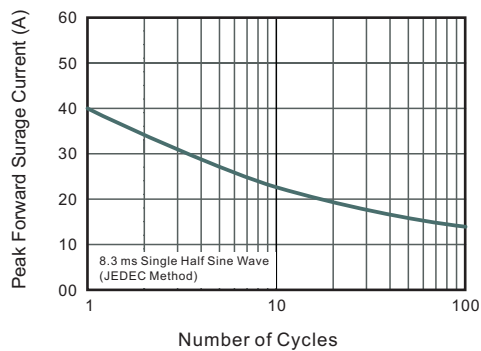
**Fig.3 Typical Forward Characteristic**



**Fig.4 Typical Junction Capacitance**



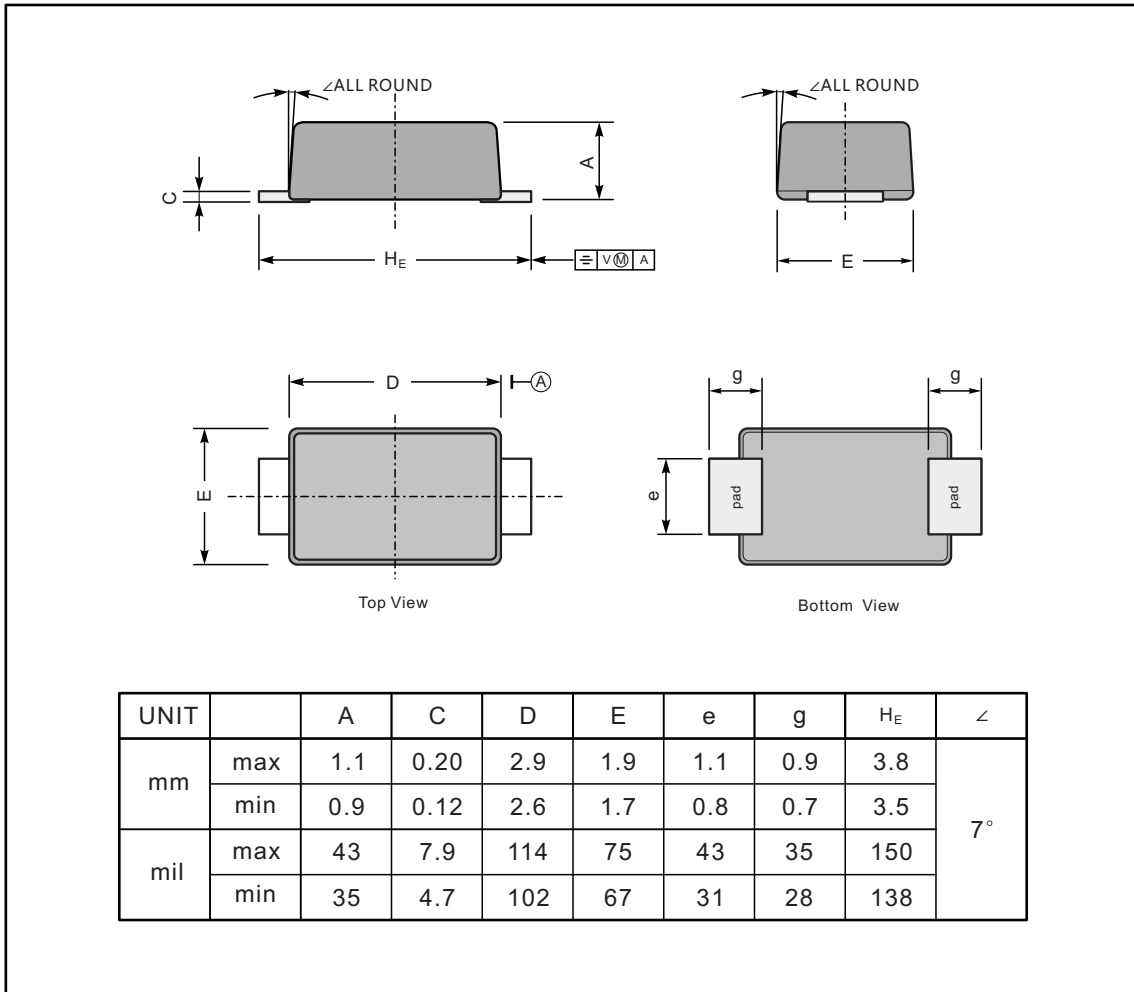
**Fig.5 Maximum Non-Repetitive Peak Forward Surge Current**



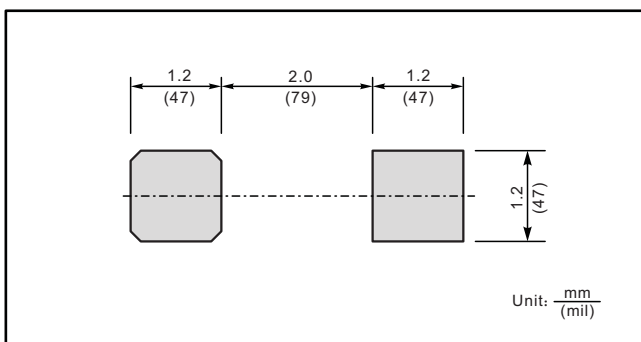
**PACKAGE OUTLINE**

Plastic surface mounted package; 2 leads

SOD-123FL



**The recommended mounting pad size**



**Marking**

| Type number | Marking code |
|-------------|--------------|
| S12AW       | S12A         |
| S12BW       | S12B         |
| S12DW       | S12D         |
| S12GW       | S12G         |
| S12JW       | S12J         |
| S12KW       | S12K         |
| S12MW       | S12M         |