

## Surface Mount Rectifier Diode

### Features

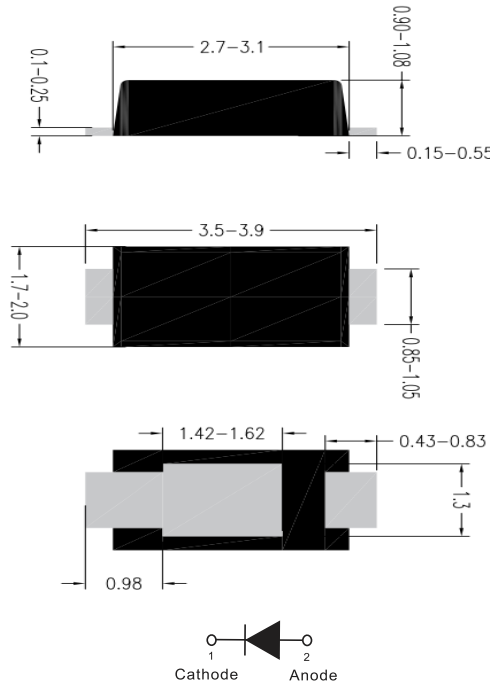
- Glass passivated junction chip
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### Mechanical Data

- Case: SOD-123HE
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 16 mg (approximately)

### SOD-123HE

Unit : inch(mm)



### Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ unless otherwise note)

| Parameter                                                                                     | Symbol      | GS1004HE     | GS1006HE | GS1010HE | Unit             |
|-----------------------------------------------------------------------------------------------|-------------|--------------|----------|----------|------------------|
| Repetitive peak reverse voltage                                                               | $V_{RRM}$   | 400          | 600      | 1000     | V                |
| Reverse voltage, total rms value                                                              | $V_{RMS}$   | 280          | 420      | 700      | V                |
| Maximum DC blocking voltage                                                                   | $V_{DC}$    | 400          | 600      | 1000     |                  |
| Forward current                                                                               | $I_{F(AV)}$ | 1            |          |          | A                |
| Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode | $I_{FSM}$   | 30           |          |          | A                |
| Junction temperature                                                                          | $T_J$       | - 55 to +150 |          |          | $^\circ\text{C}$ |
| Storage temperature                                                                           | $T_{STG}$   | - 55 to +150 |          |          | $^\circ\text{C}$ |

### Thermal Performance

| Parameter                              | Symbol          | Typ | Unit               |
|----------------------------------------|-----------------|-----|--------------------|
| Junction to Lead Thermal Resistance    | $R_{\theta JL}$ | 25  | $^\circ\text{C/W}$ |
| Junction to Ambient Thermal Resistance | $R_{\theta JA}$ | 85  | $^\circ\text{C/W}$ |

### Electrical Specifications ( $T_A=25^\circ\text{C}$ unless otherwise note)

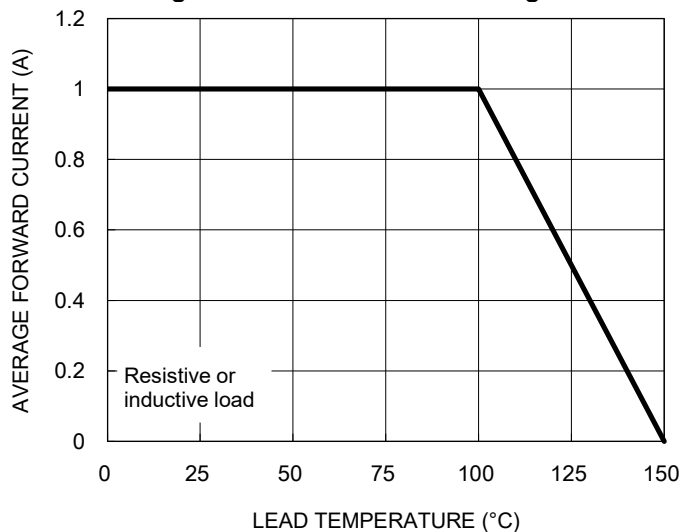
| Parameter                                              | Conditions                                   | Symbol | Typ | MAX | Unit          |
|--------------------------------------------------------|----------------------------------------------|--------|-----|-----|---------------|
| Forward voltage <sup>(1)</sup>                         | $I_F = 1\text{A}$ , $T_J = 25^\circ\text{C}$ | $V_F$  | -   | 1.1 | V             |
| Reverse current @ rated $V_R$ per diode <sup>(2)</sup> | $T_J = 25^\circ\text{C}$                     | $I_R$  | -   | 1   | $\mu\text{A}$ |
|                                                        | $T_J = 125^\circ\text{C}$                    |        | -   | 50  | $\mu\text{A}$ |
| Junction capacitance                                   | 1 MHz, $V_R=4\text{V}$                       | $C_J$  | 7   | -   | pF            |

#### Notes:

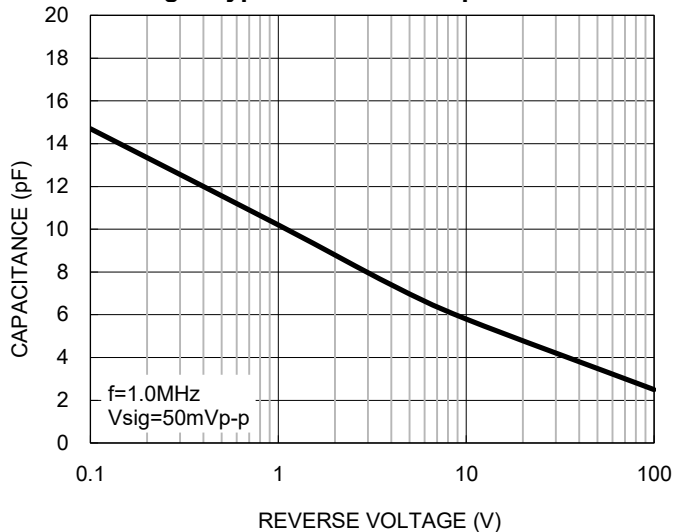
1. Pulse test with  $PW=0.3\text{ ms}$
2. Pulse test with  $PW=30\text{ ms}$

## Characteristics Curves ( $T_A=25^\circ\text{C}$ unless otherwise note)

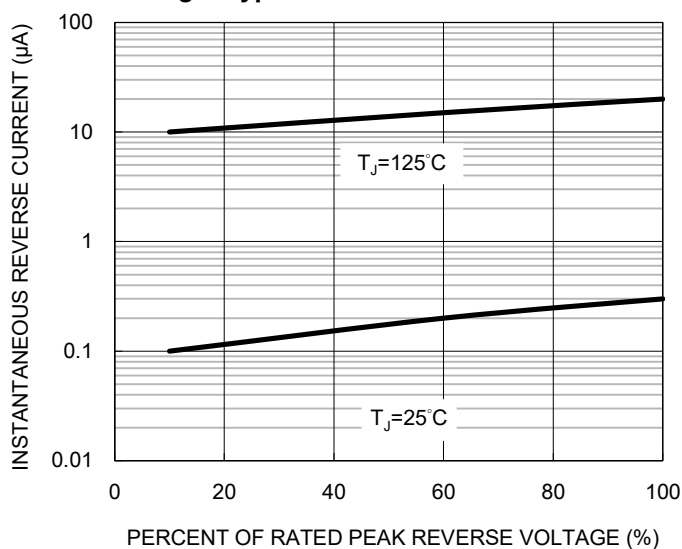
**Fig.1 Forward Current Derating Curve**



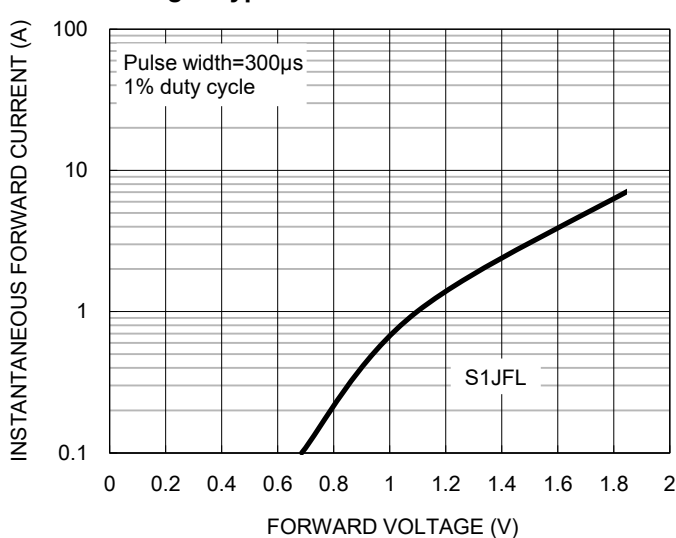
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**



**Fig.5 Maximum Non-repetitive Forward Surge Current**

