

## Small Signal Switching Diode, High Voltage



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diode, especially suited for applications requiring high voltage capability
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### DESIGN SUPPORT TOOLS

[click logo to get started](#)
**3D**  
Models  
Available

### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.3 mg

**Packaging codes / options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### PARTS TABLE

| PART     | ORDERING CODE  | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS       |
|----------|--|-----------------------|--------------|---------------|
| GSD2004W | GSD2004W-E3-08 or GSD2004W-E3-18<br>GSD2004W-HE3-08 or GSD2004W-HE3-18 | Single                | B6           | Tape and reel |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                           | TEST CONDITION               | SYMBOL    | VALUE | UNIT |
|-------------------------------------|------------------------------|-----------|-------|------|
| Continuous reverse voltage          |                              | $V_R$     | 240   | V    |
| Repetitive peak reverse voltage     |                              | $V_{RRM}$ | 300   | V    |
| Forward current (continuous)        |                              | $I_F$     | 225   | mA   |
| Repetitive peak forward current     |                              | $I_{FRM}$ | 625   | mA   |
| Non-repetitive peak forward current | $t_p = 1\text{ }\mu\text{s}$ | $I_{FSM}$ | 4     | A    |
|                                     | $t_p = 1\text{ s}$           | $I_{FSM}$ | 1     | A    |
| Power dissipation <sup>(1)</sup>    |                              | $P_{tot}$ | 350   | mW   |

### THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER   | TEST CONDITION | SYMBOL     | VALUE       | UNIT               |
|---|----------------|------------|-------------|--------------------|
| Typical thermal resistance junction to ambient air <sup>(1)</sup> |                | $R_{thJA}$ | 357         | K/W                |
| Junction temperature  |                | $T_j$      | 150         | $^{\circ}\text{C}$ |
| Storage temperature range   |                | $T_{stg}$  | -65 to +150 | $^{\circ}\text{C}$ |
| Operating temperature range                                       |                | $T_{op}$   | -55 to +150 | $^{\circ}\text{C}$ |

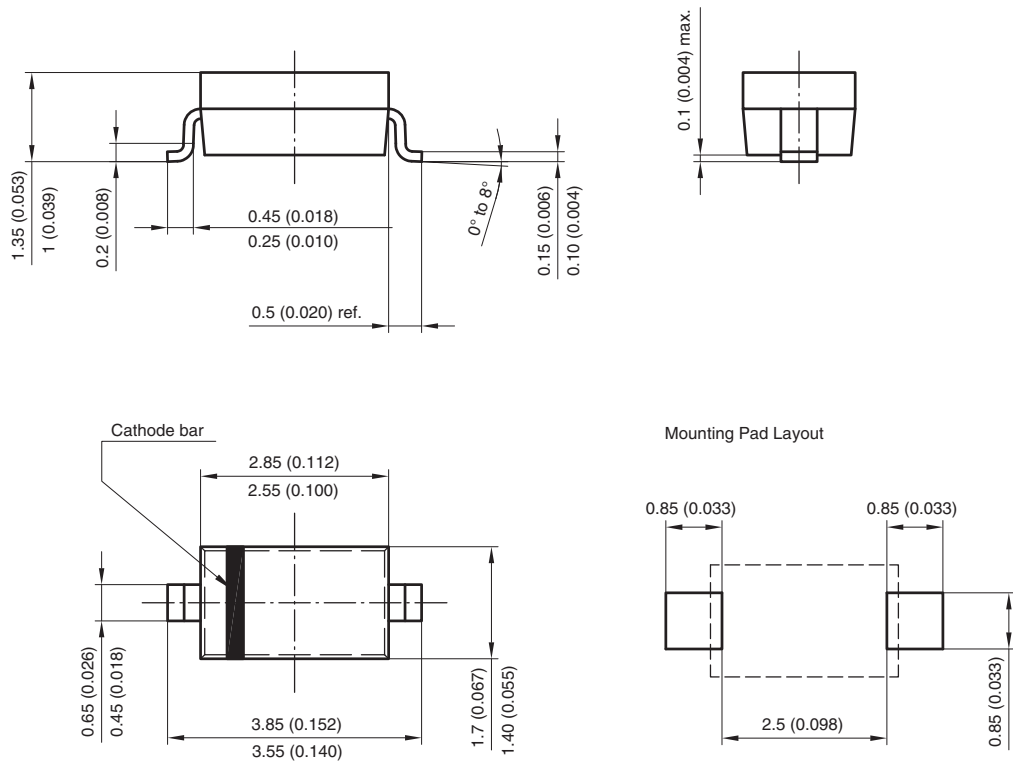
#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature



| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |  |            |      |      |      |               |
|---|--|------------|------|------|------|---------------|
| PARAMETER   | TEST CONDITION   | SYMBOL     | MIN. | TYP. | MAX. | UNIT          |
| Reverse breakdown voltage   | $I_R = 100\text{ }\mu\text{A}$   | $V_{(BR)}$ | 300  |      |      | V             |
| Leakage current   | $V_R = 240\text{ V}$   | $I_R$      |      |      | 100  | nA            |
|   | $V_R = 240\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$                | $I_R$      |      |      | 100  | $\mu\text{A}$ |
| Forward voltage   | $I_F = 100\text{ mA}$  | $V_F$      |      |      | 1    | V             |
|   | $I_F = 20\text{ mA}$   | $V_F$      |      | 0.83 | 0.87 | V             |
| Diode capacitance   | $V_F = V_R = 0, f = 1\text{ MHz}$                                      | $C_D$      |      |      | 5    | pF            |
| Reverse recovery time   | $I_F = I_R = 30\text{ mA}, I_R = 3\text{ mA}, R_L = 100\text{ }\Omega$ | $t_{rr}$   |      |      | 50   | ns            |

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**



Rev. 4 - Date: 24. Sep. 2009  
 Document no.: S8-V-3910.01-001 (4)  
 17432



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