

## 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


### MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4.3 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       |
|-----------|--------------------------------------|-----------------------|--------------|---------------|
| GSD2004WS | GSD2004WS-E3-08 or GSD2004WS-E3-18   | Single                | B6           | Tape and reel |
|           | GSD2004WS-HE3-08 or GSD2004WS-HE3-18 |                       |              |               |

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , 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   |
| Peak repetitive forward current     |                       | $I_{FRM}$ | 625   | mA   |
| Non-repetitive peak forward current | $t_p = 1 \mu\text{s}$ | $I_{FSM}$ | 4     | A    |
|                                     | $t_p = 1 \text{ s}$   | $I_{FSM}$ | 1     | A    |
| Power dissipation <sup>(1)</sup>    |                       | $P_{tot}$ | 200   | mW   |

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

| PARAMETER                                                         | TEST CONDITION | SYMBOL     | VALUE       | UNIT               |
|-------------------------------------------------------------------|----------------|------------|-------------|--------------------|
| Typical thermal resistance junction to ambient air <sup>(1)</sup> |                | $R_{thJA}$ | 650         | 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                                                                                   | $I_F = 20\text{ mA}$                                                   | $V_F$    |      | 0.83 | 0.87 | V             |
|                                                                                                   | $I_F = 100\text{ mA}$                                                  | $V_F$    |      |      | 1    | 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            |

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

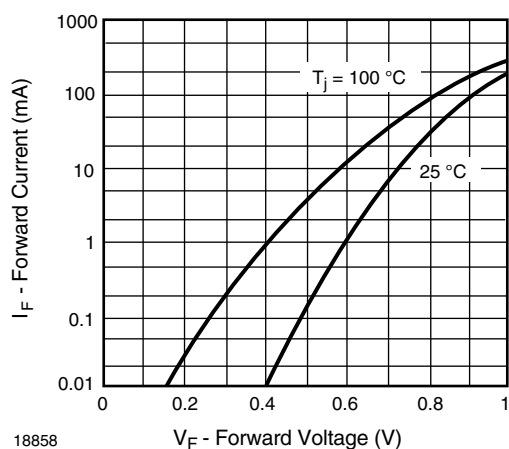


Fig. 1 - Forward Current vs. Forward Voltage

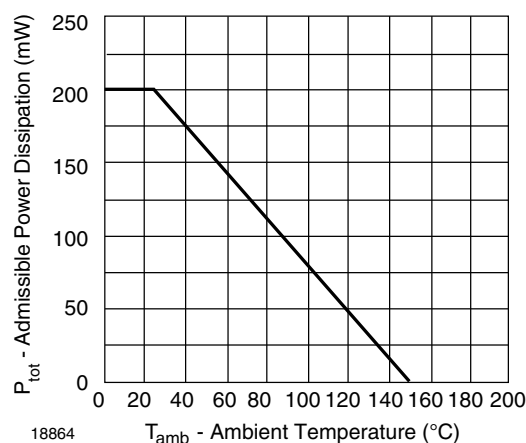


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

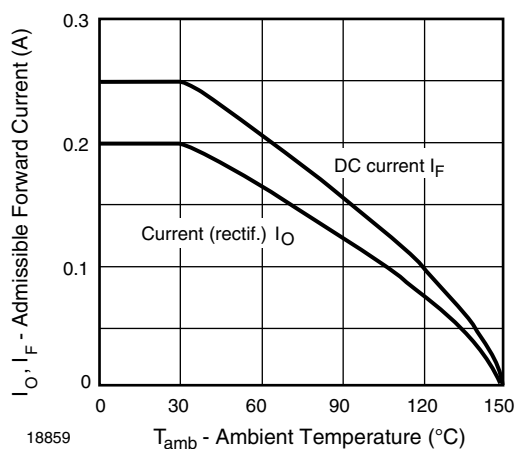


Fig. 2 - Admissible Forward Current vs. Ambient Temperature

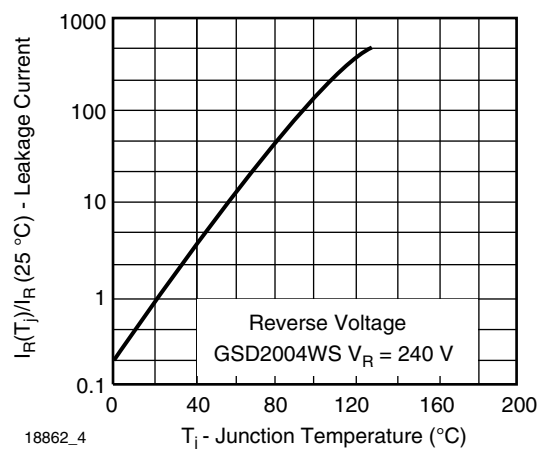


Fig. 4 - Leakage Current vs. Junction Temperature

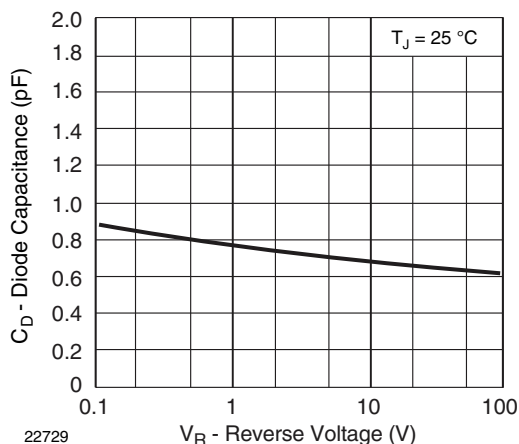
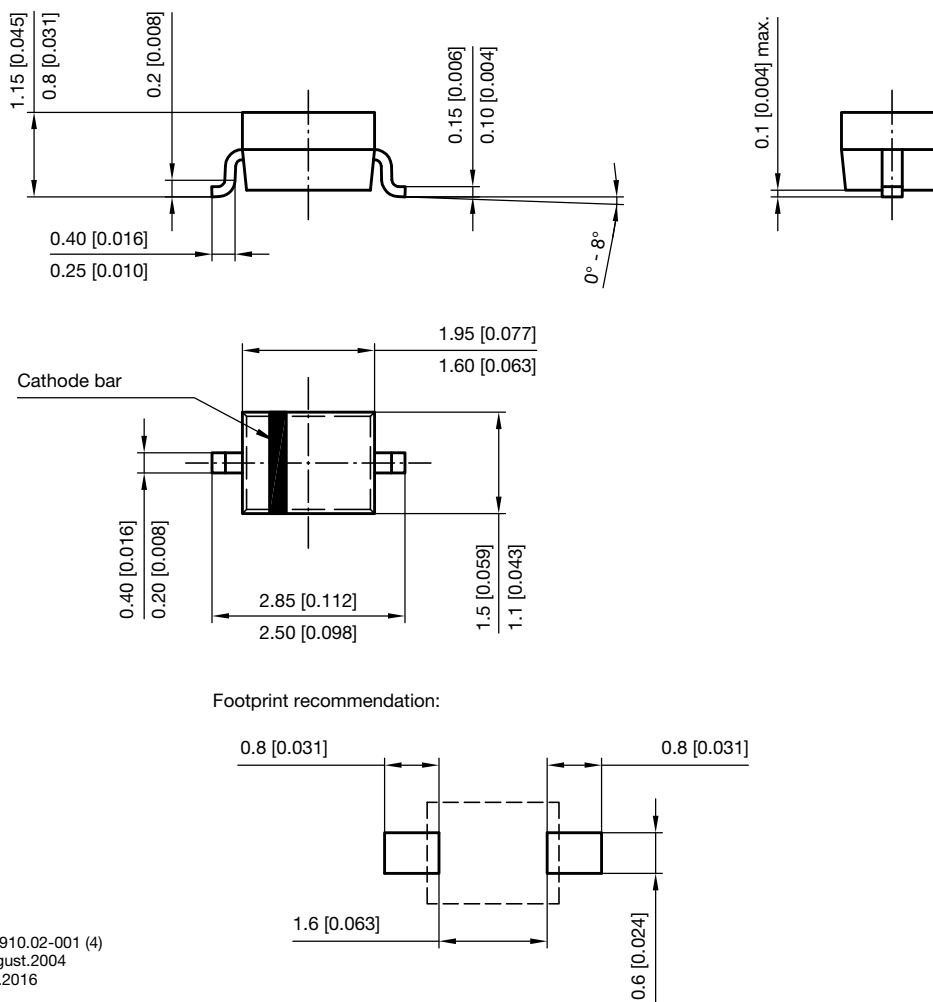


Fig. 5 - Capacitance vs. Reverse Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**


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 17443



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