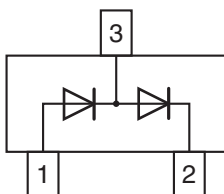


# Dual In-Series Small Signal High Voltage Switching Diode



## FEATURES

- Silicon epitaxial planar diode
- Fast switching dual in-series 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:** SOT-23

**Weight:** approx. 8.8 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       |
|----------|------------------------------------|-----------------------|--------------|---------------|
| GSD2004S | GSD2004S-E3-08 or GSD2004S-E3-18   | Dual serial           | DB6          | Tape and reel |
|          | GSD2004S-HE3-08 or GSD2004S-HE3-18 |                       |              |               |

## ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                           | TEST CONDITION        | SYMBOL           | VALUE | UNIT |
|-------------------------------------|-----------------------|------------------|-------|------|
| Continuous reverse voltage          |                       | V <sub>R</sub>   | 240   | V    |
| Peak repetitive reverse voltage     |                       | V <sub>RRM</sub> | 300   | V    |
| Forward current (continuous)        |                       | I <sub>F</sub>   | 225   | mA   |
| Peak repetitive forward current     |                       | I <sub>FRM</sub> | 625   | mA   |
| Non-repetitive peak forward current | t <sub>p</sub> = 1 μs | I <sub>FSM</sub> | 4.0   | A    |
|                                     | t <sub>p</sub> = 1 s  | I <sub>FSM</sub> | 1.0   | A    |
| Power dissipation <sup>(1)</sup>    |                       | P <sub>tot</sub> | 350   | mW   |

## THERMAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                                                         | TEST CONDITION | SYMBOL            | VALUE       | UNIT |
|-------------------------------------------------------------------|----------------|-------------------|-------------|------|
| Typical thermal resistance junction to ambient air <sup>(1)</sup> |                | R <sub>thJA</sub> | 357         | °C/W |
| Junction temperature                                              |                | T <sub>j</sub>    | 150         | °C   |
| Storage temperature range                                         |                | T <sub>stg</sub>  | -65 to +150 | °C   |
| Operating temperature range                                       |                | T <sub>op</sub>   | -55 to +150 | °C   |

### Note

<sup>(1)</sup> Device on fiberglass substrate

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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             |
|                                                                                                          | $I_F = 100\text{ mA}$                                                    | $V_F$    |      |      | 1.00 | V             |
| Diode capacitance                                                                                        | $V_F = V_R = 0, f = 1\text{ MHz}$                                        | $C_D$    |      |      | 5.0  | pF            |
| Reverse recovery time                                                                                    | $I_F = I_R = 30\text{ mA}, i_R = 3.0\text{ mA}, R_L = 100\text{ }\Omega$ | $t_{rr}$ |      |      | 50   | ns            |

**Note**

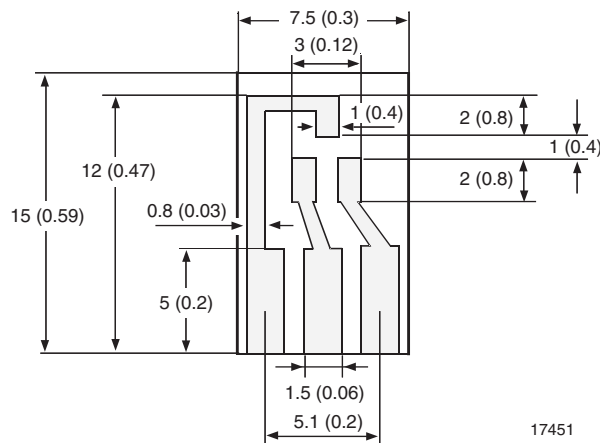
(1) Device on fiberglass substrate

**LAYOUT FOR  $R_{thJA}$  TEST**

Thickness:

Fiberglass 1.5 mm (0.059 inches)

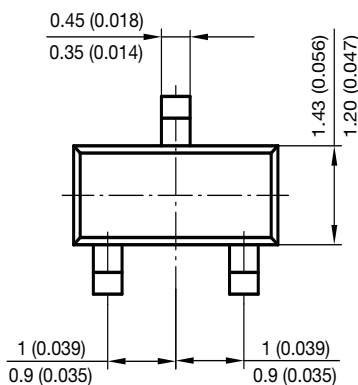
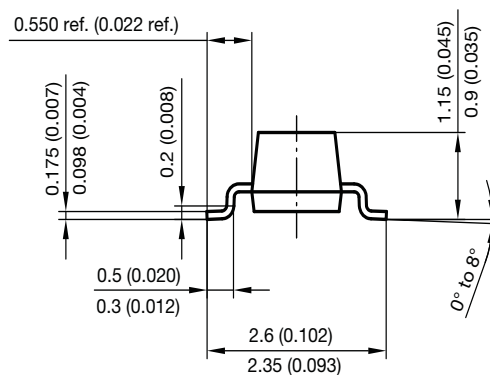
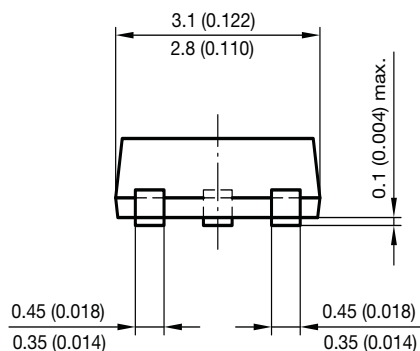
Copper leads 0.3 mm (0.012 inches)



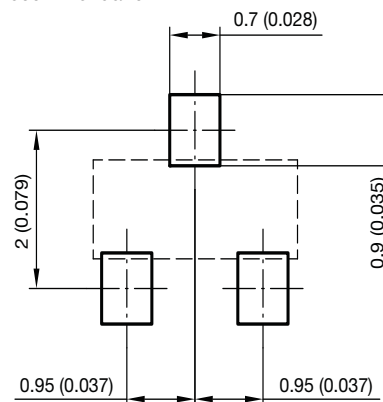
17451



**PACKAGE DIMENSIONS** in millimeters (inches): **SOT-23**



Foot print recommendation:



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17418



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