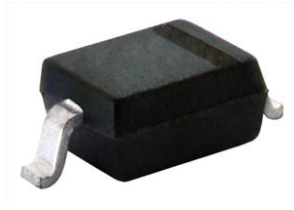


## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diodes
- AEC-Q101 qualified
- 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)



### 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                      | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS       |
| 1N4448WS    | 1N4448WS-E3-08 or 1N4448WS-E3-18   | Single diode          | A3           | Tape and reel |
|             | 1N4448WS-HE3-08 or 1N4448WS-HE3-18 |                       |              |               |

| ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |   |             |       |      |
|---|---|-------------|-------|------|
| PARAMETER   | TEST CONDITION  | SYMBOL      | VALUE | UNIT |
| Reverse voltage   |   | $V_R$       | 75    | V    |
| Repetitive peak reverse voltage   |   | $V_{RRM}$   | 100   | V    |
| Average rectified current half wave rectification with resistive load <sup>(1)</sup>            | $f \geq 50\text{ Hz}$                                   | $I_{F(AV)}$ | 150   | mA   |
| Surge forward current   | $t < 1\text{ s}$ and $T_j = 25\text{ }^{\circ}\text{C}$ | $I_{FSM}$   | 350   | mA   |
| Power dissipation <sup>(1)</sup>  |   | $P_{tot}$   | 200   | mW   |

| THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                |            |               |                    |
|--|----------------|------------|---------------|--------------------|
| PARAMETER  | TEST CONDITION | SYMBOL     | VALUE         | UNIT               |
| 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 <sub>amb</sub> = 25 °C, unless otherwise specified) |   |                 |       |      |       |      |
|---|---|-----------------|-------|------|-------|------|
| PARAMETER   | TEST CONDITION  | SYMBOL          | MIN.  | TYP. | MAX.  | UNIT |
| Forward voltage   | I <sub>F</sub> = 5 mA   | V <sub>F</sub>  | 0.620 |      | 0.720 | V    |
|   | I <sub>F</sub> = 100 mA   | V <sub>F</sub>  |       |      | 1     | V    |
| Leakage current   | V <sub>R</sub> = 20 V   | I <sub>R</sub>  |       |      | 25    | nA   |
|   | V <sub>R</sub> = 75 V   | I <sub>R</sub>  |       |      | 5     | μA   |
|   | V <sub>R</sub> = 20 V, T <sub>j</sub> = 150 °C  | I <sub>R</sub>  |       |      | 50    | μA   |
| Diode capacitance   | V <sub>F</sub> = V <sub>R</sub> = 0 V   | C <sub>D</sub>  |       |      | 4     | pF   |
| Reverse recovery time   | I <sub>F</sub> = 10 mA, I <sub>R</sub> = 1 mA, V <sub>R</sub> = 6 V, R <sub>L</sub> = 100 Ω | t <sub>rr</sub> |       |      | 4     | ns   |

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



Fig. 1 - Forward Characteristics



Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

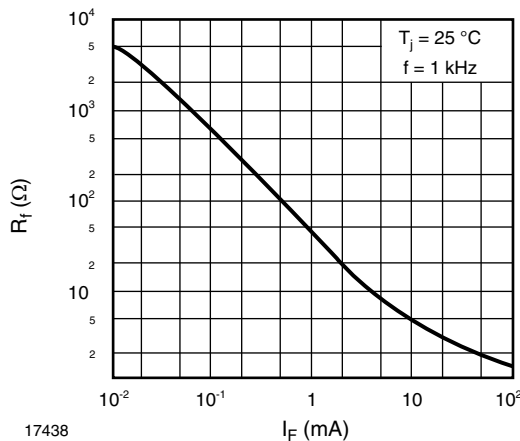


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

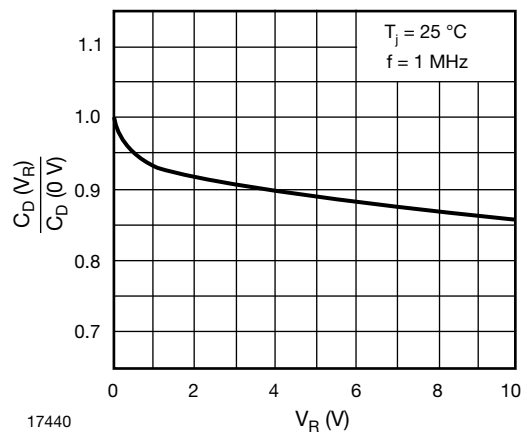


Fig. 4 - Relative Capacitance vs. Reverse Voltage

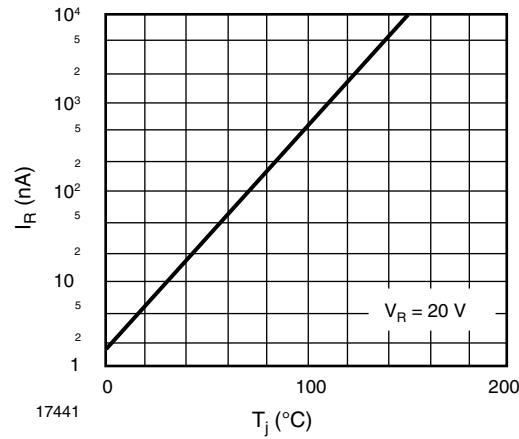


Fig. 5 - Leakage Current vs. Junction Temperature

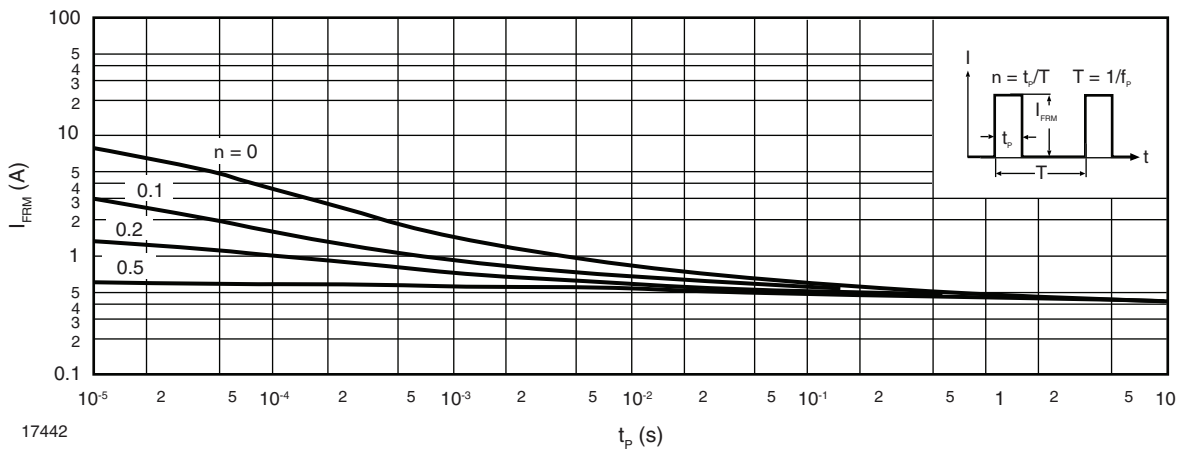
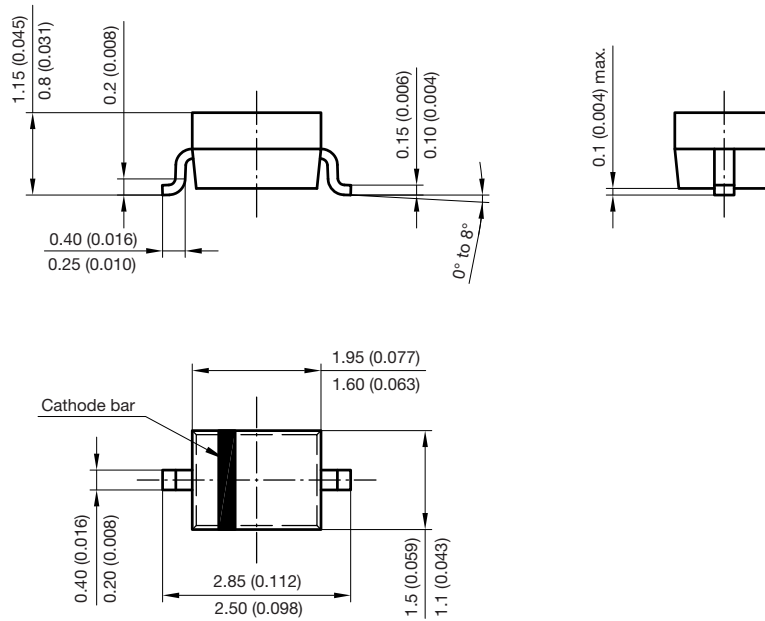


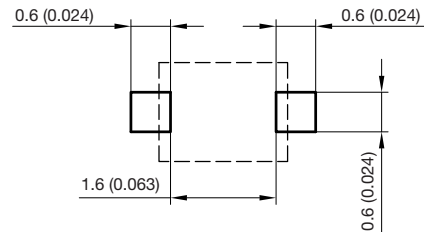
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



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



Foot print recommendation:



Document no.:S8-V-3910.02-001 (4)  
 Created - Date: 24.August.2004  
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 17443



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