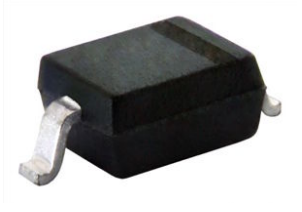


Small Signal Fast Switching Diode



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- AEC-Q101 qualified
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization:


RoHS
COMPLIANT

For definitions of compliance please see 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 |
| 1N4151WS | 1N4151WS-E3-08 or 1N4151WS-E3-18 | Single diode | A5 | Tape and reel |
| | 1N4151WS-HE3-08 or 1N4151WS-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 | 50 | V |
| Repetitive peak reverse voltage | | V_{RRM} | 75 | V |
| Average rectified current half wave rectification with resistive load ⁽¹⁾ | $f \geq 50\text{ Hz}$ | $I_{F(AV)}$ | 150 | mA |
| Surge current | $t < 1\text{ s}$ and $T_j = 25\text{ }^{\circ}\text{C}$ | I_{FSM} | 500 | mA |
| Power dissipation ⁽¹⁾ | | 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 ⁽¹⁾ | | 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

⁽¹⁾ 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 |
| Forward voltage | $I_F = 50\text{ mA}$ | V_F | | | 1 | V |
| Leakage current | $V_R = 50\text{ V}$ | I_R | | | 50 | nA |
| | $V_R = 20\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$ | I_R | | | 50 | μA |
| Reverse breakdown voltage | $I_R = 5\text{ }\mu\text{A}$ (pulsed) | $V_{(BR)}$ | 75 | | | V |
| Capacitance | $V_F = V_R = 0\text{ V}$ | | | | 2 | pF |
| Reverse recovery time | $I_F = 10\text{ mA}, I_R = 10\text{ mA}$ $i_R = 1\text{ mA}$ | t_{rr} | | | 4 | ns |
| | $I_F = 10\text{ mA}, i_R = 1\text{ mA},$ $V_R = 6\text{ V}, R_L = 100\text{ }\Omega$ | t_{rr} | | | 2 | ns |

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



Fig. 1 - Forward Current vs. Forward Voltage

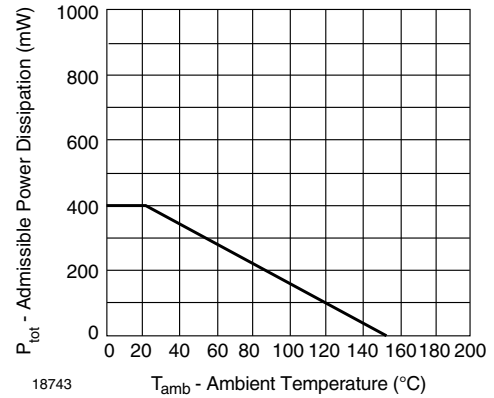


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

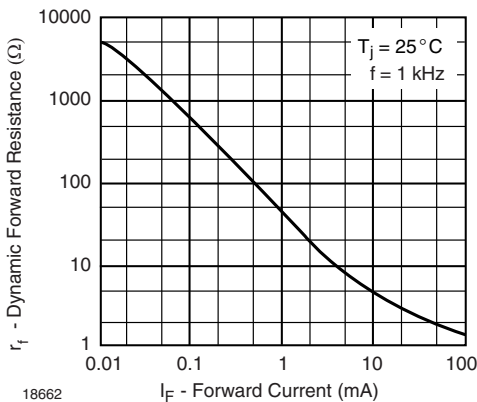


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

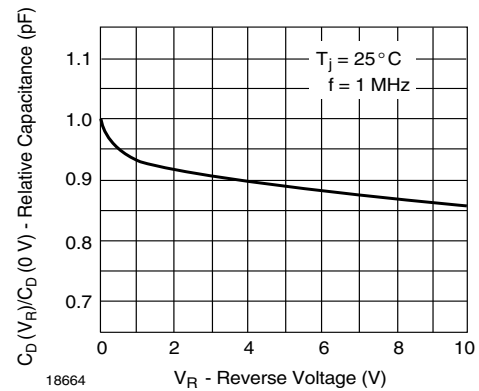


Fig. 4 - Relative Capacitance vs. Reverse Voltage



Fig. 5 - Leakage Current vs. Junction Temperature

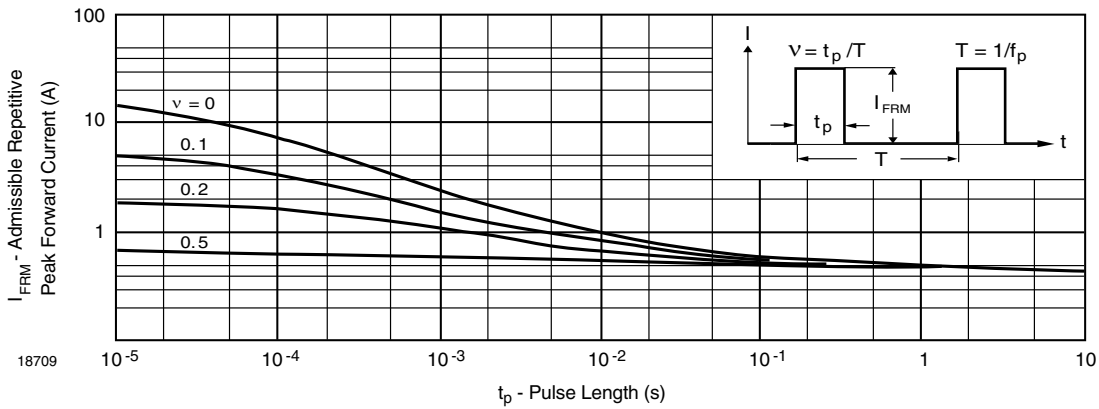
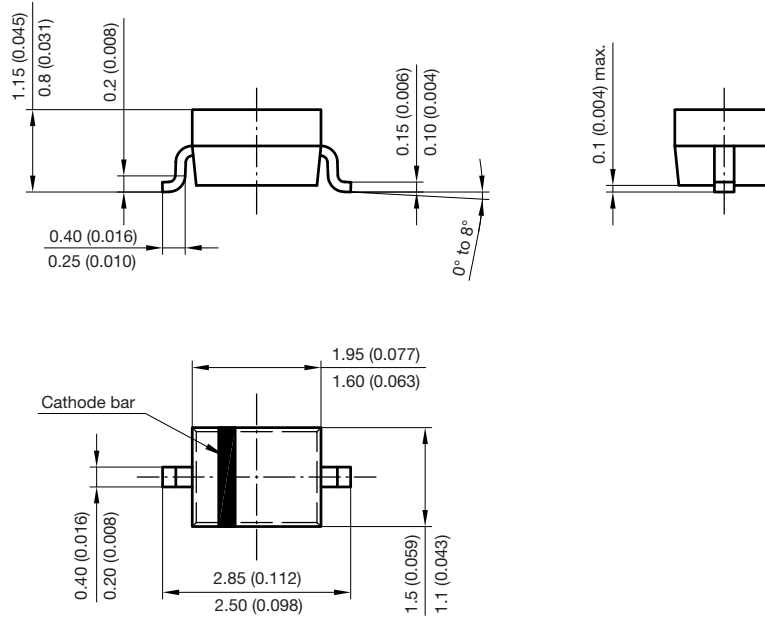


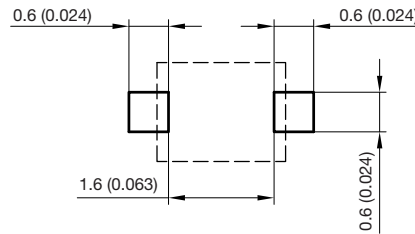
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



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



Foot print recommendation:



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 Created - Date: 24.August.2004
 Rev. 5 - Date: 23.Sept.2009
 17443



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