

Small Signal Schottky Diode



MECHANICAL DATA

Case: DO-35

Weight: approx. 125 mg

Cathode band color: Black

Packaging codes/options:

TR/10K per 13" reel (52 mm tape), 50K/box

TAP/10K per ammpack (52 mm tape), 50K/box

FEATURES

- For general purpose applications
- This diode features very low turn-on voltage and fast switching. This device is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- This diode is also available in the SOD-123 case with type designation BAT46W-V and in the MiniMELF case with type designations LL46
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

| PARTS TABLE | | | | |
|-------------|-----------------------|-----------------------|--------------|-----------------------|
| PART | ORDERING CODE | INTERNAL CONSTRUCTION | TYPE MARKING | REMARKS |
| BAT46 | BAT46-TR or BAT46-TAP | Single diode | BAT46 | Tape and reel/ammpack |

| ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | |
|---|--|-----------|-------|------|--|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT | |
| Repetitive peak reverse voltage | | V_{RRM} | 100 | V | |
| Forward continuous current ⁽¹⁾ | | I_F | 150 | mA | |
| Repetitive peak forward current ⁽¹⁾ | $t_p < 1\text{ s}, \delta < 0.5$ | I_{FRM} | 350 | mA | |
| Surge forward current ⁽¹⁾ | $t_p < 10\text{ ms}$ | I_{FSM} | 750 | mA | |
| Power dissipation ⁽¹⁾ | $T_{amb} = 80\text{ }^{\circ}\text{C}$ | P_{tot} | 150 | mW | |

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

| THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | |
|--|--|------------|---------------|--------------------|--|
| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT | |
| Thermal resistance junction to ambient air | Valid provided that electrodes are kept at ambient temperature | R_{thJA} | 300 | K/W | |
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ | |
| Ambient operating temperature range | | T_{amb} | - 65 to + 125 | $^{\circ}\text{C}$ | |
| Storage temperature range | | T_{stg} | - 65 to + 150 | $^{\circ}\text{C}$ | |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) | | | | | | |
|--|--|------------|------|------|------|---------------|
| PARAMETER | TEST CONDITION | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage | $I_R = 100\text{ }\mu\text{A}$ (pulsed) | $V_{(BR)}$ | 100 | | | V |
| Leakage current ⁽¹⁾ | $V_R = 1.5\text{ V}$ | I_R | | | 0.5 | μA |
| | $V_R = 1.5\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$ | I_R | | | 5 | μA |
| | $V_R = 10\text{ V}$ | I_R | | | 0.8 | μA |
| | $V_R = 10\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$ | I_R | | | 7.5 | μA |
| | $V_R = 50\text{ V}$ | I_R | | | 2 | μA |
| | $V_R = 50\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$ | I_R | | | 15 | μA |
| | $V_R = 75\text{ V}$ | I_R | | | 5 | μA |
| Forward voltage ⁽¹⁾ | $I_F = 0.1\text{ mA}$ | V_F | | | 250 | mV |
| | $I_F = 10\text{ mA}$ | V_F | | | 450 | mV |
| | $I_F = 250\text{ mA}$ | V_F | | | 1000 | mV |
| Diode capacitance | $V_R = 0\text{ V}, f = 1\text{ MHz}$ | C_D | | 10 | | pF |
| | $V_R = 1\text{ V}, f = 1\text{ MHz}$ | C_D | | 6 | | pF |

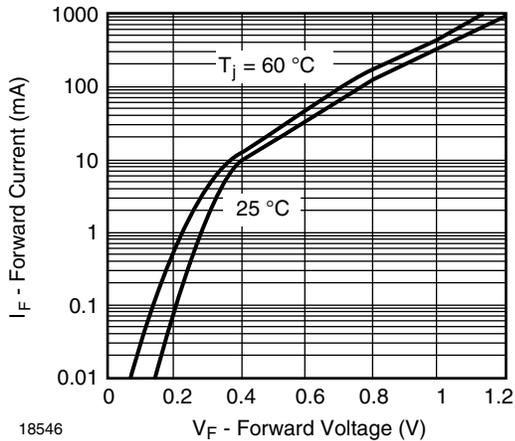
Note
⁽¹⁾ Pulse test; $t_p \leq 300\text{ }\mu\text{s}$, $\delta < 2\%$
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Typical Instantaneous Forward Characteristics

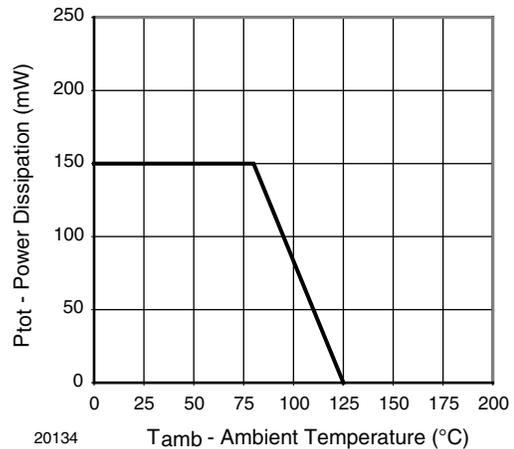


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

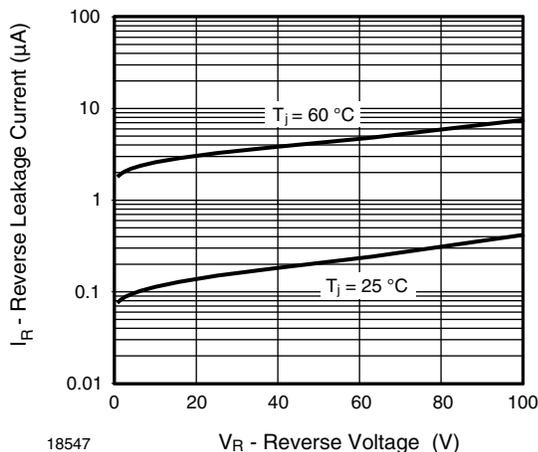
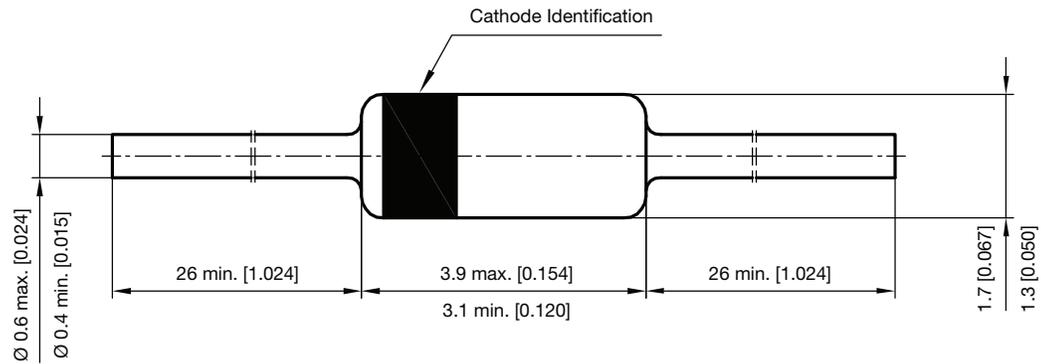


Fig. 2 - Typical Reverse Characteristics

PACKAGE DIMENSIONS in millimeters (inches): **DO-35**



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 94 9366



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