

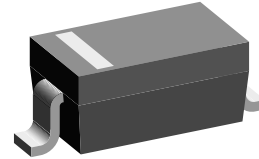
Small Signal Schottky Diode

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 DO-35 case with the type designation BAT46 and in the MiniMELF case with the type designation LL46.
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT



17431

Mechanical Data

Case: SOD-123

Weight: approx. 10.3 mg

Packaging Codes/Options:

GS18/10 k per 13" reel (8 mm tape), 10 k/box

GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

| Part | Ordering code | Type Marking | Remarks |
|----------|--------------------------------|--------------|---------------|
| BAT46W-V | BAT46W-V-GS18 or BAT46W-V-GS08 | L6 | Tape and Reel |

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 | | I_F | 150 ¹⁾ | mA |
| Repetitive peak forward current | $t_p < 1\text{ s}, \delta < 0.5$ | I_{FRM} | 350 ¹⁾ | mA |
| Surge forward current | $t_p < 10\text{ ms}$ | I_{FSM} | 750 ¹⁾ | mA |
| Power dissipation ¹⁾ | $T_{amb} = 65\text{ }^{\circ}\text{C}$ | P_{tot} | 150 ¹⁾ | mW |

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 | | R_{thJA} | 300 ¹⁾ | K/W |
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ |
| Ambient operating temperature range | | T_{amb} | - 55 to + 125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | - 55 to + 150 | $^{\circ}\text{C}$ |

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 |
|-------------------------------|--|------------|-----|------|------|---------------|
| Reverse breakdown voltage | $I_R = 100\text{ }\mu\text{A}$ (pulsed) | $V_{(BR)}$ | 100 | | | V |
| Leakage current ²⁾ | $V_R = 1.5\text{ V}$ | 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 ²⁾ | $I_F = 0.1\text{ mA}$ | 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 |

²⁾ Pulse test $t_p < 300\text{ }\mu\text{s}$, $\delta < 2\%$

Typical Characteristics

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

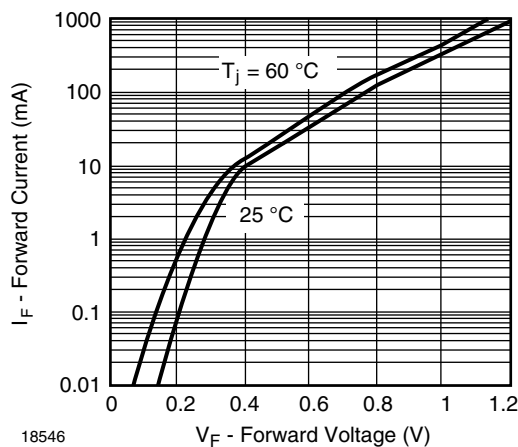


Figure 1. Typical Instantaneous Forward Characteristics

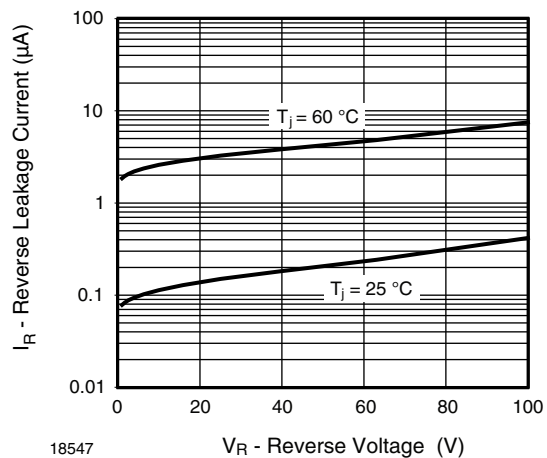


Figure 2. Typical Reverse Characteristics

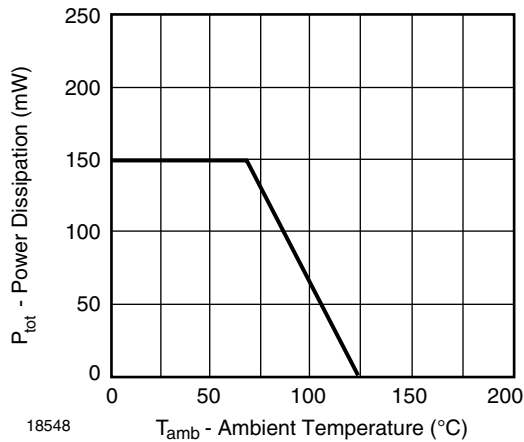
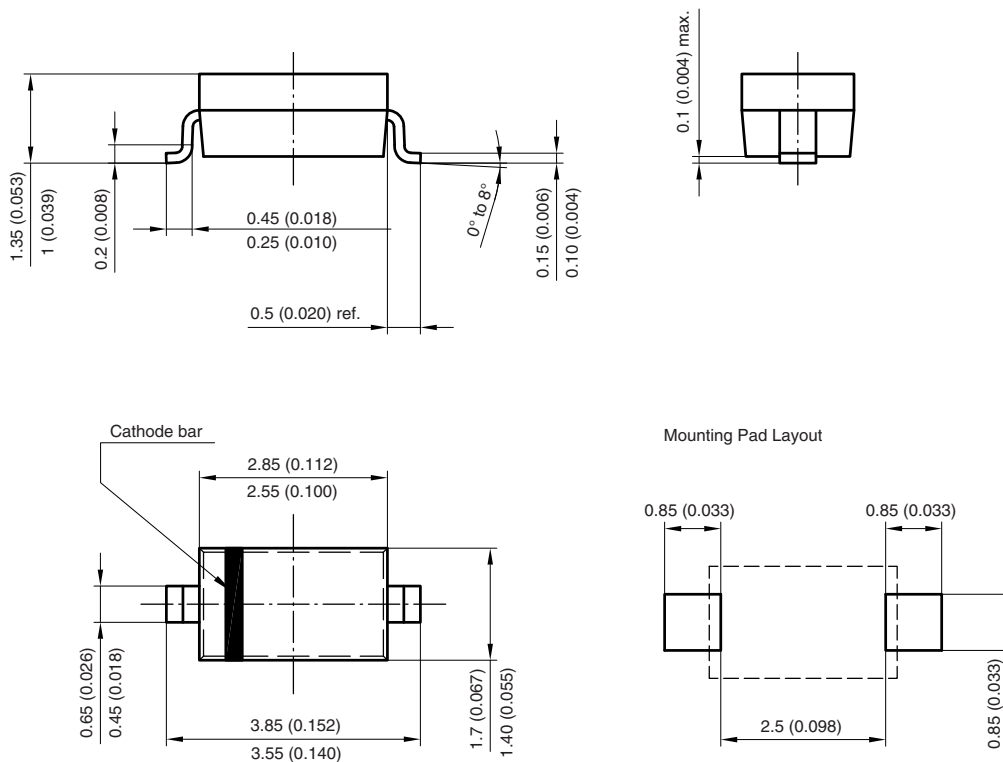


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

Package Dimensions in millimeters (inches): SOD-123



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