

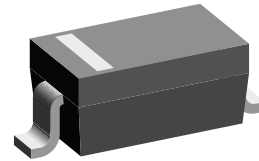
## Small Signal Schottky Diode

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

<sup>1)</sup> 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 <sup>1)</sup>	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	$^{\circ}\text{C}$

<sup>1)</sup> 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 <sup>2)</sup>	$V_R = 1.5\text{ V}$	$I_R$			0.5	$\mu\text{A}$
	$V_R = 1.5\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	$I_R$			5	$\mu\text{A}$
	$V_R = 10\text{ V}$	$I_R$			0.8	$\mu\text{A}$
	$V_R = 10\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	$I_R$			7.5	$\mu\text{A}$
	$V_R = 50\text{ V}$	$I_R$			2	$\mu\text{A}$
	$V_R = 50\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	$I_R$			15	$\mu\text{A}$
	$V_R = 75\text{ V}$	$I_R$			5	$\mu\text{A}$
Forward voltage <sup>2)</sup>	$I_F = 0.1\text{ mA}$	$V_F$			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

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

### Typical Characteristics

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

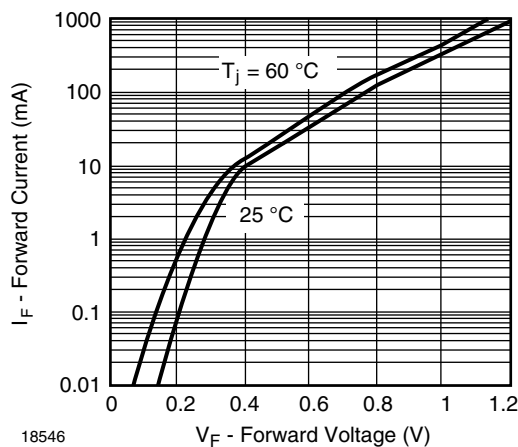


Figure 1. Typical Instantaneous Forward Characteristics

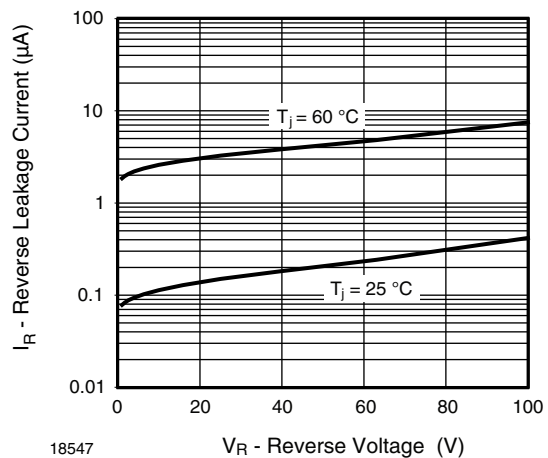


Figure 2. Typical Reverse Characteristics

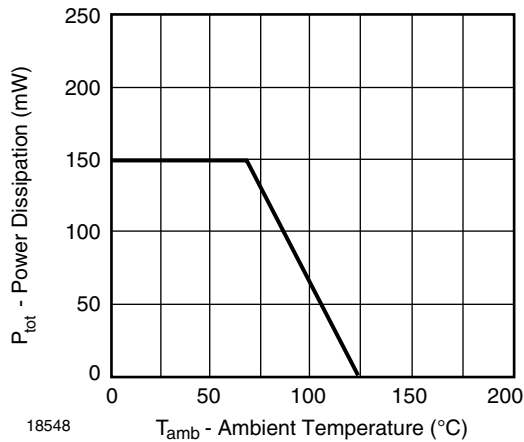
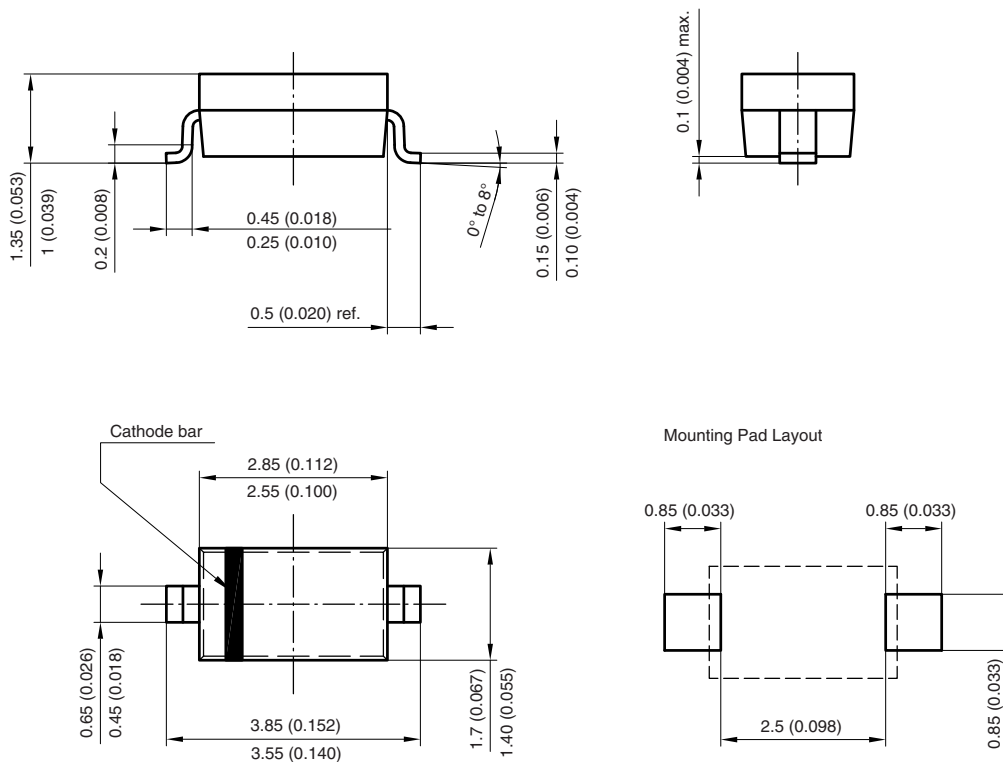


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

## Package Dimensions in millimeters (inches): SOD-123



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 17432



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