

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

BAT46W-V



Vishay Semiconductors

Thermal Characteristics

$T_{amb} = 25\text{ °C}$, 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	°C
Ambient operating temperature range		T_{amb}	- 55 to + 125	°C
Storage temperature range		T_{stg}	- 55 to + 150	°C

¹⁾ Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

$T_{amb} = 25\text{ °C}$, 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
	$V_R = 1.5\text{ V}, T_j = 60\text{ °C}$	I_R			5	μA
	$V_R = 10\text{ V}$	I_R			0.8	μA
	$V_R = 10\text{ V}, T_j = 60\text{ °C}$	I_R			7.5	μA
	$V_R = 50\text{ V}$	I_R			2	μA
	$V_R = 50\text{ V}, T_j = 60\text{ °C}$	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

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

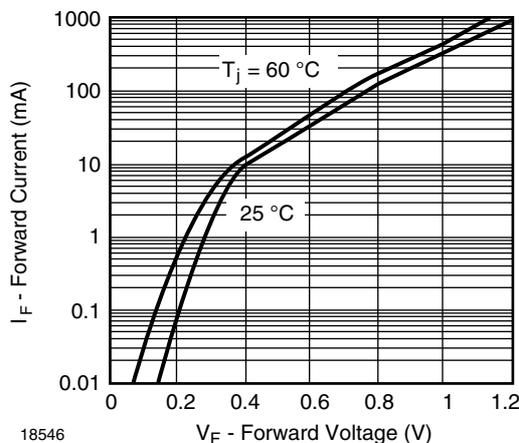


Figure 1. Typical Instantaneous Forward Characteristics

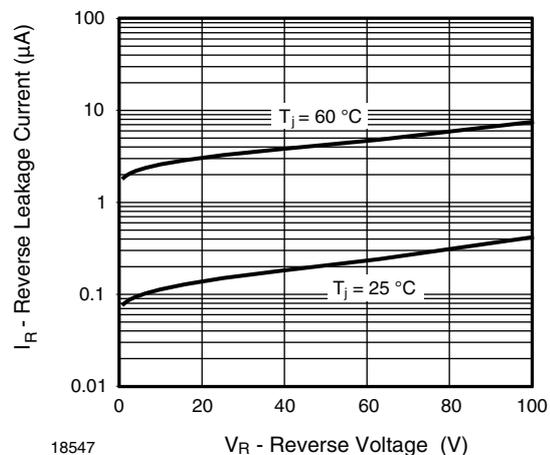


Figure 2. Typical Reverse Characteristics

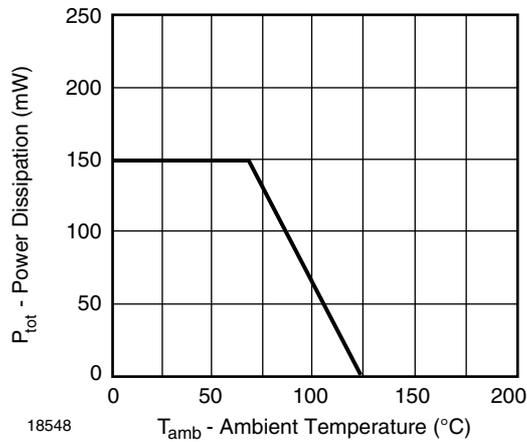
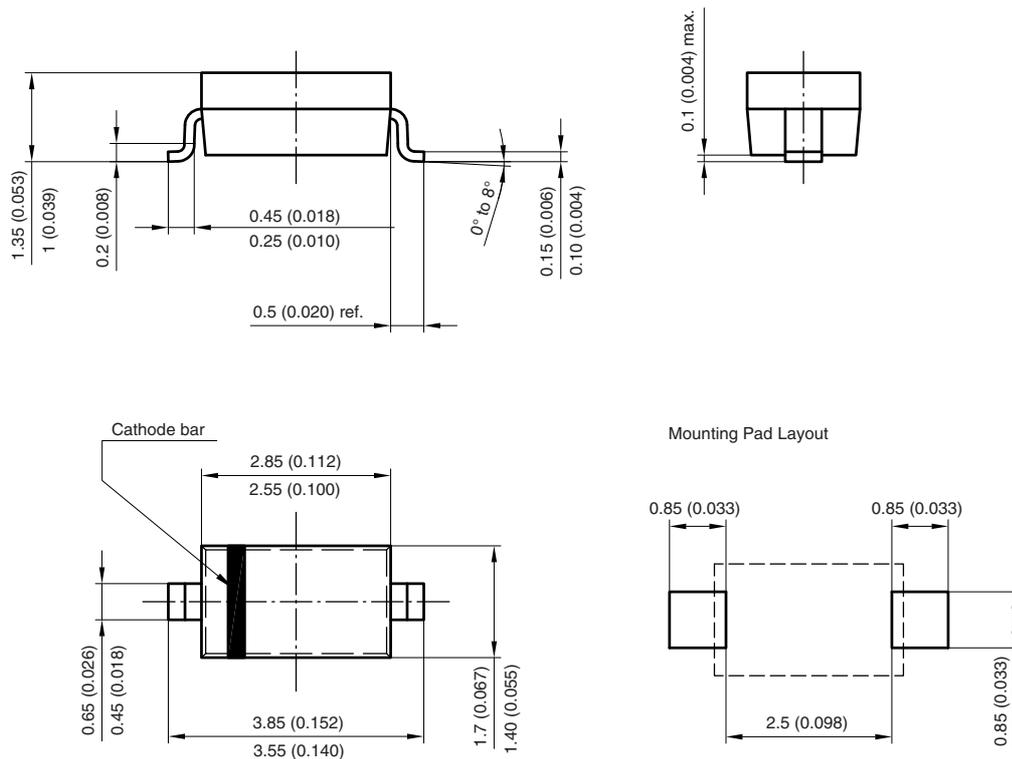


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

Package Dimensions in millimeters (inches): SOD-123



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 17432



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