

Vishay Semiconductors



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

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 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit	
Repetitive peak reverse voltage		V _{RRM}	100	V	
Forward continuous current		١ _F	150 ¹⁾	mA	
Repetitive peak forward current	t _p < 1 s, δ < 0.5	I _{FRM}	350 ¹⁾	mA	
Surge forward current	t _p < 10 ms	I _{FSM}	750 ¹⁾	mA	
Power dissipation ¹⁾	T _{amb} = 65 °C	P _{tot}	150 ¹⁾	mW	

¹⁾ Valid provided that electrodes are kept at ambient temperature



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Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R _{thJA}	300 ¹⁾	K/W
Junction temperature		Tj	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

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

Parameter	Test condition	Symbol	Min	Тур.	Max	Unit
Reverse breakdown voltage	$I_R = 100 \ \mu A \ (pulsed)$	V _(BR)	100			V
Leakage current ²⁾	V _R = 1.5 V	I _R			0.5	μA
	V _R = 1.5 V, T _j = 60 °C	I _R			5	μA
	V _R = 10 V	I _R			0.8	μA
	$V_R = 10 \text{ V}, \text{ T}_j = 60 ^\circ\text{C}$	I _R			7.5	μΑ
	V _R = 50 V	I _R			2	μΑ
	$V_R = 50 \text{ V}, \text{ T}_j = 60 ^\circ\text{C}$	I _R			15	μA
	V _R = 75 V	I _R			5	μA
	V _R = 75 V, T _j = 60 °C	I _R			20	μA
Forward voltage ²⁾	I _F = 0.1 mA	V _F			250	mV
	I _F = 10 mA	V _F			450	mV
	I _F = 250 mA	V _F			1000	mV
Diode capacitance	V _R = 0 V, f = 1 MHz	CD		10		pF
	V _R = 1 V, f = 1 MHz	CD		6		pF

²⁾ Pulse test t_p < 300 µs, δ < 2 %

Typical Characteristics

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

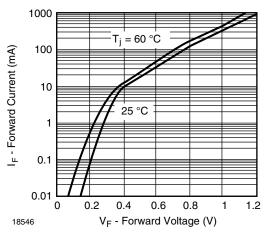
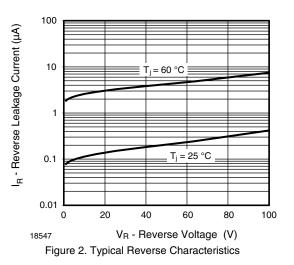


Figure 1. Typical Instantaneous Forward Characteristics



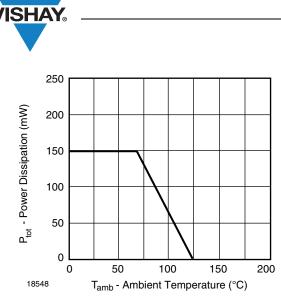
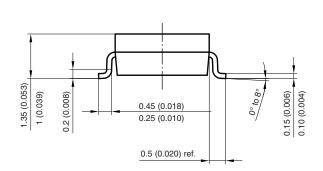
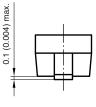


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

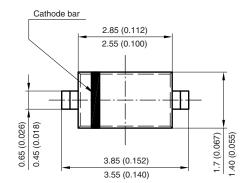
Package Dimensions in millimeters (inches): SOD-123



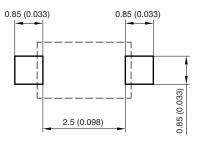


BAT46W-V

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Mounting Pad Layout



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