

## Small Signal Schottky Diode



### DESIGN SUPPORT TOOLS

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### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 9.4 mg

**Packaging codes/options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/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
- AEC-Q101 qualified available (part number on request)
- Base P/N-G3 - green commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc299912](http://www.vishay.com/doc299912)



### PARTS TABLE

PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAT46W-G	BAT46W-G3-08 or BAT46W-G3-18	Single	LH	Tape and reel

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		$V_{RRM}$	100	V
Forward continuous current <sup>(1)</sup>		$I_F$	150	mA
Repetitive peak forward current <sup>(1)</sup>	$t_p < 1\text{ s}, \delta < 0.5$	$I_{FRM}$	350	mA
Surge forward current <sup>(1)</sup>	$t_p < 10\text{ ms}$	$I_{FSM}$	750	mA
Power dissipation <sup>(1)</sup>	$T_{amb} = 65^{\circ}\text{C}$	$P_{tot}$	150	mW

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

### THERMAL CHARACTERISTICS ( $T_{amb} = 25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	300	K/W
Junction temperature		$T_j$	125	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +125	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-55 to +150	$^{\circ}\text{C}$

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , 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>(1)</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	$\mu\text{A}$
	$V_R = 75\text{ V}, T_j = 60\text{ }^{\circ}\text{C}$	$I_R$			20	$\mu\text{A}$
Forward voltage <sup>(1)</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

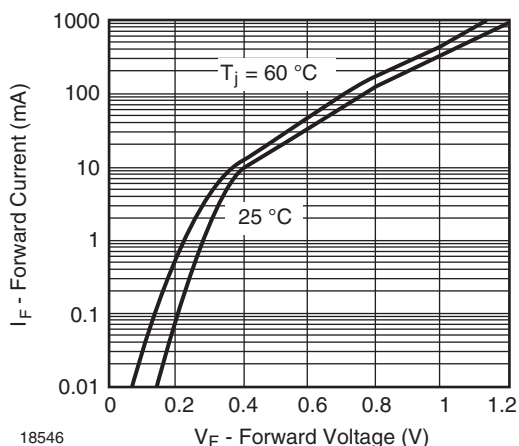
**Note**
<sup>(1)</sup> Pulse test;  $t_p \leq 300\text{ }\mu\text{s}$ ,  $\delta < 2\text{ }\%$ 
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Instantaneous Forward Characteristics

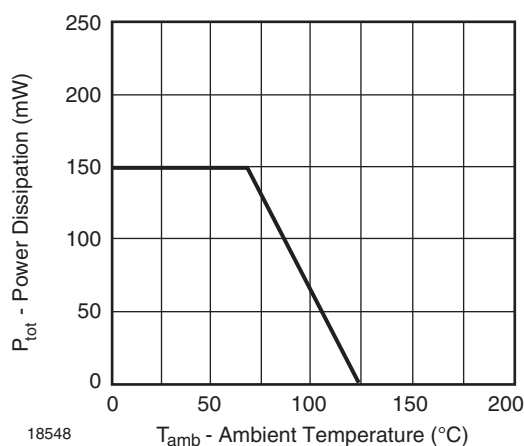


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

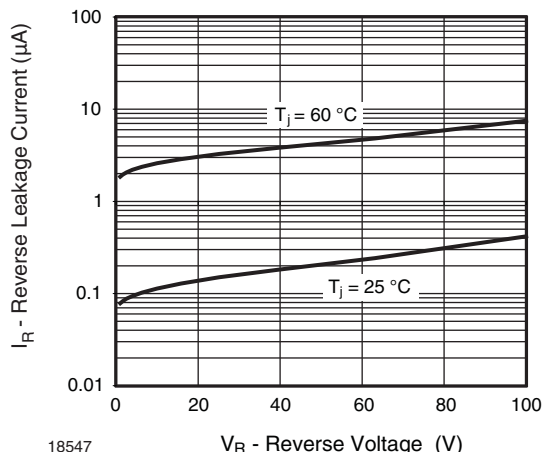
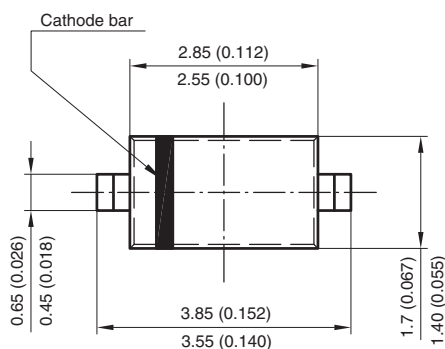
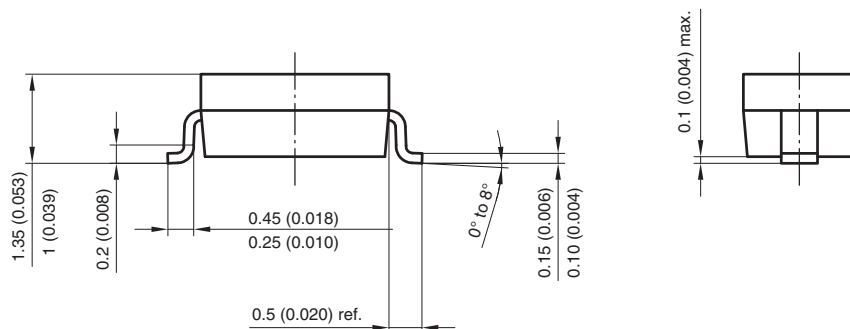


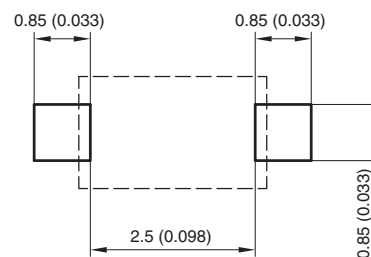
Fig. 2 - Typical Reverse Characteristics



**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**



Mounting Pad Layout



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17432



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