

Vishay Semiconductors

Small Signal Schottky Diode



DESIGN SUPPORT TOOLS

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MECHANICAL DATA

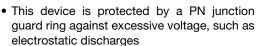
Case: SOD-123

Weight: approx. 10.3 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





- AEC-Q101 qualified available
- Base P/N-E3 RoHS-compliant, commercial grade
- Base P/N-HE3 RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912

PARTS TABLE					
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS	
BAT46W	BAT46W-E3-08 or BAT46W-E3-18	Singlo	L6	Tape and reel	
	BAT46W-HE3-08 or BAT46W-HE3-18	Single	LO		

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 (1)		I _F	150	mA	
Repetitive peak forward current (1)	$t_p < 1 \text{ s, } \delta < 0.5$	I _{FRM}	350	mA	
Surge forward current (1)	t _p < 10 ms	I _{FSM}	750	mA	
Power dissipation (1)	T _{amb} = 65 °C	P _{tot}	150	mW	

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air (1)		R _{thJA}	300	K/W	
Junction temperature		T _j	125	°C	
Operating temperature range		T _{op}	-55 to +125	°C	
Storage temperature range		T _{stg}	-55 to +150	°C	

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100 \mu A \text{ (pulsed)}$	V _(BR)	100			V
Leakage current (1)	V _R = 1.5 V	I _R			0.5	μΑ
	$V_R = 1.5 \text{ V}, T_j = 60 ^{\circ}\text{C}$	I _R			5	μΑ
	V _R = 10 V	I _R			0.8	μA
	$V_R = 10 \text{ V}, T_j = 60 ^{\circ}\text{C}$	I _R			7.5	μA
	V _R = 50 V	I _R			2	μA
	V _R = 50 V, T _j = 60 °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 (1)	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	C _D		10		pF
	V _R = 1 V, f = 1 MHz	C _D		6		pF

Note

TYPICAL CHARACTERISTICS ($T_{amb} = 25$ °C, unless otherwise specified)

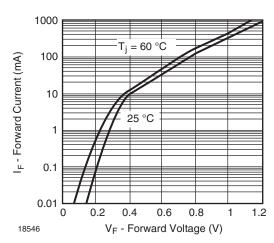


Fig. 1 - Typical Instantaneous Forward Characteristics

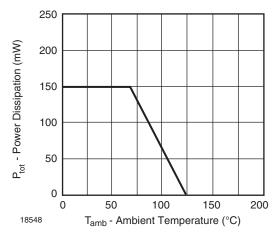


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

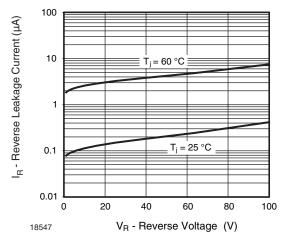


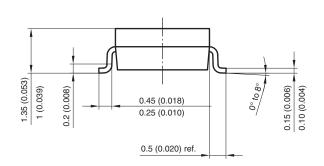
Fig. 2 - Typical Reverse Characteristics

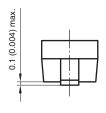
 $^{^{(1)}\,}$ Pulse test; $t_p \leq 300~\mu s,~\delta < 2~\%$



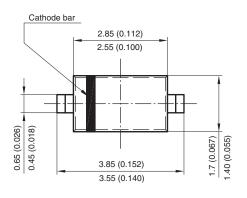
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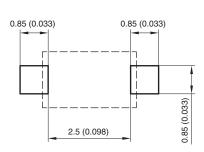
PACKAGE DIMENSIONS in millimeters (inches): SOD-123





Mounting Pad Layout





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