

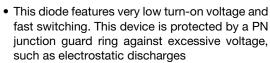
### Vishay Semiconductors

## **Small Signal Schottky Diode**



### **FEATURES**

For general purpose applications





 This diode is also available in the SOD-123 case with type designation BAT46W-V and in the MiniMELF case with type designations LL46

**HALOGEN** FREE

- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

#### **DESIGN SUPPORT TOOLS** click logo to get started



#### **MECHANICAL DATA**

Case: DO-35 (DO-204AH) Weight: approx. 125 mg Cathode band color: Black Packaging codes/options:

TR/10K per 13" reel (52 mm tape), 50K/box TAP/10K per ammopack (52 mm tape), 50K/box

PARTS TABLE						
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS		
BAT46	BAT46-TR or BAT46-TAP	Single	BAT46	Tape and reel/ammopack		

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Repetitive peak reverse voltage		$V_{RRM}$	100	V	
Forward continuous current (1)		I <sub>F</sub>	150	mA	
Repetitive peak forward current (1)	$t_p < 1 \text{ s, } \delta < 0.5$	I <sub>FRM</sub>	350	mA	
Surge forward current (1)	t <sub>p</sub> < 10 ms	I <sub>FSM</sub>	750	mA	
Power dissipation (1)	T <sub>amb</sub> = 80 °C	P <sub>tot</sub>	150	mW	

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

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air	Valid provided that electrodes are kept at ambient temperature	R <sub>thJA</sub>	300	K/W	
Junction temperature		Tj	125	°C	
Ambient operating temperature range		T <sub>amb</sub>	-65 to +125	°C	
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C	



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I <sub>R</sub> = 100 μA (pulsed)	V <sub>(BR)</sub>	100			V
	V <sub>R</sub> = 1.5 V	I <sub>R</sub>			0.5	μΑ
	$V_R = 1.5 \text{ V}, T_j = 60 ^{\circ}\text{C}$	I <sub>R</sub>			5	μΑ
	V <sub>R</sub> = 10 V	I <sub>R</sub>			0.8	μΑ
Leakage current <sup>(1)</sup>	$V_R = 10 \text{ V}, T_j = 60 ^{\circ}\text{C}$	I <sub>R</sub>			7.5	μΑ
Leakage current (*)	V <sub>R</sub> = 50 V	I <sub>R</sub>			2	μΑ
	$V_R = 50 \text{ V}, T_j = 60 ^{\circ}\text{C}$	I <sub>R</sub>			15	μΑ
	V <sub>R</sub> = 75 V	I <sub>R</sub>			5	μΑ
	V <sub>R</sub> = 75 V, T <sub>j</sub> = 60 °C	I <sub>R</sub>			20	μΑ
	I <sub>F</sub> = 0.1 mA	V <sub>F</sub>			250	mV
Forward voltage (1)	I <sub>F</sub> = 10 mA	V <sub>F</sub>			450	mV
	I <sub>F</sub> = 250 mA	V <sub>F</sub>			1000	mV
Diada canacitanas	V <sub>R</sub> = 0 V, f = 1 MHz	C <sub>D</sub>		10		pF
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	C <sub>D</sub>		6		pF

#### Note

#### TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

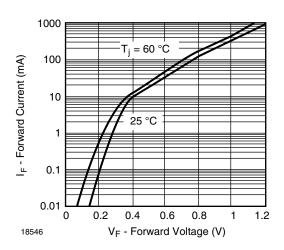


Fig. 1 - Typical Instantaneous Forward Characteristics

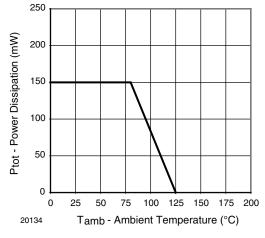


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

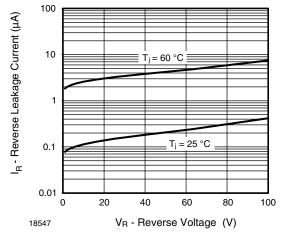


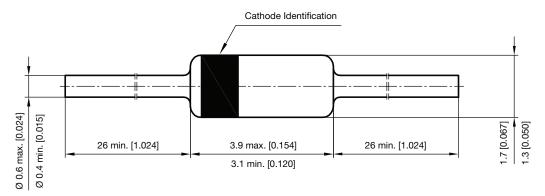
Fig. 2 - Typical Reverse Characteristics

<sup>&</sup>lt;sup>(1)</sup> Pulse test;  $t_p \le 300 \ \mu s$ , ,  $\delta < 2 \ \%$ 



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### PACKAGE DIMENSIONS in millimeters (inches): DO-35 (DO-204AH)



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