

## Vishay Semiconductors

# **Small Signal Schottky Diode**



### **LINKS TO ADDITIONAL RESOURCES**



### **MECHANICAL DATA**

Case: MiniMELF (SOD-80)
Weight: approx. 31 mg
Cathode band color: black
Packaging codes/options:

GS18/10K per 13" reel (8 mm tape), 10K/box GS08/2.5K per 7" reel (8 mm tape), 12.5K/box

### **FEATURES**





 This diode features low turn-on voltage and high break-down voltage. This device is protected by a PN junction guardring against excessive voltage, such as electrostatic discharges



- This diode is also available in the DO-35
   (DO-204AH) case with type designation BAT46 and in the SOD-123 case with type designation BAT46W-V
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

PARTS TABLE						
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS		
LL46	LL46-GS18 or LL46-GS08	Single	-	Tape and reel		

<b>ABSOLUTE MAXIMUM RATINGS</b> (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>	200	mW	

### Note

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

<b>THERMAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air (1)		R <sub>thJA</sub>	300	K/W	
Junction temperature		Tj	125	°C	
Ambient operating temperature range		T <sub>amb</sub>	-55 to +125	°C	
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C	

#### Note

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



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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 (1)	$V_R = 10 \text{ V}, T_j = 60 \text{ °C}$	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
	$V_R = 75 \text{ V}, T_j = 60 ^{\circ}\text{C}$	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	$V_{F}$			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		рF

### Note

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

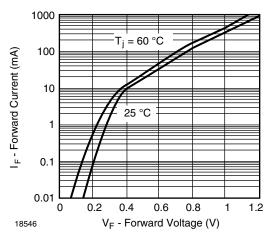


Fig. 1 - Typical Instantaneous Forward Characteristics

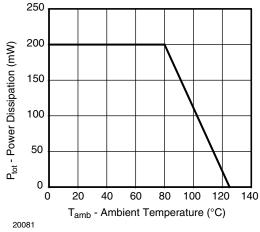


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

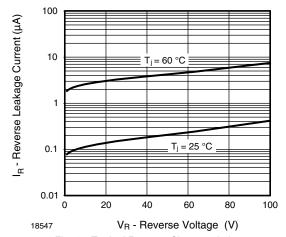


Fig. 2 - Typical Reverse Characteristics

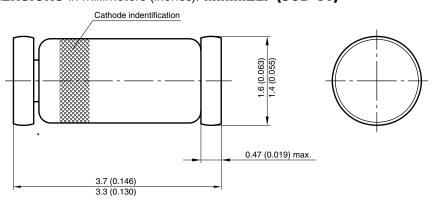
 $<sup>^{(1)}\,</sup>$  Pulse test  $t_p < 300~\mu s,~\delta < 2~\%$ 



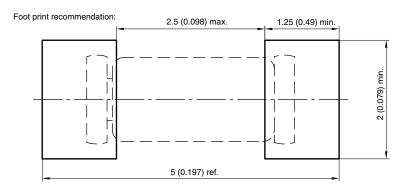
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## PACKAGE DIMENSIONS in millimeters (inches): MiniMELF (SOD-80)



<sup>\*</sup> The gap between plug and glass can be either on cathode or anode side



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