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# Vishay Semiconductors

# **Small Signal Schottky Diode**



### **LINKS TO ADDITIONAL RESOURCES**

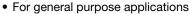


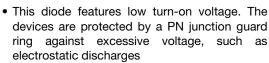
### **MECHANICAL DATA**

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**







RoHS

- Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications
- This diode is also available in a DO-35 case with type designation BAT86
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912">www.vishay.com/doc?99912</a>

### **APPLICATIONS**

Applications where a very low forward voltage is required

PARTS TABLE			
PART	ORDERING CODE	CIRCUIT CONFIGURATION	REMARKS
BAS86	BAS86-GS18 or BAS86-GS08	Single	Tape and reel

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Continuous reserve voltage		$V_R$	50	V	
Forward continuous current (1)		I <sub>F</sub>	200	mA	
Repetitive peak forward current (1)	$t_p < 1 \text{ s, } \delta \leq 0.5$	I <sub>FRM</sub>	500	mA	
Power dissipation (1)		P <sub>tot</sub>	200	mW	

### Note

<sup>(1)</sup> 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 (1)		R <sub>thJA</sub>	300	K/W	
Junction temperature		T <sub>j</sub>	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	

### 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
Reserve breakdown voltage	I <sub>R</sub> = 10 μA (pulsed)	V <sub>(BR)</sub>	50			V
Leakage current	V <sub>R</sub> = 40 V	I <sub>R</sub>			5	μA
	Pulse test $t_p$ < 300 $\mu$ s, $I_F$ = 0.1 mA, $\delta$ < 2 %	V <sub>F</sub>		200	300	mV
	Pulse test $t_p < 300~\mu s$ , $I_F = 1~mA$ , $\delta < 2~\%$	V <sub>F</sub>		275	380	mV
Forward voltage	Pulse test $t_p < 300~\mu s$ , $I_F = 10~m A$ , $\delta < 2~\%$	V <sub>F</sub>		365	450	mV
	Pulse test $t_p < 300~\mu s$ , $I_F = 30~m A$ , $\delta < 2~\%$	V <sub>F</sub>		460	600	mV
	Pulse test $t_p$ < 300 $\mu$ s, $I_F$ = 100 mA, $\delta$ < 2 %	V <sub>F</sub>		700	900	mV
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz	C <sub>D</sub>			8	pF
Reserve recovery time	$I_F = 10 \text{ mA}, I_R = 10 \text{ mA},$ $I_R = 1 \text{ mA}$	t <sub>rr</sub>			5	ns

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

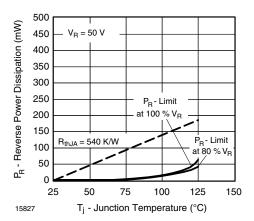


Fig. 1 - Max. Reverse Power Dissipation vs. Junction Temperature

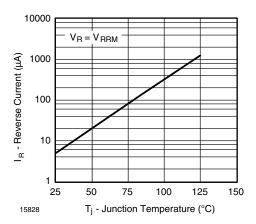


Fig. 2 - Reverse Current vs. Junction Temperature

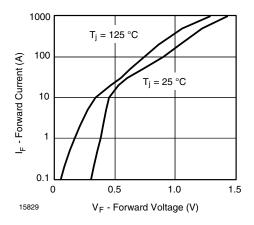


Fig. 3 - Forward Current vs. Forward Voltage

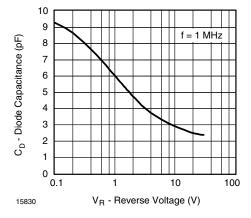
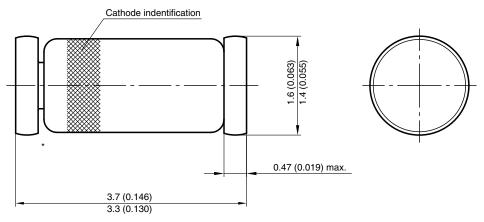


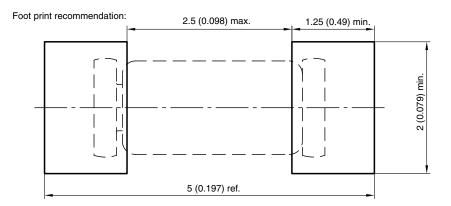
Fig. 4 - Diode Capacitance vs. Reverse Voltage

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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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