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## Vishay Semiconductors

# **Small Signal Schottky Diode**



### **LINKS TO ADDITIONAL RESOURCES**

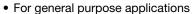


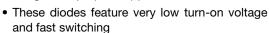
### **MECHANICAL DATA**

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**







• These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges



- These diodes are also available in the DO-35 (DO-204AH) case with type designations BAT42 to BAT43 and in the SOD-123 case with type designations BAT42W-V to BAT43W-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	REMARKS		
LL42	LL42-GS18 or LL42-GS08	Single	Tape and reel		
LL43	LL43-GS18 or LL43-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 <sub>RRM</sub>	30	V
Forward continuous current (1)		I <sub>F</sub>	200	mA
Repetitive peak forward current (1)	$t_p < 1 \text{ s, } \delta < 0.5$	I <sub>FRM</sub>	500	mA
Surge forward current (1)	t <sub>p</sub> = 10 ms	I <sub>FSM</sub>	4	А
Power dissipation (1)	T <sub>amb</sub> = 65 °C	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		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	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I <sub>R</sub> = 100 μA (pulsed)		V <sub>(BR)</sub>	30			V
Leakage current (1)	V <sub>R</sub> = 25 V		I <sub>R</sub>			0.5	μΑ
	V <sub>R</sub> = 25 V, T <sub>j</sub> = 100 °C		I <sub>R</sub>			100	μΑ
Forward voltage (1)	I <sub>F</sub> = 200 mA		$V_{F}$			1000	mV
	I <sub>F</sub> = 10 mA	LL42	$V_{F}$			400	mV
	I <sub>F</sub> = 50 mA	LL42	$V_{F}$			650	mV
	I <sub>F</sub> = 2 mA	LL43	$V_{F}$	260		330	mV
	I <sub>F</sub> = 15 mA	LL43	$V_{F}$			450	mV
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz		C <sub>D</sub>		7		pF
Reverse recovery time	$I_F = 10$ mA, $I_R = 10$ mA, $i_R = 1$ mA, $R_L = 100$ $\Omega$		t <sub>rr</sub>			5	ns
Rectification efficieny	$R_L = 15 \text{ k}\Omega, C_L = 300 \text{ pF, f} = 45 \text{ MHz, V}_{RF} = 2 \text{ V}$		$\eta_{v}$	80			%

#### Note

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

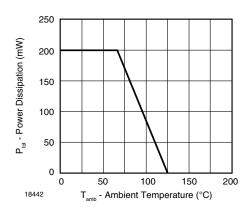


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

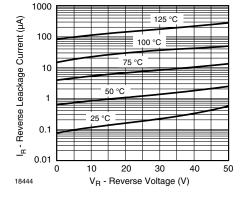


Fig. 3 - Typical Reverse Characteristics

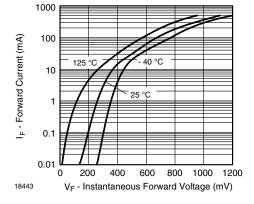


Fig. 2 - Typical Reverse Characteristics

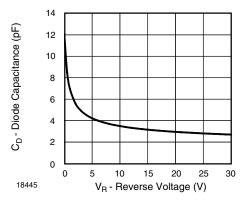


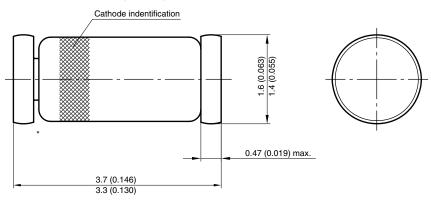
Fig. 4 - Typical Capacitance vs. Reverse Voltage

 $<sup>^{(1)}\,</sup>$  Pulse test  $t_p < 300~\mu s,~t_p/T < 0.02$ 

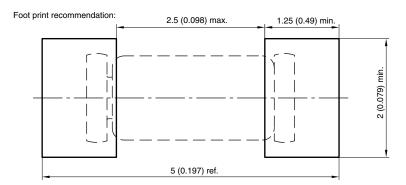
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### PACKAGE DIMENSIONS in millimeters (inches): MiniMELF (SOD-80)

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



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