



## **Small Signal Schottky Diode**



### **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

- For general purpose applications
- These diodes feature very low turn-on voltage and fast switching



- These devices are protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
  **RoHS**
- These diodes are also available in the DO-35 case with type designations BAT42 to BAT43 and in the SOD-123 case with type designations BAT42W-V to BAT43W-V
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

PARTS TABLE			
PART	ORDERING CODE	INTERNAL CONSTRUCTION	REMARKS
LL42	LL42-GS18 or LL42-GS08	Single diode	Tape and reel
LL43	LL43-GS18 or LL43-GS08	Single diode	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 <sup>(1)</sup>		I <sub>F</sub>	200	mA	
Repetitive peak forward current (1)	$t_p < 1 s, \delta < 0.5$	I <sub>FRM</sub>	500	mA	
Surge forward current <sup>(1)</sup>	t <sub>p</sub> = 10 ms	I <sub>FSM</sub>	4	A	
Power dissipation <sup>(1)</sup>	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

<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25 \text{ °C}$ , 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		Тj	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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## LL42, LL43

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ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 100 \ \mu A$ (pulsed)		V <sub>(BR)</sub>	30			V
Leakage current <sup>(1)</sup>	V <sub>R</sub> = 25 V		I <sub>R</sub>			0.5	μA
	V <sub>R</sub> = 25 V, T <sub>j</sub> = 100 °C		I <sub>R</sub>			100	μA
Forward voltage <sup>(1)</sup>	I <sub>F</sub> = 200 mA		V <sub>F</sub>			1000	mV
	I <sub>F</sub> = 10 mA	LL42	V <sub>F</sub>			400	mV
	I <sub>F</sub> = 50 mA	LL42	V <sub>F</sub>			650	mV
	$I_F = 2 \text{ mA}$	LL43	V <sub>F</sub>	260		330	mV
	I <sub>F</sub> = 15 mA	LL43	V <sub>F</sub>			450	mV
Diode capacitance	V <sub>R</sub> = 1 V, f = 1 MHz		CD		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	$R_L = 15 \text{ k}\Omega, C_L = 300 \text{ pF}, \text{ f} = 45 \text{ MHz}, V_{RF} = 2 \text{ V}$		$\eta_v$	80			%

Note

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

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

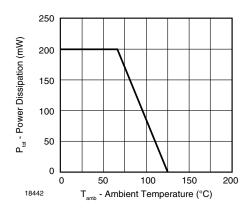


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

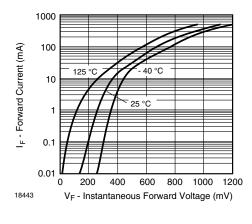


Fig. 2 - Typical Reverse Characteristics

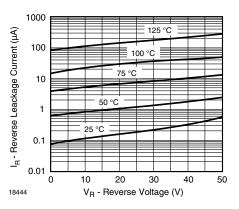
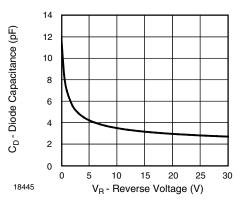


Fig. 3 - Typical Reverse Characteristics





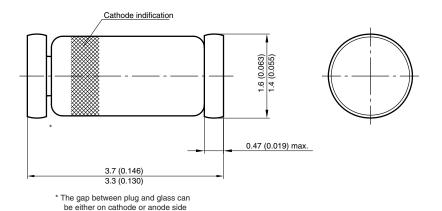
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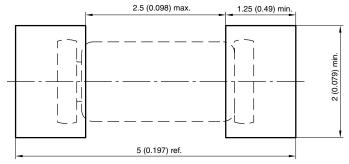


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### PACKAGE DIMENSIONS in millimeters (inches): MiniMELF SOD-80







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