

Vishay Semiconductors

Small Signal Schottky Diode



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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 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 COMPLIANT

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

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

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Repetitive peak reverse voltage		V_{RRM}	30	V	
Forward continuous current (1)		I _F	200	mA	
Repetitive peak forward current (1)	$t_p < 1 \text{ s, } \delta < 0.5$	I _{FRM}	500	mA	
Surge forward current (1)	t _p = 10 ms	I _{FSM}	4	А	
Power dissipation (1)	T _{amb} = 65 °C	P _{tot}	200	mW	

Note

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

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

Note

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



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I_R = 100 μA (pulsed)		V _(BR)	30			V
Leakage current (1)	V _R = 25 V		I _R			0.5	μA
	V _R = 25 V, T _j = 100 °C		I _R			100	μA
Forward voltage (1)	I _F = 200 mA		V _F			1000	mV
	I _F = 10 mA	LL42	V_{F}			400	mV
	I _F = 50 mA	LL42	V_{F}			650	mV
	$I_F = 2 \text{ mA}$	LL43	V _F	260		330	mV
	I _F = 15 mA	LL43	V_{F}			450	mV
Diode capacitance	V _R = 1 V, f = 1 MHz		C _D		7		pF
Reverse recovery time	I_F = 10 mA, I_R = 10 mA, i_R = 1 mA, R_L = 100 Ω		t _{rr}			5	ns
Rectification efficieny	$R_L = 15 \text{ k}\Omega, C_L = 300 \text{ pF}, f = 45 \text{ MHz}, V_{RF} = 2 \text{ V}$		η_{v}	80			%

Note

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

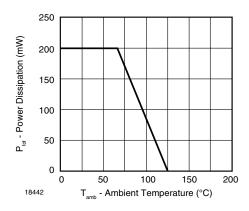


Fig. 1 - Admissible Power Dissipation vs. Ambient Temperature

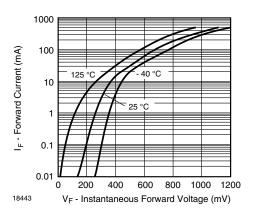


Fig. 2 - Typical Reverse Characteristics

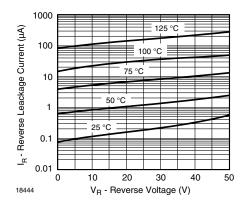


Fig. 3 - Typical Reverse Characteristics

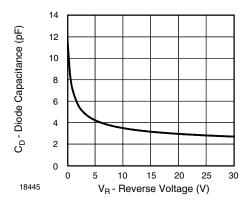
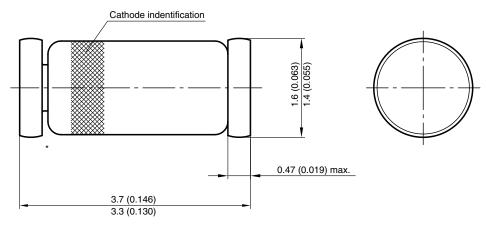


Fig. 4 - Typical Capacitance vs. Reverse Voltage

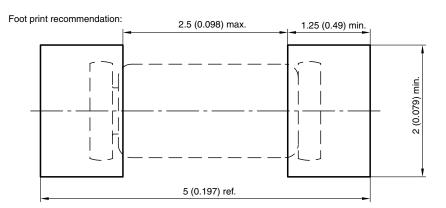
 $^{^{(1)}~}$ Pulse test $t_p < 300~\mu s,\, t_p/T < 0.02$

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



* The gap between plug and glass can be either on cathode or anode side



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