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Vishay Semiconductors

Small Signal Fast Switching Diodes



FEATURES

- Silicon epitaxial planar diodes
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



RoHS

HALOGEN

FREE

APPLICATIONS

· Extreme fast switches

ADDITIONAL RESOURCES



MECHANICAL DATA

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

08/2.5K per 7" reel (8 mm tape), 12.5K/box 18/10K per 13" reel (8 mm tape), 10K/box

PARTS TABLE						
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS	
LL4148-M	$V_{RRM} = 100 \text{ V},$ $V_{F} = \text{max. } 1000 \text{ mV at } I_{F} = 50 \text{ mA}$	LL4148-M-08 or LL4148-M-18	-	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}	100	V		
Reverse voltage		V _R	75	V		
Peak forward surge current	t _p = 1 μs	I _{FSM}	2	Α		
Repetitive peak forward current		I _{FRM}	500	mA		
Forward continuous current		I _F	300	mA		
Average forward current	V _R = 0	I _{F(AV)}	150	mA		
Power dissipation (1)		P _{tot}	500	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		Tj	175	°C		
Storage temperature range		T _{stg}	-65 to +175	°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	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Forward voltage	I _F = 50 mA	V _F		0.860	1	V	
	V _R = 20 V	I _R			25	nA	
Reverse current	V _R = 20 V, T _j = 150 °C	I _R			50	μA	
	V _R = 75 V	I _R			5	μΑ	
Breakdown voltage	$I_R = 100 \mu A, t_p/T = 0.01,$ $t_p = 0.3 \text{ ms}$	V _(BR)	100			V	
Diode capacitance	$V_R = 0 \text{ V, f} = 1 \text{ MHz,} $ $V_{HF} = 50 \text{ mV}$	C _D			4	pF	
Reverse recovery time	$I_F = I_R = 10 \text{ mA},$ $I_R = 1 \text{ mA}$	+			8		
neverse recovery time	$I_F = 10 \text{ mA}, V_R = 6 \text{ V},$ $i_R = 0.1 \text{ x } I_R, R_L = 100 \Omega$	t _{rr} -			4	ns	

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

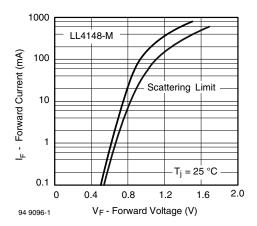


Fig. 1 - Forward Current vs. Forward Voltage

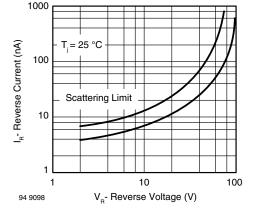


Fig. 3 - Diode Capacitance vs. Reverse Voltage

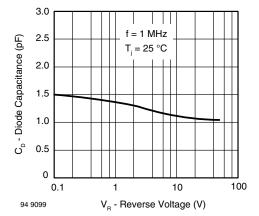
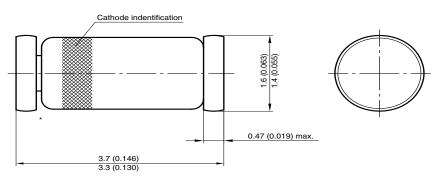


Fig. 2 - Reverse Current vs. Reverse Voltage

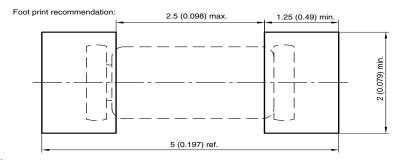


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PACKAGE DIMENSIONS in millimeters (inches): MiniMELF (SOD-80)



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



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