Vishay Semiconductors

Small Signal Fast Switching Diodes

FEATURES

- Silicon epitaxial planar diode
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- Material categorization: for definitions of compliance please see RoHS www.vishay.com/doc?99912

APPLICATIONS

• Extreme fast switches



3D Models

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

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PARTS TABLE						
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS	
LL4148	V_{RRM} = 100 V, V _F = max. 1000 mV at I _F = 50 mA	LL4148-GS08 or LL4148-GS18	-	Single	Tape and reel	
LL4448	V_{RRM} = 100 V, V _F = max. 1000 mV at I _F = 100 mA	LL4448-GS08 or LL4448-GS18	-	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	А		
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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LL4148, LL4448



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
	I _F = 5 mA	LL4448	V _F	0.620		0.720	V
Forward voltage	I _F = 50 mA	LL4148	V _F		0.860	1	V
	I _F = 100 mA	LL4448	V _F		0.930	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	μA
Breakdown voltage	$I_R = 100 \ \mu A, t_p/T = 0.01, t_p = 0.3 \ ms$		V _(BR)	100			V
Diode capacitance	$V_R = 0 V, f = 1 MHz,$ $V_{HF} = 50 mV$		CD			4	pF
Reverse recovery time	I _F = I _R = 10 mA, i _R = 1 mA	-	t _{rr}			8	- ns
neverse recovery time	$\label{eq:IF} \begin{array}{l} I_{F} = 10 \text{ mA}, V_{R} = 6 \text{ V}, \\ i_{R} = 0.1 \text{ x } I_{R}, R_{L} = 100 \ \Omega \end{array}$					4	

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

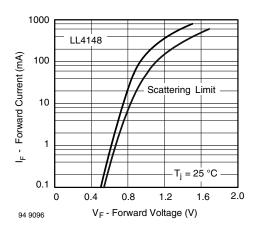


Fig. 1 - Forward Current vs. Forward Voltage

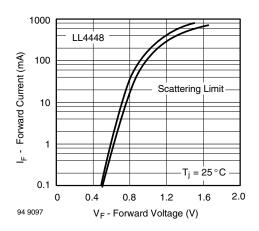


Fig. 2 - Forward Current vs. Forward Voltage

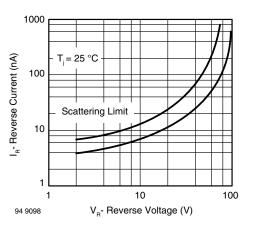


Fig. 3 - Reverse Current vs. Reverse Voltage

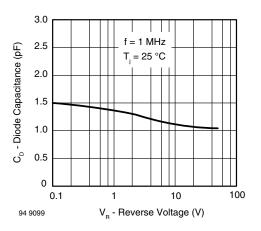


Fig. 4 - Diode Capacitance vs. Reverse Voltage

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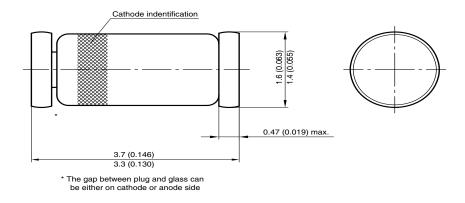
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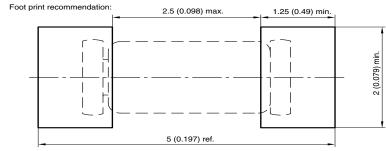
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PACKAGE DIMENSIONS in millimeters (inches): MiniMELF (SOD-80)





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