

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 www.vishay.com/doc?99912


RoHS
COMPLIANT

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

APPLICATIONS

- Extreme fast switches

PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
LL4148	$V_{RRM} = 100\text{ V}$, $V_F = \text{max. } 1000\text{ mV at } I_F = 50\text{ mA}$	LL4148-GS08 or LL4148-GS18	-	Single	Tape and reel
LL4448	$V_{RRM} = 100\text{ V}$, $V_F = \text{max. } 1000\text{ mV at } I_F = 100\text{ mA}$	LL4448-GS08 or LL4448-GS18	-	Single	Tape and reel

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^\circ\text{C}$, 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	$t_p = 1\text{ }\mu\text{s}$	I_{FSM}	2	A
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 ($T_{amb} = 25\text{ }^\circ\text{C}$, 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	175	$^\circ\text{C}$
Storage temperature range		T_{stg}	-65 to +175	$^\circ\text{C}$

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

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 5 mA	LL4448	V _F	0.620		0.720	V
	I _F = 50 mA	LL4148	V _F		0.860	1	V
	I _F = 100 mA	LL4448	V _F		0.930	1	V
Reverse current	V _R = 20 V		I _R			25	nA
	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 μA, 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		C _D			4	pF
Reverse recovery time	I _F = I _R = 10 mA, i _R = 1 mA		t _{rr}			8	ns
	I _F = 10 mA, V _R = 6 V, i _R = 0.1 x I _R , R _L = 100 Ω					4	

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

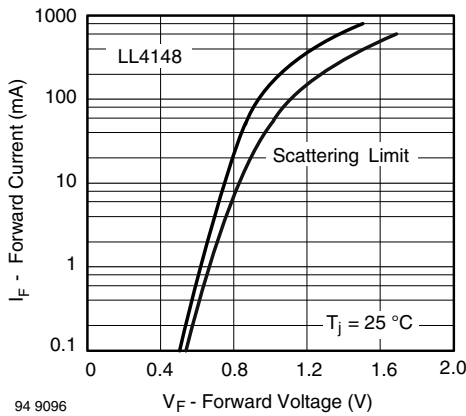


Fig. 1 - Forward Current vs. Forward Voltage

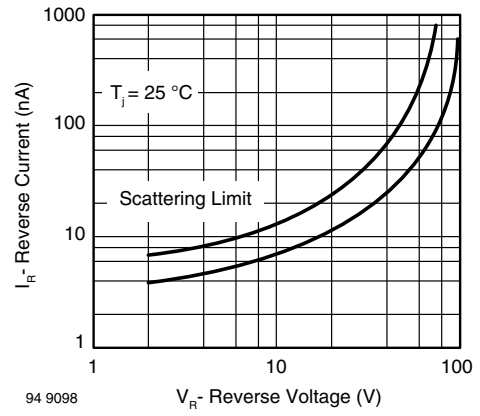


Fig. 3 - Reverse Current vs. Reverse Voltage

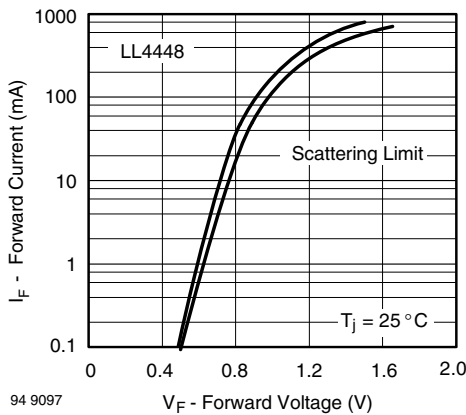


Fig. 2 - Forward Current vs. Forward Voltage

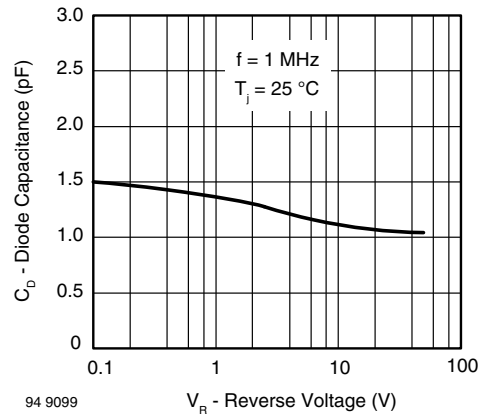
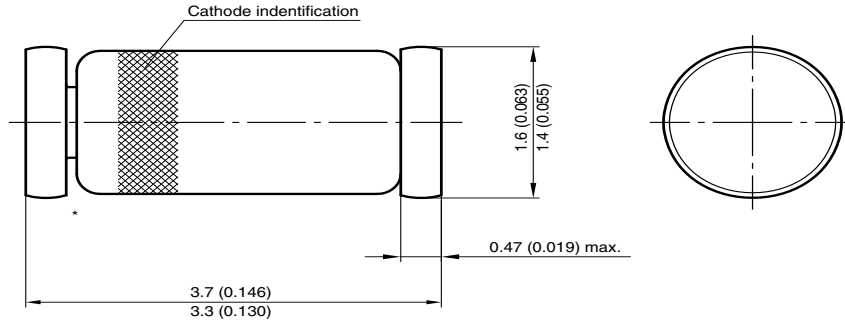


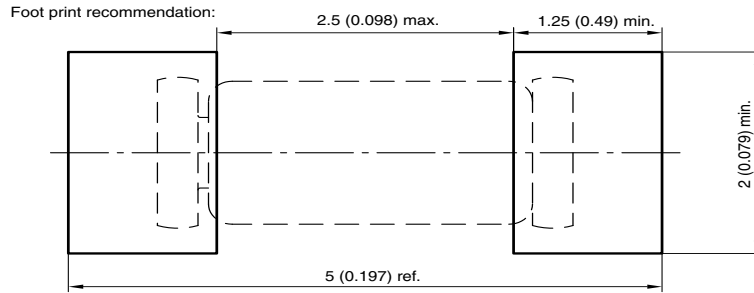
Fig. 4 - Diode Capacitance vs. Reverse Voltage



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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