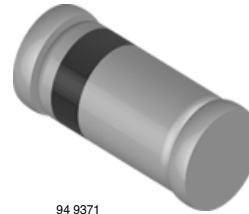


Small Signal Fast Switching Diodes

Features

- Silicon Epitaxial Planar Diodes
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- Lead (Pb)-free component
- Component in acc. to RoHS 2002/95/EC and WEEE 2002/96/EC



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Applications

- Extreme fast switches

Mechanical Data

Case: MiniMELF Glass case (SOD80)

Weight: approx. 31 mg

Cathode Band Color: Black

Packaging Codes/Options:

GS18 / 10 k per 13" reel (8 mm tape), 10 k/box

GS08 / 2.5 k per 7" reel (8 mm tape), 12.5 k/box

Parts Table

Part	Type differentiation	Ordering code	Remarks
LL4148	$V_{RRM} = 100\text{ V}$, $V_F = \text{max. } 1000\text{ mV}$ at $I_F = 50\text{ mA}$	LL4148-GS18 or LL4148-GS08	Tape and Reel
LL4448	$V_{RRM} = 100\text{ V}$, $V_F = \text{max. } 1000\text{ mV}$ at $I_F = 100\text{ mA}$	LL4448-GS18 or LL4448-GS08	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_{FAV}	150	mA
Power dissipation		P_V	500	mW

Thermal Characteristics

$T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	on PC board 50 mm x 50 mm x 1.6 mm	R_{thJA}	500	K/W
Junction temperature		T_j	175	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 65 to + 175	$^\circ\text{C}$

Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 5\text{ mA}$	LL4448	V_F	620		720	mV
	$I_F = 50\text{ mA}$	LL4148	V_F		860	1000	mV
	$I_F = 100\text{ mA}$	LL4448	V_F		930	1000	mV
Reverse current	$V_R = 20\text{ V}$		I_R			25	nA
	$V_R = 20\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$		I_R			50	μA
	$V_R = 75\text{ V}$		I_R			5	μA
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$		$V_{(BR)}$	100			V
Diode capacitance	$V_R = 0, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$		C_D			4	pF
Rectification efficiency	$V_{HF} = 2\text{ V}, f = 100\text{ MHz}$		η_r	45			%
Reverse recovery time	$I_F = I_R = 10\text{ mA},$ $i_R = 1\text{ mA}$		t_{rr}			8	ns
	$I_F = 10\text{ mA}, V_R = 6\text{ V},$ $i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$		t_{rr}			4	ns

Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified

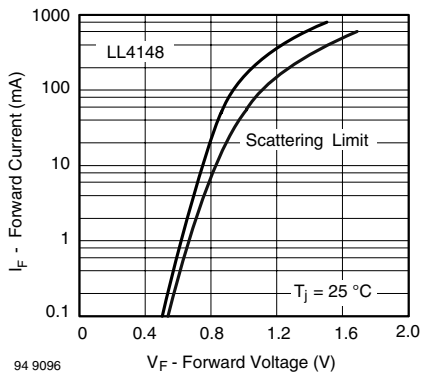


Figure 1. Forward Current vs. Forward Voltage

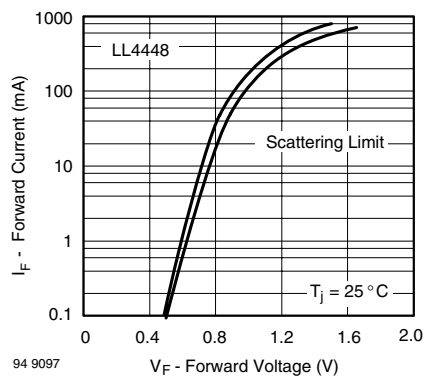


Figure 2. Forward Current vs. Forward Voltage

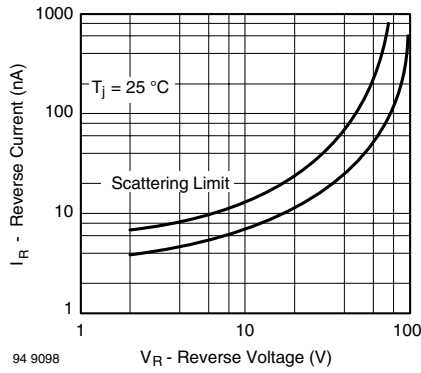


Figure 3. Reverse Current vs. Reverse Voltage

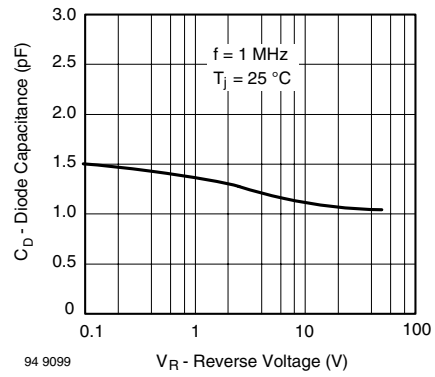


Figure 4. Diode Capacitance vs. Reverse Voltage

Package Dimensions in mm (Inches)

