Small Signal Fast Switching Diodes

FEATURES

- Silicon epitaxial planar diodes
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- Quadro Melf package
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

APPLICATIONS

- Extremely fast switches

MECHANICAL DATA

Case: QuadroMELF SOD-80

Weight: approx. 34mg

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

PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
LS4148	V_F = max. 1000 mV at I_F = 50 mA	LS4148-GS18 or LS4148-GS08	-	Single diode	Tape and reel
LS4448	V_F = max. 1000 mV at I_F = 100 mA	LS4448GS18 or LS4448GS08	-	Single diode	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	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		P_{tot}	500	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	R_{thJA}	300	K/W
Junction temperature		T_j	175	°C
Storage temperature range		T_{stg}	- 65 to + 175	°C

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)							
PARAMETER	**TEST CONDITION**	**PART**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 5 mA	LS4448	V_F	620		720	mV
	I_F = 50 mA	LS4148	V_F		860	1000	mV
	I_F = 100 mA	LS4448	V_F		930	1000	mV
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, 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		t_{rr}			4	ns

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

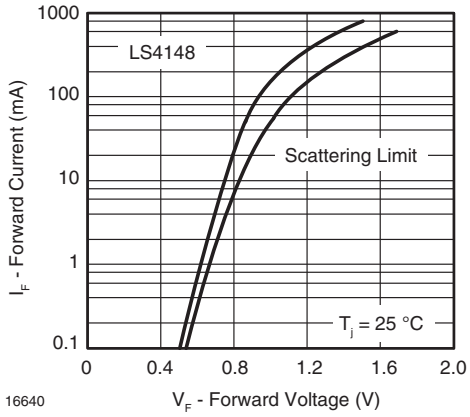


Fig. 1 - Forward Current vs. Forward Voltage

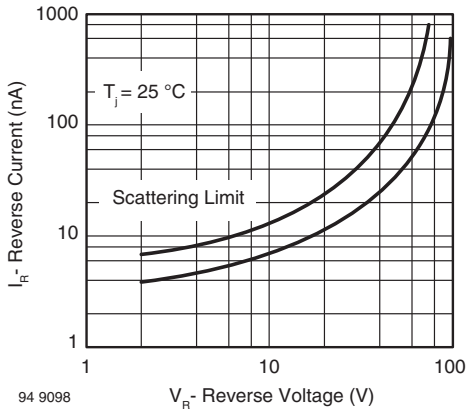


Fig. 3 - Reverse Current vs. Reverse Voltage

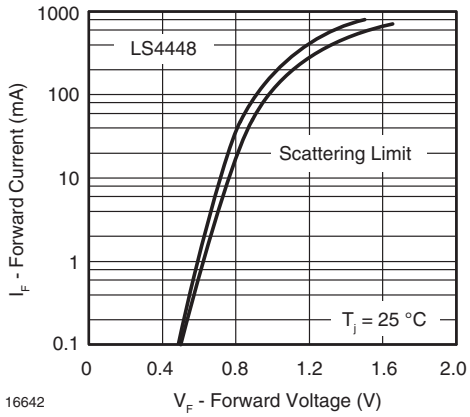


Fig. 2 - Forward Current vs. Forward Voltage

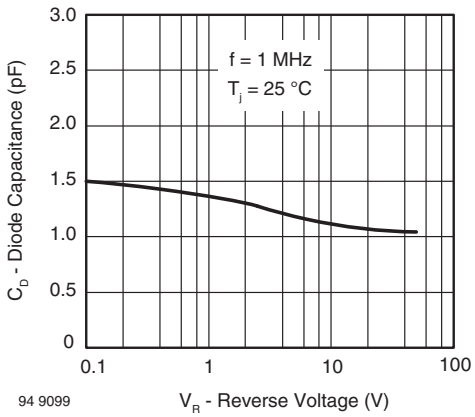
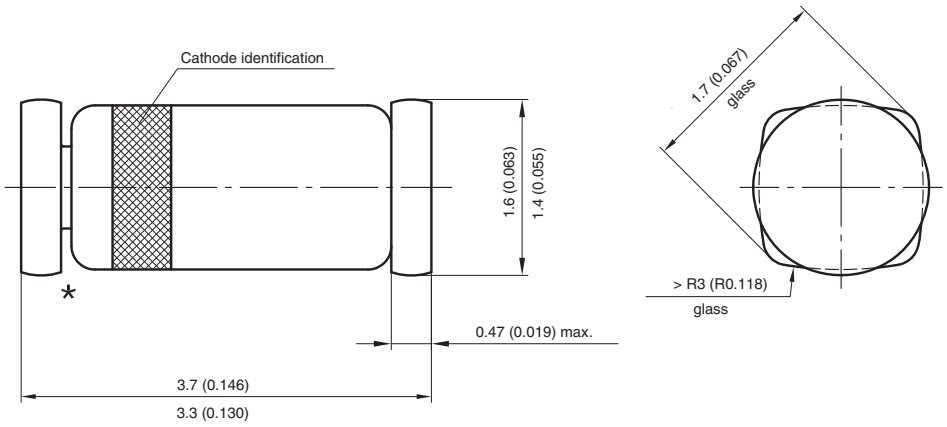


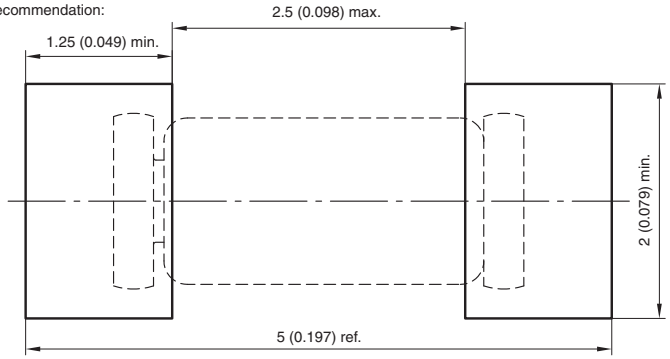
Fig. 4 - Diode Capacitance vs. Reverse Voltage

PACKAGE DIMENSIONS in millimeters (inches): **QuadroMELF SOD-80**



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

Foot print recommendation:



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