

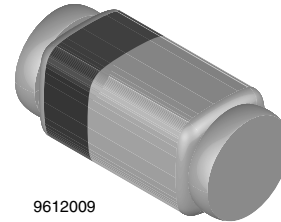
Small Signal Fast Switching Diodes

Features

- Silicon Epitaxial Planar Diodes
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- Quadro Melf package
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT



9612009

Applications

- Extremely fast switches

Mechanical Data

Case: Quadromelf SOD-80

Weight: approx. 34 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	Type Marking	Remarks
LS4148	$V_F = \text{max. } 1000 \text{ mV at } I_F = 50 \text{ mA}$	LS4148-GS18 or LS4148-GS08	-	Tape and Reel
LS4448	$V_F = \text{max. } 1000 \text{ mV at } I_F = 100 \text{ mA}$	LS4448-GS18 or LS4448-GS08	-	Tape and Reel

Absolute Maximum Ratings

$T_{\text{amb}} = 25 \text{ }^\circ\text{C}$, 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_{tot}	500	mW

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air	On PC board 50 mm x 50 mm x 1.6mm	R_{thJA}	300	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	$I_F = 5\text{ mA}$	LS4448	V_F	620		720	mV
	$I_F = 50\text{ mA}$	LS4148	V_F		860	1000	mV
	$I_F = 100\text{ mA}$	LS4448	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

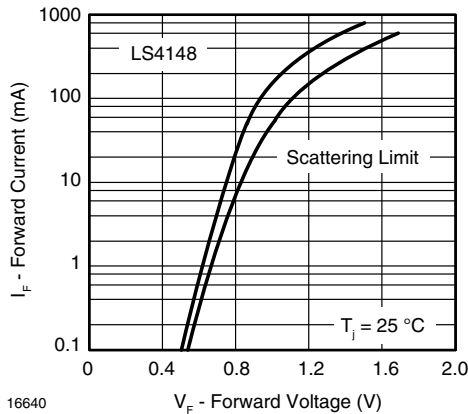


Figure 1. Forward Current vs. Forward Voltage

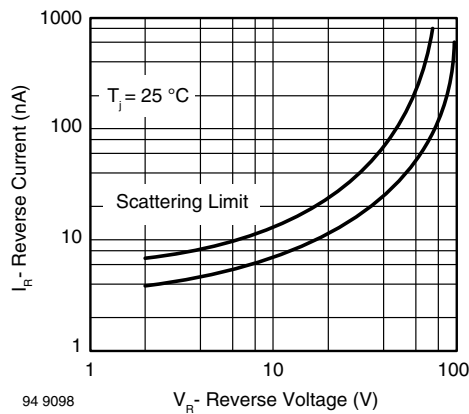


Figure 3. Reverse Current vs. Reverse Voltage

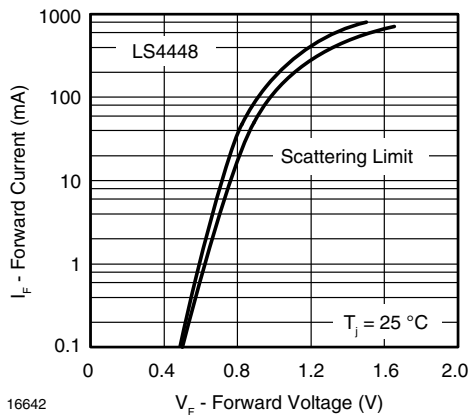


Figure 2. Forward Current vs. Forward Voltage

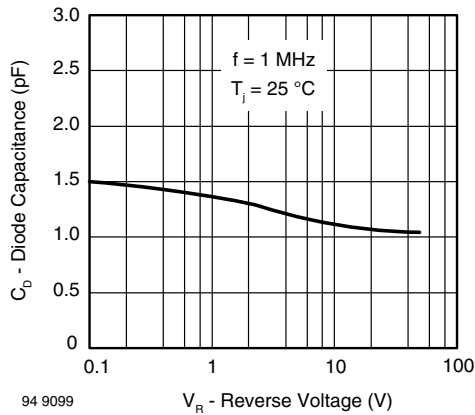
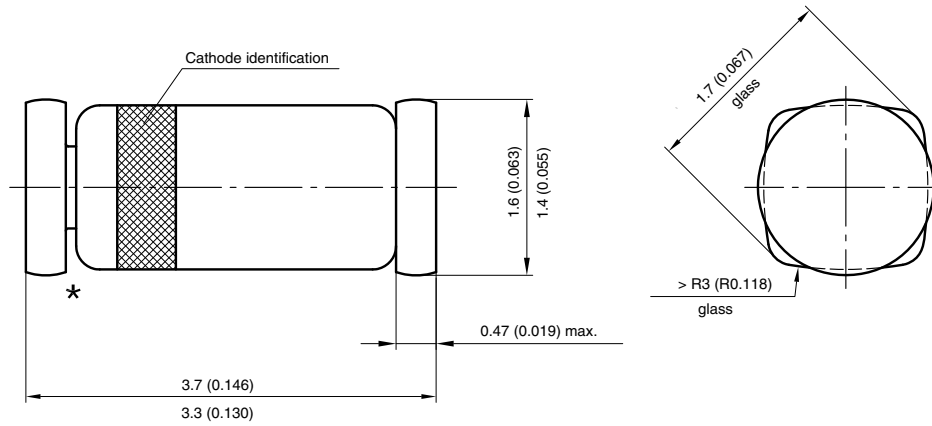


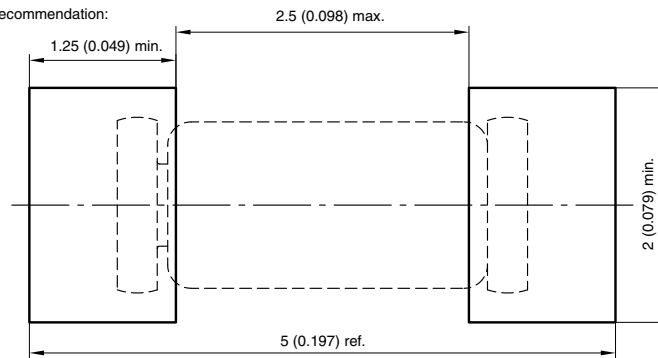
Figure 4. Diode Capacitance vs. Reverse Voltage

Package Dimensions in millimeters (inches): Quadro MELF SOD-80



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

Foot print recommendation:



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 96 12071



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