

## Small Signal Fast Switching Diodes



### FEATURES

- Silicon epitaxial planar diodes
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- QuadroMELF package
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### APPLICATIONS

- Extremely fast switches

### ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** QuadroMELF (SOD-80)

**Weight:** approx. 34 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

### PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
LS4148	$V_F = \text{max. } 1000 \text{ mV at } I_F = 50 \text{ mA}$	LS4148-GS18 or LS4148-GS08	-	Single	Tape and reel
LS4448	$V_F = \text{max. } 1000 \text{ mV at } I_F = 100 \text{ mA}$	LS4448GS18 or LS4448GS08	-	Single	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	$V_R = 0$	$I_{F(AV)}$	150	mA
Power dissipation		$P_{\text{tot}}$	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 1.6 mm	$R_{\text{thJA}}$	300	K/W
Junction temperature		$T_j$	175	$^\circ\text{C}$
Storage temperature range		$T_{\text{stg}}$	-65 to +175	$^\circ\text{C}$

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 5\text{ mA}$	LS4448	$V_F$	0.620		0.720	V
	$I_F = 50\text{ mA}$	LS4148	$V_F$		0.860	1	V
	$I_F = 100\text{ mA}$	LS4448	$V_F$		0.930	1	V
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	$\mu\text{A}$
	$V_R = 75\text{ V}$		$I_R$			5	$\mu\text{A}$
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
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

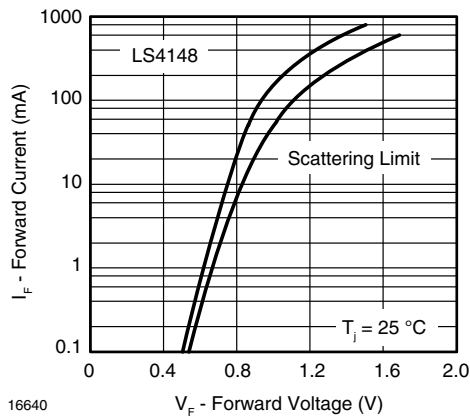
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Current vs. Forward Voltage

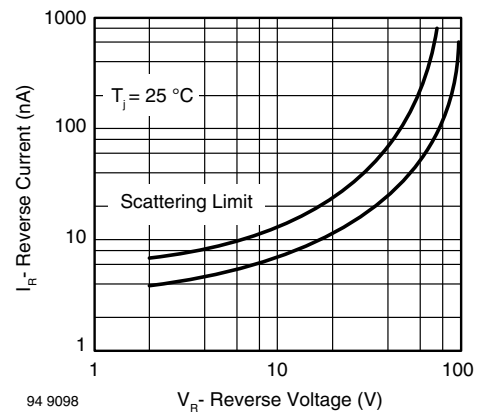


Fig. 3 - Reverse Current vs. Reverse Voltage

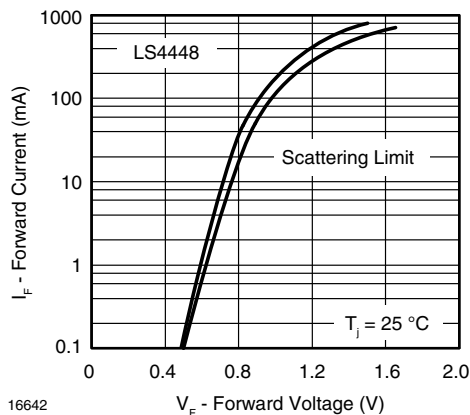


Fig. 2 - Forward Current vs. Forward Voltage

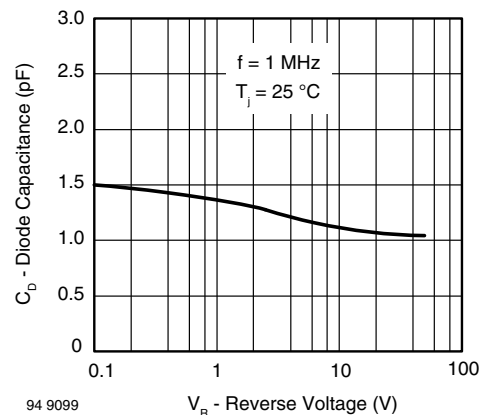
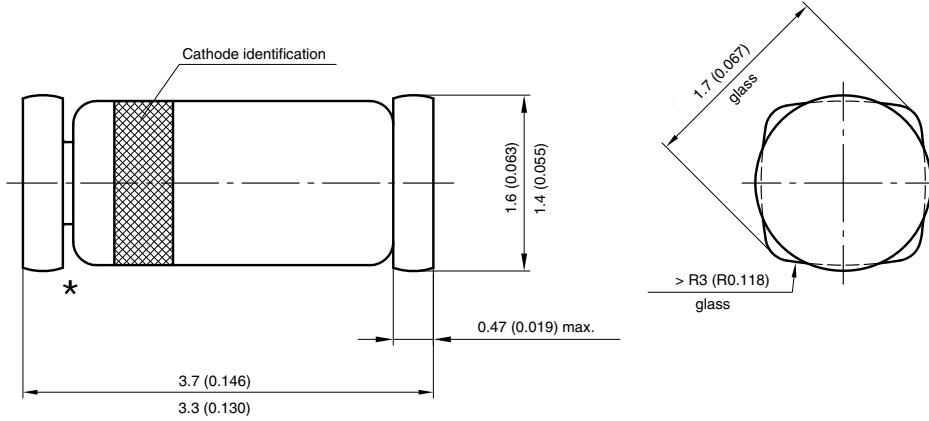


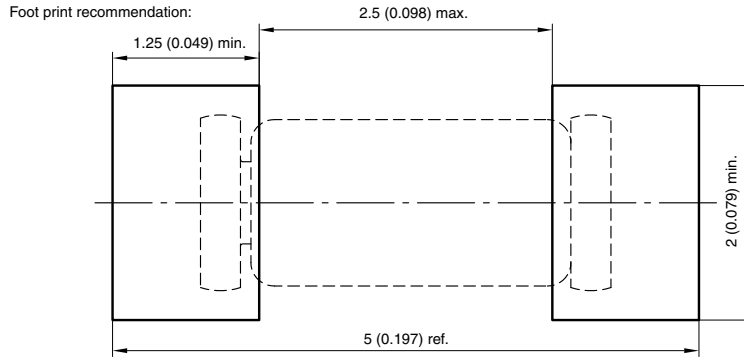
Fig. 4 - Diode Capacitance vs. Reverse Voltage



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



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



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