

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

LINKS TO 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 ($T_{amb} = 25^\circ\text{C}$, 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	$t_p = 1 \mu\text{s}$	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

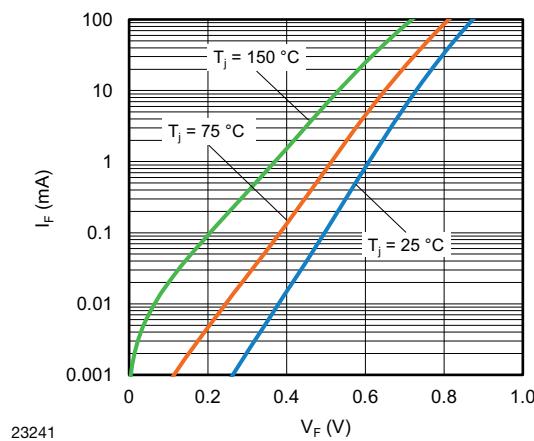
THERMAL CHARACTERISTICS ($T_{amb} = 25^\circ\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air (1)		R_{thJA}	300	K/W
Junction temperature		T_J	175	°C
Storage temperature range		T_{stg}	-65 to +175	°C

Note

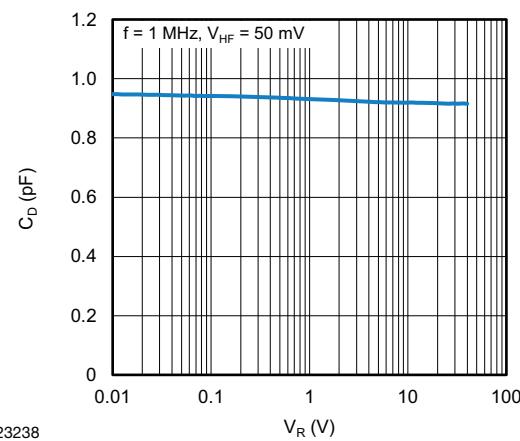
(1) Valid provided that electrodes are kept at ambient temperature

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	0.620		0.720	V
	$I_F = 50 \text{ mA}$	LL4148	V_F		0.860	1	V
	$I_F = 100 \text{ mA}$	LL4448	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	μA
	$V_R = 75 \text{ V}$		I_R			5	μA
Breakdown voltage	$I_R = 100 \mu\text{A}, t_p/T = 0.01, t_p = 0.3 \text{ ms}$		$V_{(BR)}$	100			V
Diode capacitance	$V_R = 0 \text{ V}, f = 1 \text{ MHz}, V_{HF} = 50 \text{ mV}$		C_D			4	pF
Reverse recovery time	$I_F = I_R = 10 \text{ mA}, i_R = 1 \text{ mA}$		t_{rr}			8	ns
	$I_F = 10 \text{ mA}, V_R = 6 \text{ V}, i_R = 0.1 \times I_R, R_L = 100 \Omega$					4	

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


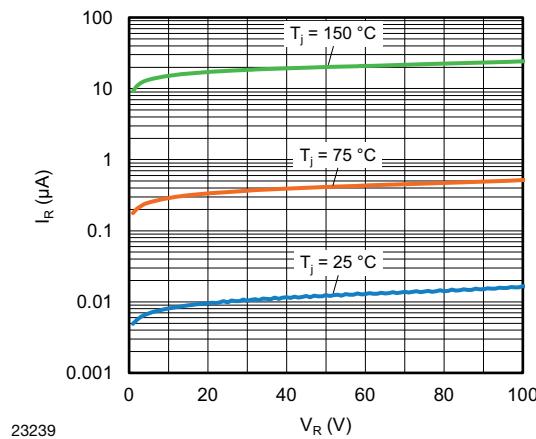
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Fig. 1 - Forward Current vs. Forward Voltage



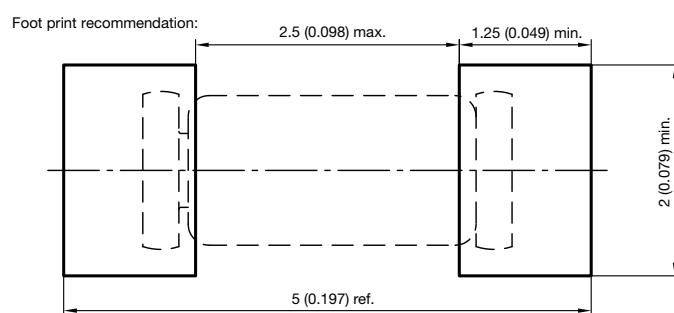
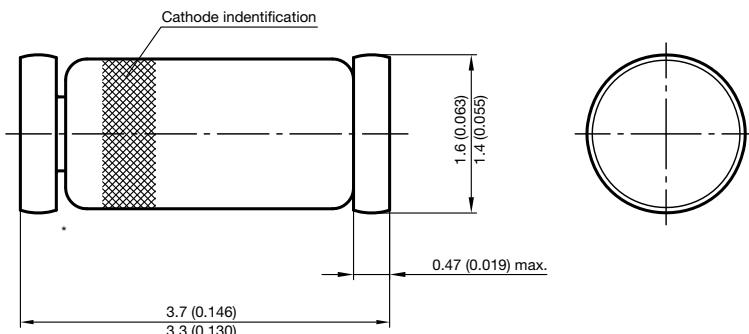
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Fig. 3 - Typical Capacitance vs. Reverse Voltage



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Fig. 2 - Typical Reverse Leakage Current vs. Reverse Voltage

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


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