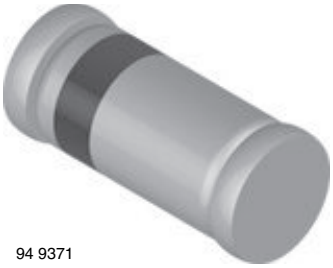
Small Signal Schottky Diodes

Features

- For general purpose applications
- The LL101 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing and coupling diodes for fast switching and low logic level applications.
- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- This diode is also available in the DO-35 case with type designation SD101A, B, C and in the SOD-123 case with type designation SD101AW-V, SD101BW-V, SD101CW-V
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

RoHS COMPLIANT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Mechanical Data

Case: MiniMELF SOD-80
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

Applications

- HF-Detector
- Protection circuit
- Diode for low currents wits a low supply voltage
- Small battery charger
- Power supplies
- DC/DC converter for notebooks

Parts Table

Part	Type differentiation	Ordering code	Remarks
LL101A	V_R = 60 V, V_F at I_F 1 mA max. 410 mV	LL101A-GS18 or LL101A-GS08	Tape and Reel
LL101B	V_R = 50 V, V_F at I_F 1 mA max. 400 mV	LL101B-GS18 or LL101B-GS08	Tape and Reel
LL101C	V_R = 40 V, V_F at I_F 1 mA max. 390 mV	LL101C-GS18 or LL101C-GS08	Tape and Reel

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Peak inverse voltage		LL101A	V_{RRM}	60	V
		LL101B	V_{RRM}	50	V
		LL101C	V_{RRM}	40	V
Power dissipation (infinite heatsink)			P_{tot}	400[1)]	mW
Forward continuous current			I_F	30	mA
Maximum single cycle surge 10 µs square wave			I_{FSM}	2	A

[1)] Valid provided that electrodes are kept at ambient temperature

For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction temperature		T_j	125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C
Thermal resistance junction to ambient air	on PC board 50 mm x 50 mm x 1.6 mm	R_{thJA}	320	K/W

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Reverse Breakdown Voltage	I_R = 10 µA	LL101A	$V_{(BR)}$	60			V
		LL101B	$V_{(BR)}$	50			V
		LL101C	$V_{(BR)}$	40			V
Leakage current	V_R = 50 V	LL101A	I_R			200	nA
	V_R = 40 V	LL101B	I_R			200	nA
	V_R = 30 V	LL101C	I_R			200	nA
Forward voltage drop	I_F = 1 mA	LL101A	V_F			410	mV
	I_F = 1 mA	LL101B	V_F			400	mV
	I_F = 1 mA	LL101C	V_F			390	mV
	I_F = 15 mA	LL101A	V_F			1000	mV
		LL101B	V_F			950	mV
		LL101C	V_F			900	mV
Diode capacitance	V_R = 0 V, f = 1 MHz	LL101A	C_D			2.0	pF
	V_R = 0 V, f = 1 MHz	LL101B	C_D			2.1	pF
		LL101C	C_D			2.2	pF
Reverse recovery time	I_F = I_R = 5 mA, recover to 0.1 I_R		t_{rr}			1	ns

Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

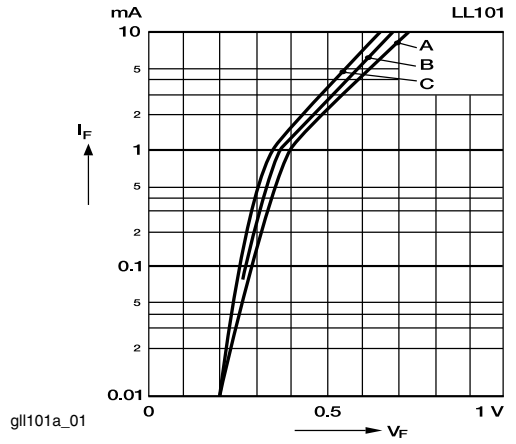

Figure 1. Typ. I_F vs. V_F for primary conduction through the Schottky barrier

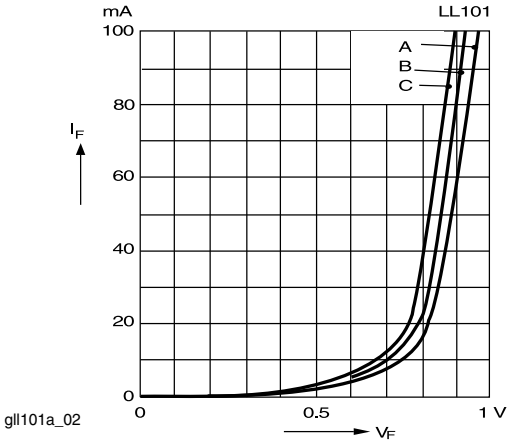

Figure 2. Typ. I_F of combination Schottky barrrier and PN junction guard ring

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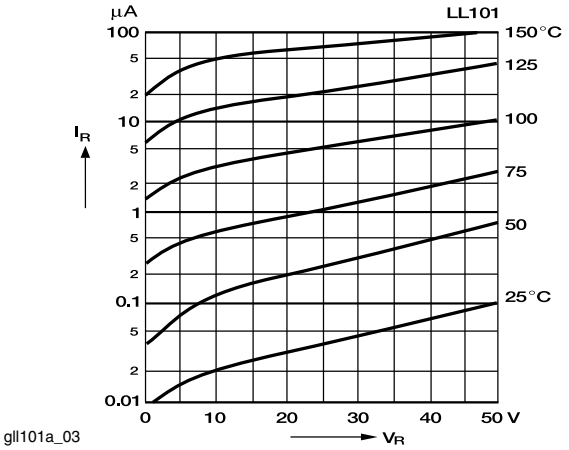


Figure 3. Typical Variation of Reverse Current at Various Temperatures

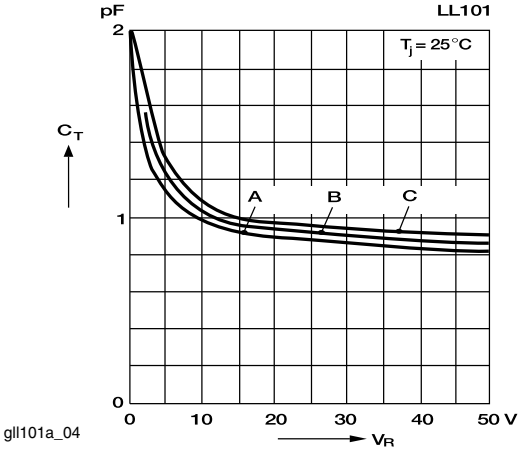
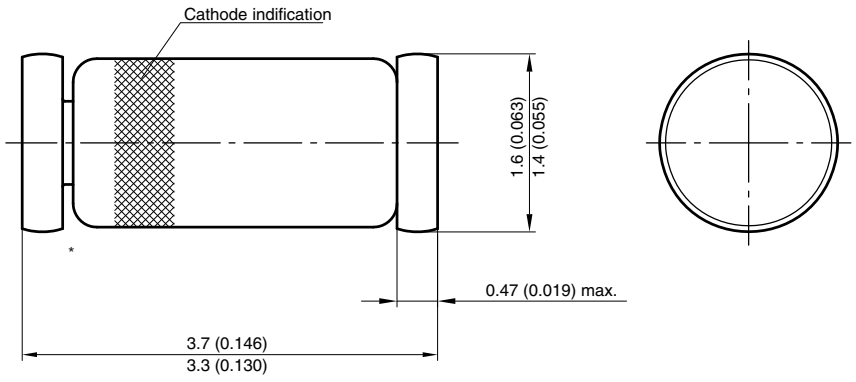


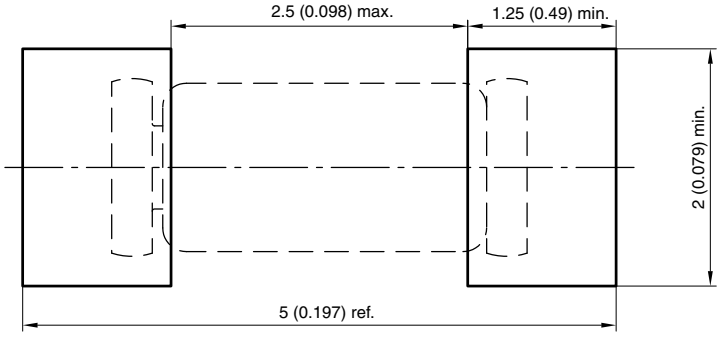
Figure 4. Typical Capacitance Curve as a Function of Reverse Voltage

Package Dimensions in millimeters (inches): **MiniMELF SOD-80**



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

Foot print recommendation:



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