Small Signal Schottky Diode

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
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

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

- 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 DIFFERENTATION	ORDERING CODE	INTERNAL CONSTRUCTION	REMARKS
LL101A	V_R = 60 V, V_F at I_F = 1 mA max. 410 mV	LL101A-GS18 or LL101A-GS08	Single diode	Tape and reel
LL101B	V_R = 50 V, V_F at I_F = 1 mA max. 400 mV	LL101B-GS18 or LL101B-GS08	Single diode	Tape and reel
LL101C	V_R = 40 V, V_F at I_F = 1 mA max. 390 mV	LL101C-GS18 or LL101C-GS08	Single diode	Tape and reel

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage		LL101A	V_{RRM}	60	V
		LL101B	V_{RRM}	50	V
		LL101C	V_{RRM}	40	V
Power dissipation (infinite heatsink) (1)			P_{tot}	400	mW
Forward continuous courrent			I_F	30	mA
Maximum single cycle surge 10 µs square wave			I_{FSM}	2	A

Note

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

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			0.410	V
	I_F = 1 mA	LL101B	V_F			0.400	V
	I_F = 1 mA	LL101C	V_F			0.390	V
	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)

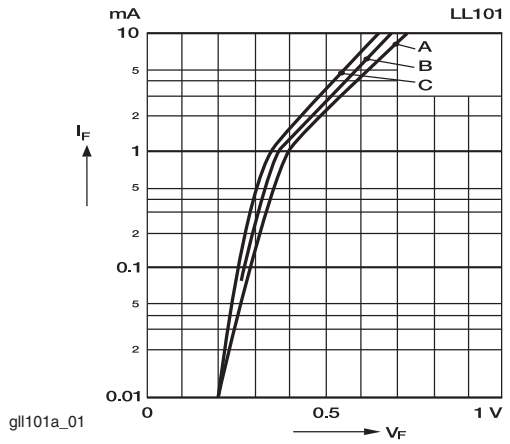


Fig. 1 - Typ. I_F vs. V_F for Primary Conduction through the Schottky Barrier

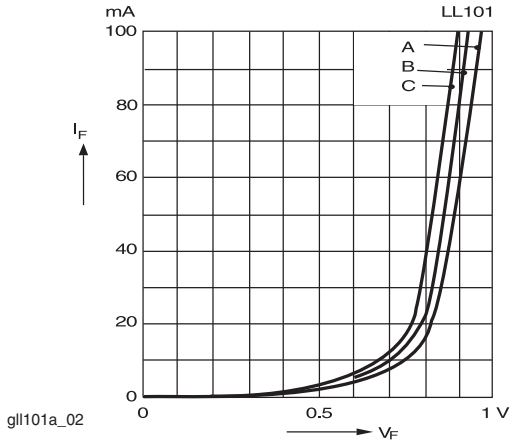


Fig. 2 - Typ. I_F of Combination Schottky Barrier and PN Junction Guard Ring

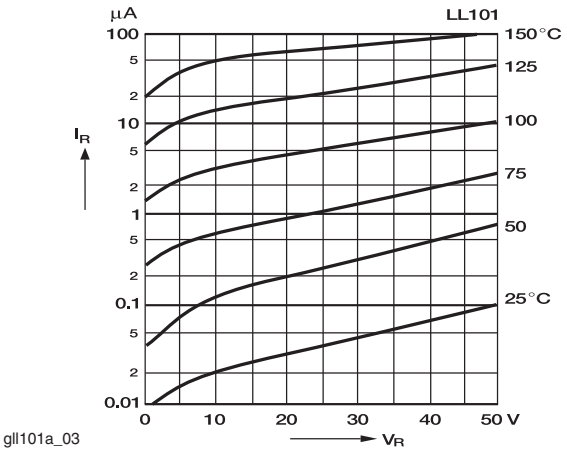


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

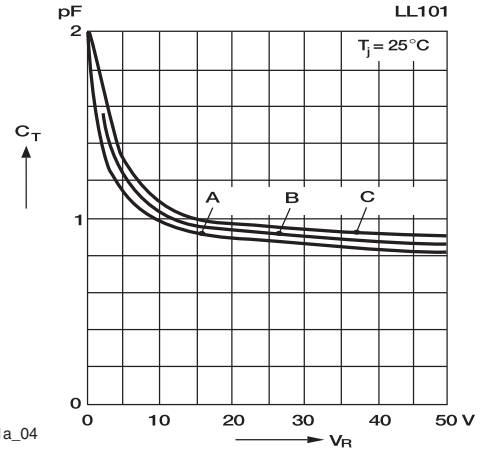
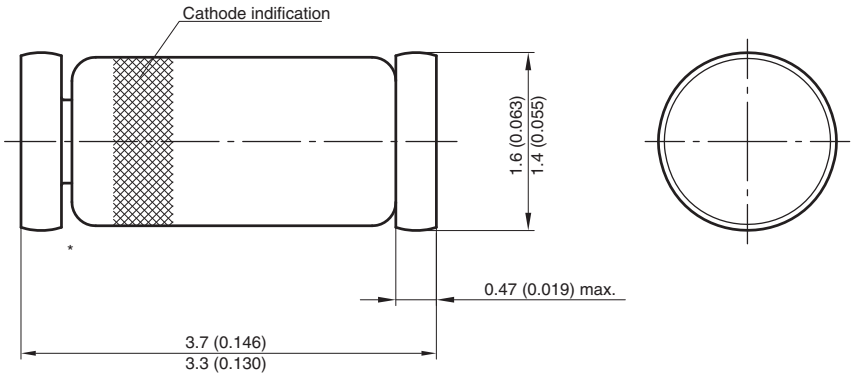


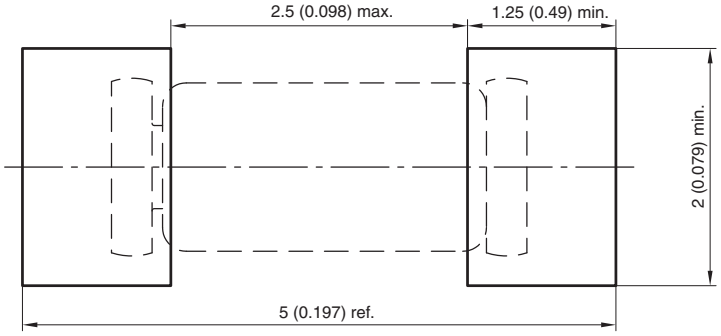
Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage

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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