

## 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 (DO-204AH) case with type designation SD101A, SD101B, SD101C and in the SOD-123 case with type designation SD101AW, SD101BW, SD101CW
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://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

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

### PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	CIRCUIT CONFIGURATION	REMARKS
LL101A	$V_R = 60\text{ V}$ , $V_F$ at $I_F = 1\text{ mA}$ max. 410 mV	LL101A-GS18 or LL101A-GS08	Single	Tape and reel
LL101B	$V_R = 50\text{ V}$ , $V_F$ at $I_F = 1\text{ mA}$ max. 400 mV	LL101B-GS18 or LL101B-GS08	Single	Tape and reel
LL101C	$V_R = 40\text{ V}$ , $V_F$ at $I_F = 1\text{ mA}$ max. 390 mV	LL101C-GS18 or LL101C-GS08	Single	Tape and reel

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^\circ\text{C}$ , unless otherwise specified)

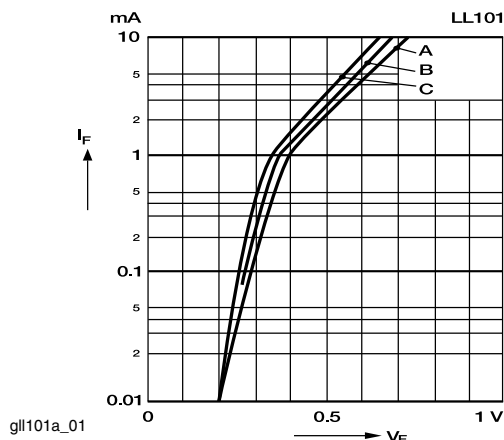
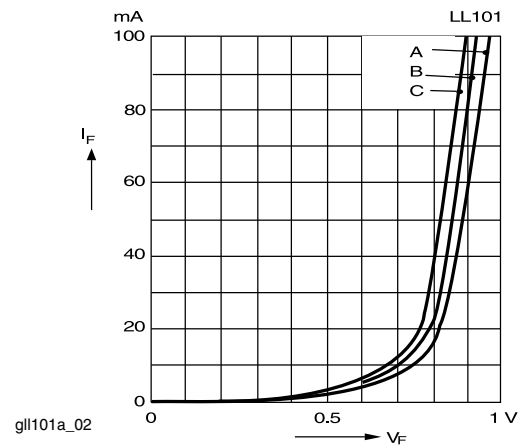
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Reverse voltage		LL101A	$V_{RRM}$	60	V
		LL101B	$V_{RRM}$	50	V
		LL101C	$V_{RRM}$	40	V
Power dissipation (infinite heatsink) <sup>(1)</sup>			$P_{tot}$	400	mW
Forward continuous current			$I_F$	30	mA
Maximum single cycle surge 10 $\mu\text{s}$ square wave			$I_{FSM}$	2	A

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Junction temperature		$T_j$	125	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$
Thermal resistance junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	$R_{thJA}$	320	K/W

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse Breakdown Voltage	$I_R = 10\text{ }\mu\text{A}$	LL101A	$V_{(BR)}$	60			V
		LL101B	$V_{(BR)}$	50			V
		LL101C	$V_{(BR)}$	40			V
Leakage current	$V_R = 50\text{ V}$	LL101A	$I_R$			200	nA
	$V_R = 40\text{ V}$	LL101B	$I_R$			200	nA
	$V_R = 30\text{ V}$	LL101C	$I_R$			200	nA
Forward voltage drop	$I_F = 1\text{ mA}$	LL101A	$V_F$			0.410	V
		LL101B	$V_F$			0.400	V
		LL101C	$V_F$			0.390	V
	$I_F = 15\text{ mA}$	LL101A	$V_F$			1000	mV
		LL101B	$V_F$			950	mV
		LL101C	$V_F$			900	mV
Diode capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	LL101A	$C_D$			2.0	pF
		LL101B	$C_D$			2.1	pF
		LL101C	$C_D$			2.2	pF
Reverse recovery time	$I_F = I_R = 5\text{ mA}$ , recover to $0.1 I_R$		$t_{rr}$			1	ns

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

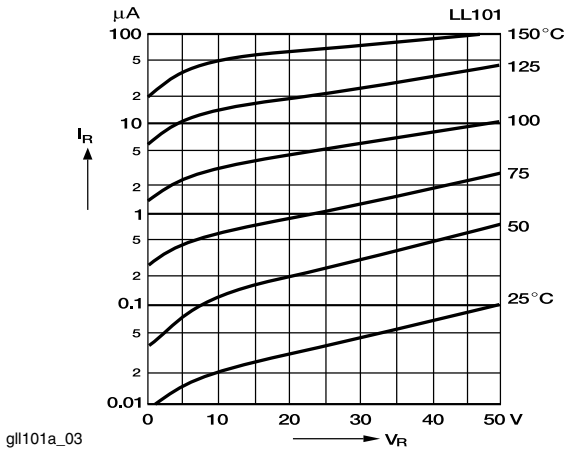


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

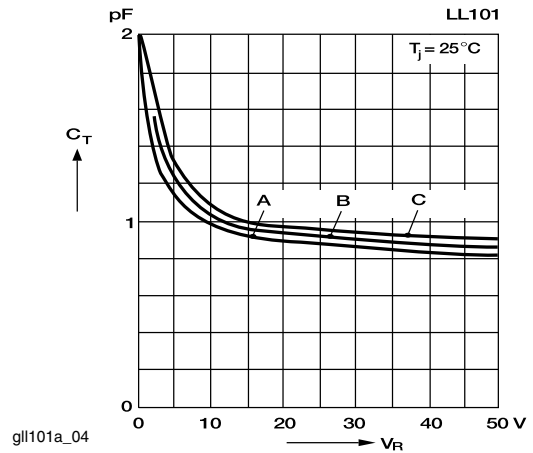
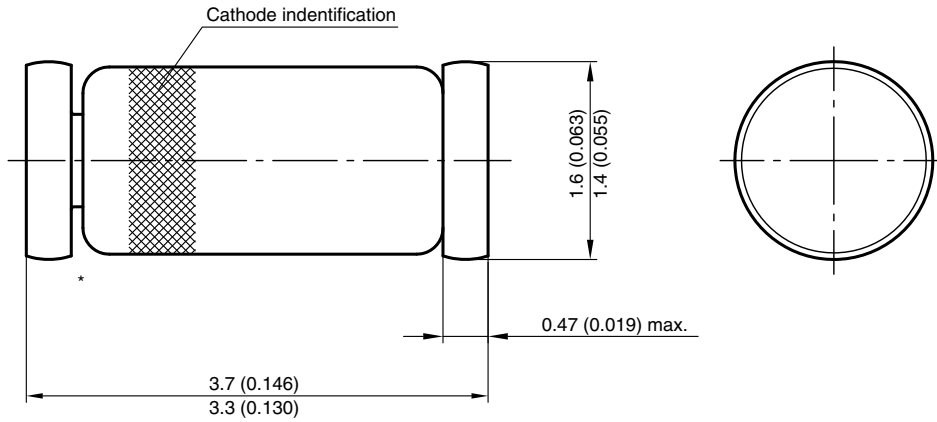
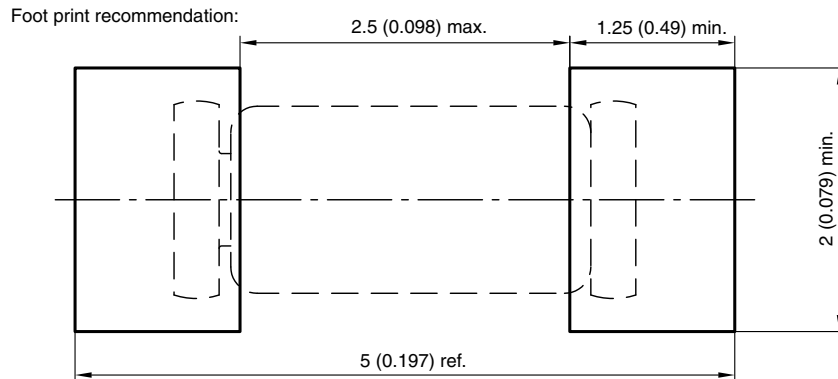


Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage

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



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



Document no.:6.560-5005.01-4  
 Rev. 8 - Date: 07.June.2006  
 96 12070