

Small Signal Schottky Diode



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

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

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 | INTERNAL CONSTRUCTION | REMARKS |
|--------|--|----------------------------|-----------------------|---------------|
| LL101A | $V_R = 60\text{ V}$, V_F at $I_F = 1\text{ mA}$ max. 410 mV | LL101A-GS18 or LL101A-GS08 | Single diode | 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 diode | 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 diode | Tape and reel |

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

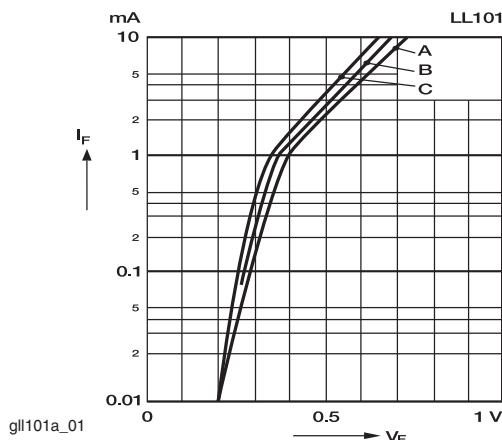
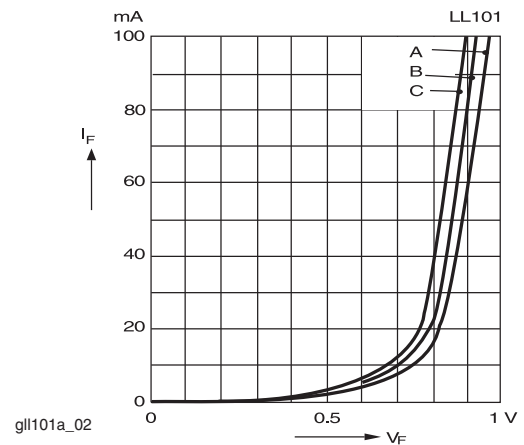
| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
|---|----------------|--------|-----------|-------|------|
| Reverse voltage | | LL101A | V_{RRM} | 60 | V |
| | | LL101B | V_{RRM} | 50 | V |
| | | LL101C | V_{RRM} | 40 | V |
| Power dissipation (infinite heatsink) ⁽¹⁾ | | | P_{tot} | 400 | mW |
| Forward continuous current | | | 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 ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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 |

| ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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 $0.1\text{ }I_R$ | | 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

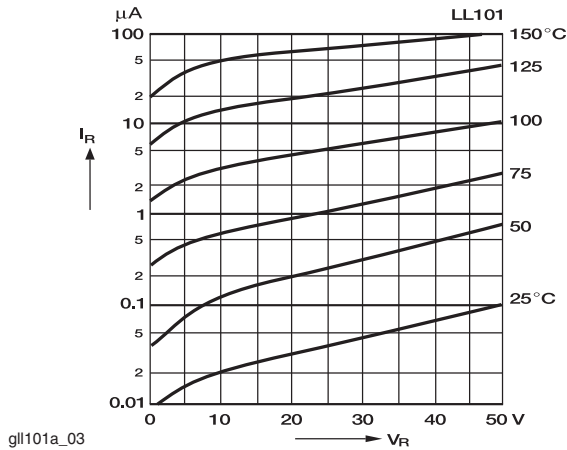


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

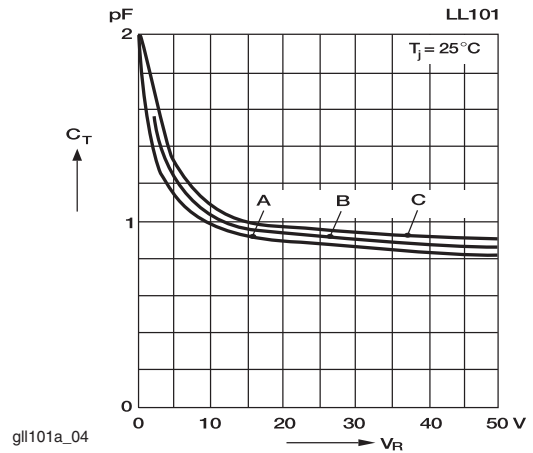
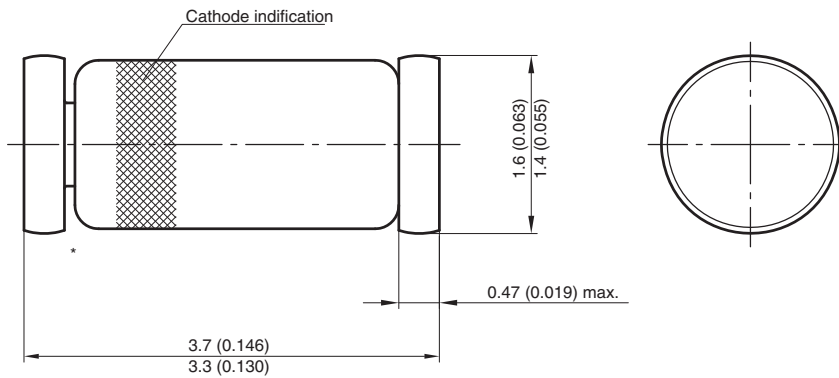


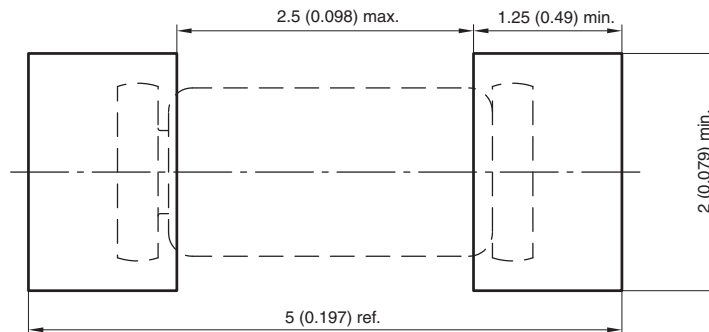
Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage

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



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

Foot print recommendation:



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