



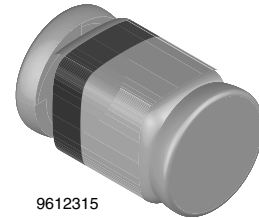
## Small Signal Schottky Diodes

### Features

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**



9612315

### Applications

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

### Mechanical Data

**Case:** MicroMELF

**Weight:** approx. 12 mg

**Cathode band color:** black

**Packaging codes/options:**

TR3/10 k per 13" reel (8 mm tape), 10 k/box

TR/2.5 k per 7" reel (8 mm tape), 12.5 k/box

### Parts Table

Part	Type differentiation	Ordering code	Remarks
MCL101A	$V_R = 60\text{ V}$ , $V_F$ at $I_F$ 1 mA max. 410 mV	MCL101A-TR3 or MCL101A-TR	Tape and Reel
MCL101B	$V_R = 50\text{ V}$ , $V_F$ at $I_F$ 1 mA max. 400 mV	MCL101B-TR3 or MCL101B-TR	Tape and Reel
MCL101C	$V_R = 40\text{ V}$ , $V_F$ at $I_F$ 1 mA max. 390 mV	MCL101C-TR3 or MCL101C-TR	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		MCL101A	$V_R$	60	V
		MCL101B	$V_R$	50	V
		MCL101C	$V_R$	40	V
Peak forward surge current	$t_p = 10\text{ }\mu\text{s}$		$I_{FSM}$	2	A
Repetitive peak forward current			$I_{FRM}$	150	mA
Forward continuous current			$I_F$	30	mA

### Thermal Characteristics

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

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

### Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$I_R = 10\text{ }\mu\text{A}$	MCL101A	$V_{(BR)}$	60			V
		MCL101B	$V_{(BR)}$	50			V
		MCL101C	$V_{(BR)}$	40			V
Leakage current	$V_R = 50\text{ V}$	MCL101A	$I_R$			200	nA
	$V_R = 40\text{ V}$	MCL101B	$I_R$			200	nA
	$V_R = 30\text{ V}$	MCL101C	$I_R$			200	nA
Forward voltage drop	$I_F = 1\text{ mA}$	MCL101A	$V_F$			410	mV
		MCL101B	$V_F$			400	mV
		MCL101C	$V_F$			390	mV
	$I_F = 15\text{ mA}$	MCL101A	$V_F$			1000	mV
		MCL101B	$V_F$			950	mV
		MCL101C	$V_F$			900	mV
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}$	MCL101A	$C_D$			2	pF
		MCL101B	$C_D$			2.1	pF
		MCL101C	$C_D$			2.2	pF

### Typical Characteristics

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

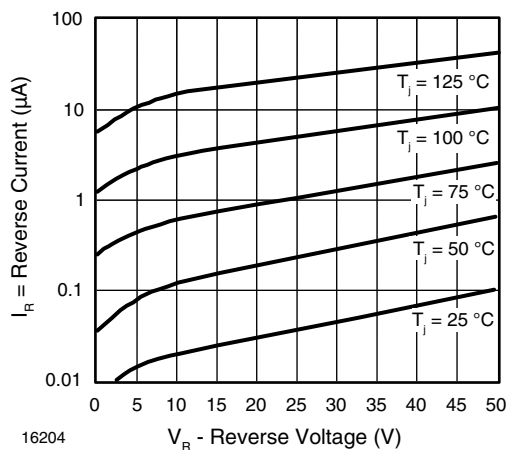


Figure 1. Reverse Current vs. Reverse Voltage

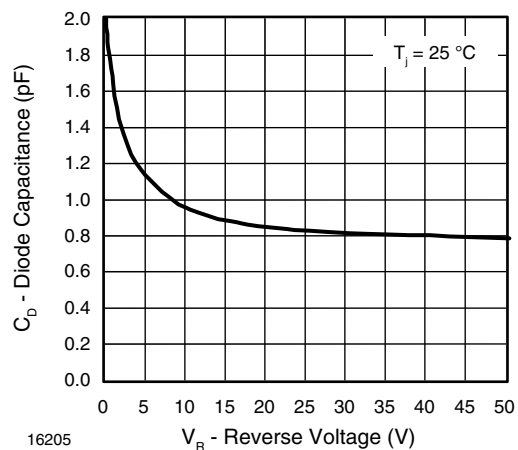
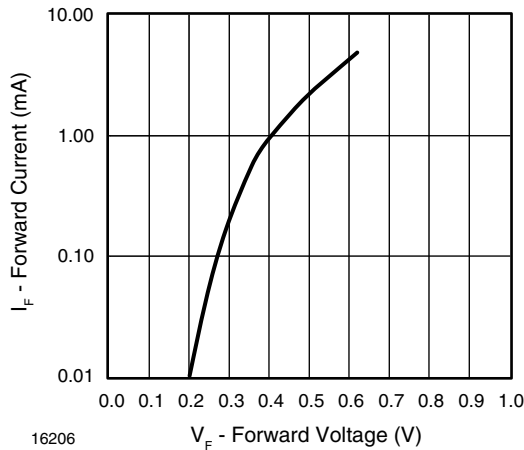


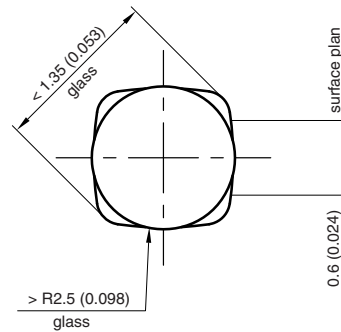
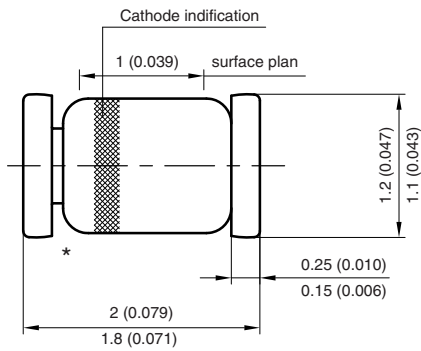
Figure 2. Diode Capacitance vs. Reverse Voltage



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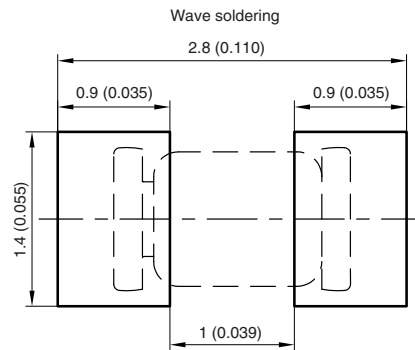
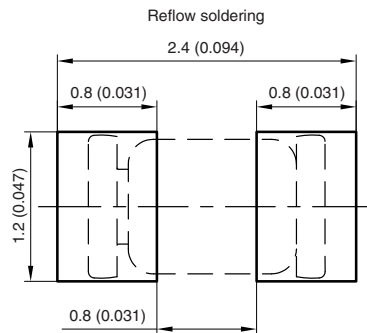
Figure 3. Forward Current vs. Forward Voltage

## Package Dimensions in millimeters (inches): MicromELF



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

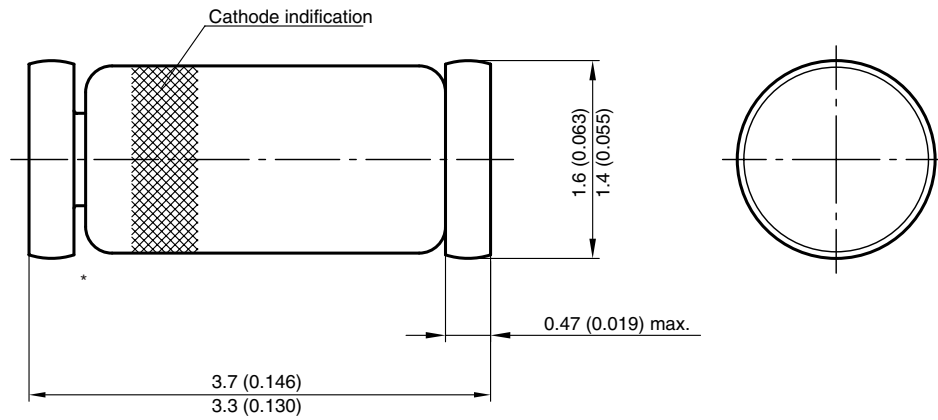
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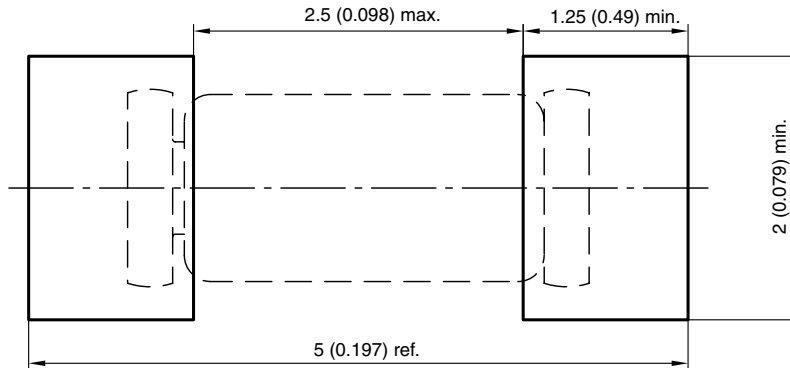


**PACKAGE DIMENSIONS** in millimeters (inches)



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

Foot print recommendation:



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