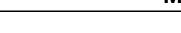
# MCL101A, MCL101B, MCL101C



### **Vishay Semiconductors**

RoHS

COMPLIANT HALOGEN

FREE

### **Small Signal Schottky Diodes**

#### FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- AEC-Q101 gualified
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>
- 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		
MCL101A	$V_{R}$ = 60 V, $V_{F}$ at $I_{F}$ 1 mA max. 410 mV	MCL101A-TR3 or MCL101A-TR	Single	Tape and reel		
MCL101B	$V_R = 50 \text{ V}, V_F \text{ at } I_F 1 \text{ mA max}. 400 \text{ mV}$	MCL101B-TR3 or MCL101B-TR	Single	Tape and reel		
MCL101C	$V_R$ = 40 V, $V_F$ at $I_F$ 1 mA max. 390 mV	MCL101C-TR3 or MCL101C-TR	Single	Tape and reel		

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		MCL101A	V <sub>R</sub>	60	V	
Reverse voltage		MCL101B	V <sub>R</sub>	50	V	
		MCL101C	V <sub>R</sub>	40	V	
Peak forward surge current	t <sub>p</sub> = 10 μs		I <sub>FSM</sub>	2	А	
Repetitive peak forward current			I <sub>FRM</sub>	150	mA	
Forward continuous current			I <sub>F</sub>	30	mA	

<b>THERMAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °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 <sub>thJA</sub>	320	K/W		
Junction temperature		Tj	125	°C		
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C		

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For technical questions within your region: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u> THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT <u>www.vishay.com/doc?91000</u>

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#### DESIGN SUPPORT TOOLS click logo to get started



#### **MECHANICAL DATA**

Case: MicroMELF

Weight: approx. 12 mg

Cathode band color: black

#### Packaging codes/options:

TR3/10K per 13" reel (8 mm tape), 10K/box TR/2.5K per 7" reel (8 mm tape), 12.5K/box



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# MCL101A, MCL101B, MCL101C

### **Vishay Semiconductors**

<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
	I <sub>R</sub> = 10 μA	MCL101A	V <sub>(BR)</sub>	60			V
Reverse breakdown voltage		MCL101B	V <sub>(BR)</sub>	50			V
		MCL101C	V <sub>(BR)</sub>	40			V
	V <sub>R</sub> = 50 V	MCL101A	I <sub>R</sub>			200	nA
Leakage current	V <sub>R</sub> = 40 V	MCL101B	I <sub>R</sub>			200	nA
	V <sub>R</sub> = 30 V	MCL101C	I <sub>R</sub>			200	nA
	I <sub>F</sub> = 1 mA	MCL101A	V <sub>F</sub>			410	mV
		MCL101B	V <sub>F</sub>			400	mV
Forward voltage drop		MCL101C	V <sub>F</sub>			390	mV
Forward voltage drop		MCL101A	V <sub>F</sub>			1000	mV
	I <sub>F</sub> = 15 mA	MCL101B	V <sub>F</sub>			950	mV
		MCL101C	V <sub>F</sub>			900	mV
	V <sub>R</sub> = 0 V, f = 1 MHz	MCL101A	CD			2	pF
Diode capacitance		MCL101B	CD			2.1	pF
		MCL101C	CD			2.2	pF

TYPICAL CHARACTERISTICS (Tamb = 25 °C, unless otherwise specified)

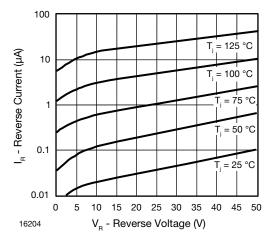


Fig. 1 - Reverse Current vs. Reverse Voltage

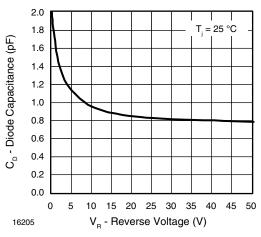
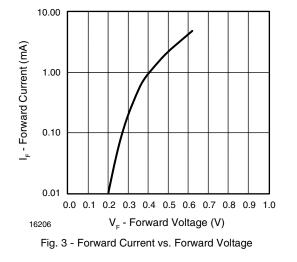


Fig. 2 - Diode Capacitance vs. Reverse Voltage



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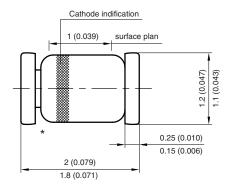
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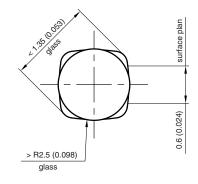
## MCL101A, MCL101B, MCL101C

**Vishay Semiconductors** 

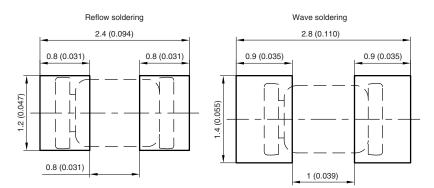
#### PACKAGE DIMENSIONS in millimeters (inches): MicroMELF



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



Foot print recommendation:



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