MCL101A, MCL101B, MCL101C



RoHS

COMPLIANT HALOGEN

FREE

Small Signal Schottky Diodes

FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- 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	$V_R = 60 \text{ V}, V_F \text{ at } I_F 1 \text{ mA max. } 410 \text{ mV}$	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	$V_R = 40 \text{ V}, V_F \text{ at } I_F 1 \text{ mA max}. 390 \text{ mV}$	MCL101C-TR3 or MCL101C-TR	Single	Tape and reel		

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
		MCL101A	V _R	60	V
Reverse voltage		MCL101B	V _R	50	V
		MCL101C	V _R	40	V
Peak forward surge current	t _p = 10 μs		I _{FSM}	2	A
Repetitive peak forward current			I _{FRM}	150	mA
Forward continuous current			I _F	30	mA

THERMAL CHARACTERISTICS (T _{amb} = 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 _{thJA}	320	K/W		
Junction temperature		Tj	125	°C		
Storage temperature range		T _{stg}	-65 to +150	°C		

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LINKS TO ADDITIONAL RESOURCES



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 Www.vishay.com

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

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

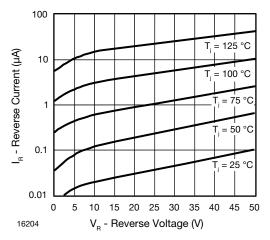


Fig. 1 - Reverse Current vs. Reverse Voltage

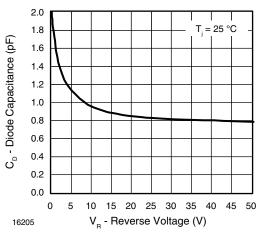
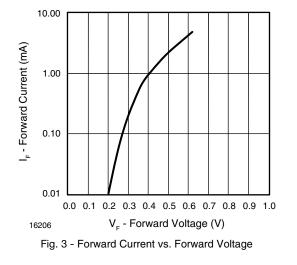


Fig. 2 - Diode Capacitance vs. Reverse Voltage



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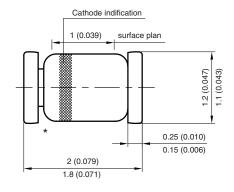
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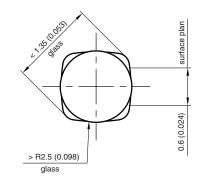
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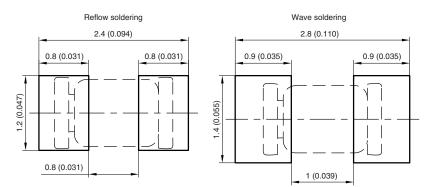
PACKAGE DIMENSIONS in millimeters (inches): MicroMELF



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



Foot print recommendation:



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