Small Signal Schottky Diodes

FEATURES

- Integrated protection ring against static discharge
- Low capacitance
- Low leakage current
- Low forward voltage drop
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE

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

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 DIFFERENTATION	ORDERING CODE	INTERNAL CONSTRUCTION	REMARKS
MCL101A	V_R = 60 V, V_F at I_F 1 mA max. 410 mV	MCL101A-TR3 or MCL101A-TR	Single diode	Tape and reel
MCL101B	V_R = 50 V, V_F at I_F 1 mA max. 400 mV	MCL101B-TR3 or MCL101B-TR	Single diode	Tape and reel
MCL101C	V_R = 40 V, V_F at I_F 1 mA max. 390 mV	MCL101C-TR3 or MCL101C-TR	Single diode	Tape and reel

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 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		T_j	125	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C

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

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

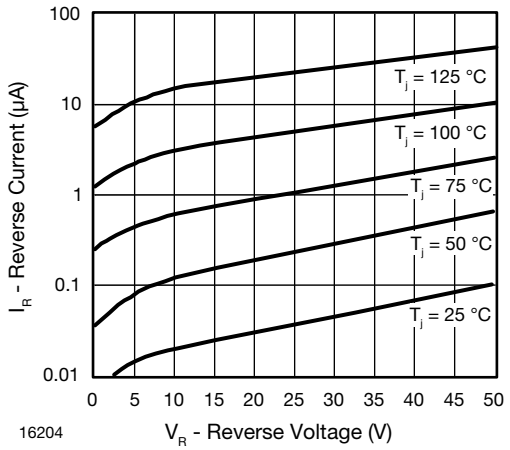


Fig. 1 - Reverse Current vs. Reverse Voltage

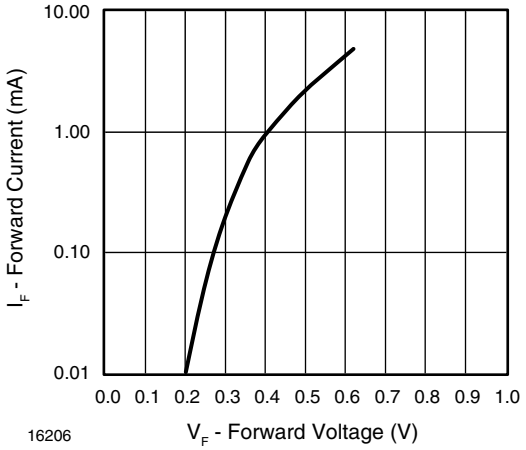


Fig. 3 - Forward Current vs. Forward Voltage

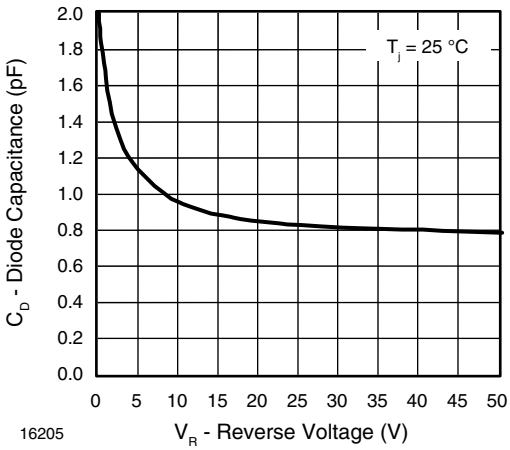
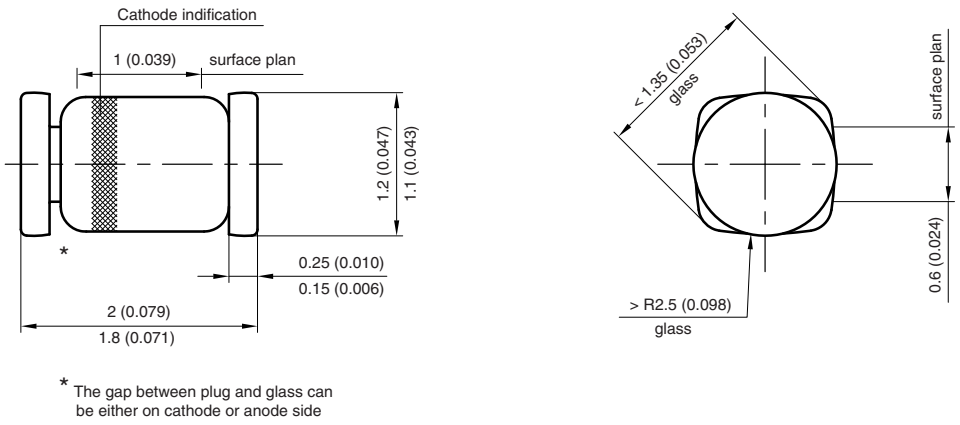


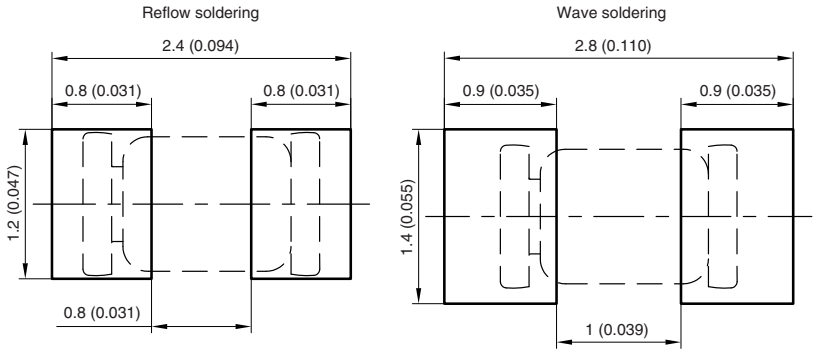
Fig. 2 - Diode Capacitance vs. Reverse Voltage

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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