



Small Signal Schottky Diodes



LINKS TO ADDITIONAL RESOURCES



3D Models



Marking



Parametric Search



Order Samples

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

FEATURES

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

**RoHS**
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- IHF-detector
- Protection circuit
- Small battery charger
- AC/DC / DC/DC converter for notebooks

PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	CIRCUIT CONFIGURATION	REMARKS
MCL103A	$V_R = 40\text{ V}$	MCL103A-TR3 or MCL103A-TR	Single	Tape and reel
MCL103B	$V_R = 30\text{ V}$	MCL103B-TR3 or MCL103B-TR	Single	Tape and reel
MCL103C	$V_R = 20\text{ V}$	MCL103C-TR3 or MCL103C-TR	Single	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		MCL103A	V_R	40	V
		MCL103B	V_R	30	V
		MCL103C	V_R	20	V
Forward continuous current			I_F	200	mA
Peak forward surge current	$t_p = 300\text{ }\mu\text{s}$, square pulse		I_{FSM}	15	A
Power dissipation			P_{tot}	400	mW

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}	250	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	SYMBOL	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 10\text{ }\mu\text{A}$	MCL103A	$V_{(BR)}$	40			V
		MCL103B	$V_{(BR)}$	30			V
		MCL103C	$V_{(BR)}$	20			V
Leakage current	$V_R = 30\text{ V}$	MCL103A	I_R			5	μA
	$V_R = 20\text{ V}$	MCL103B	I_R			5	μA
	$V_R = 10\text{ V}$	MCL103C	I_R			5	μA
Forward voltage drop	$I_F = 20\text{ mA}$		V_F			370	mV
	$I_F = 200\text{ mA}$		V_F			600	mV
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$		C_D		50		pF
Reverse recovery time	$I_F = I_R = 50\text{ mA}$ to 200 mA , recovery to $0.1\text{ }I_R$		t_{rr}		10		ns

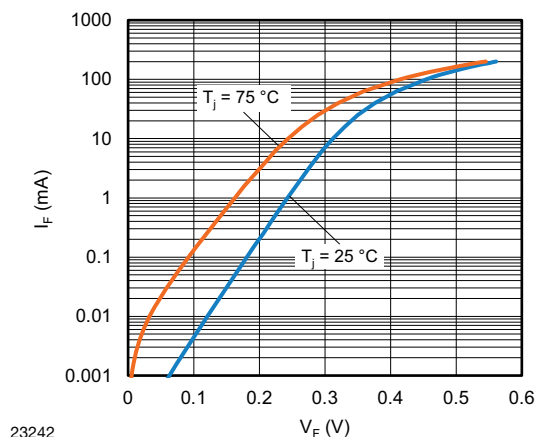
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Fig. 1 - Typical Forward Current vs. Forward Voltage

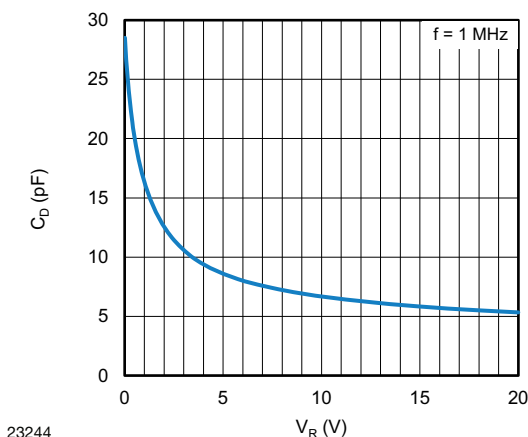


Fig. 3 - Typical Capacitance vs. Reverse Voltage

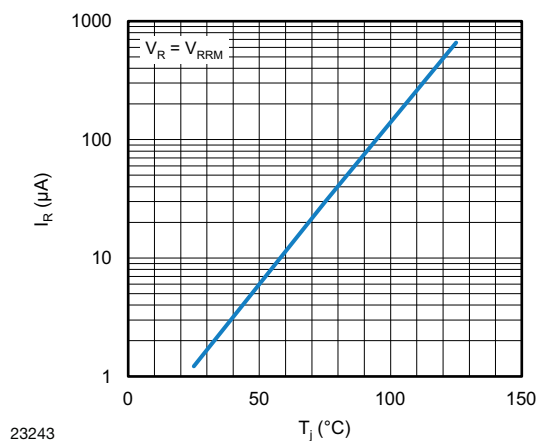
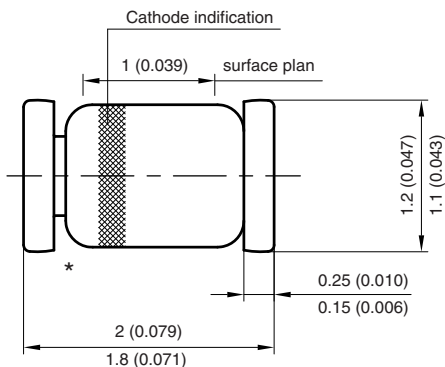


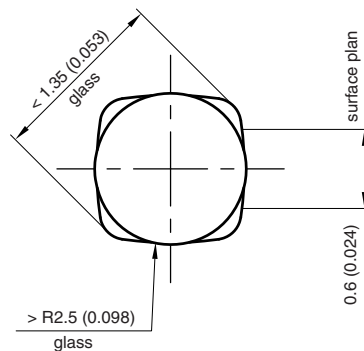
Fig. 2 - Typical Reverse Current vs. Junction Temperature



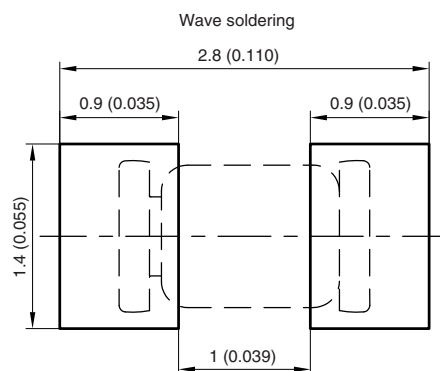
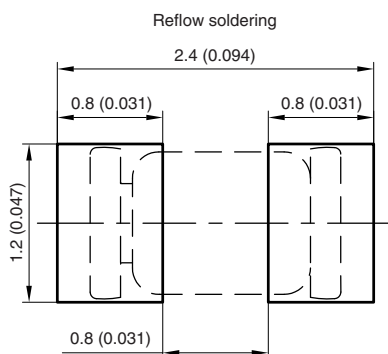
PACKAGE DIMENSIONS in millimeters (inches): **MicroMELF**



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



Foot print recommendation:



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96 12072



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