

Small Signal Schottky Diodes



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

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 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	SYMBOL	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	I _R = 10 μA	MCL103A	V _(BR)	40			V
		MCL103B	V _(BR)	30			V
		MCL103C	V _(BR)	20			V
Leakage current	V _R = 30 V	MCL103A	I _R			5	μA
	V _R = 20 V	MCL103B	I _R			5	μA
	V _R = 10 V	MCL103C	I _R			5	μA
Forward voltage drop	I _F = 20 mA		V _F			370	mV
	I _F = 200 mA		V _F			600	mV
Diode capacitance	V _R = 0 V, f = 1 MHz		C _D		50		pF
Reverse recovery time	I _F = I _R = 50 mA to 200 mA, recovery to 0.1 I _R		t _{rr}		10		ns

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

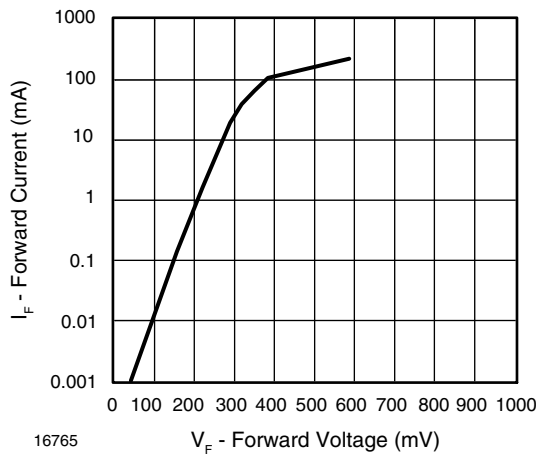


Fig. 1 - Forward Current vs. Forward Voltage

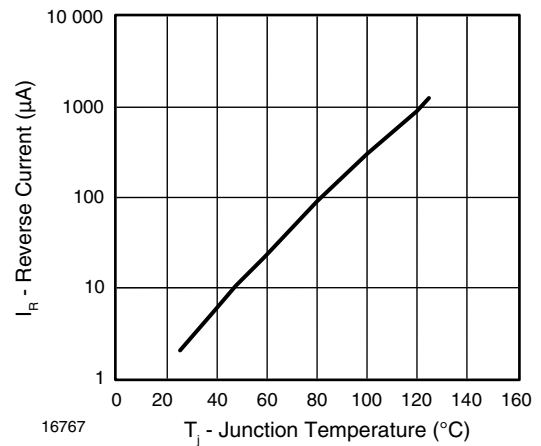


Fig. 3 - Reverse Current vs. Junction Temperature

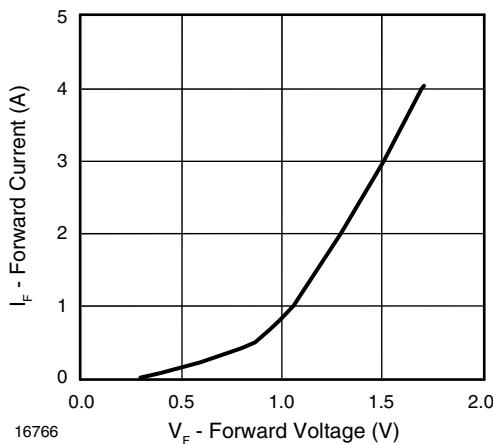


Fig. 2 - Forward Current vs. Forward Voltage

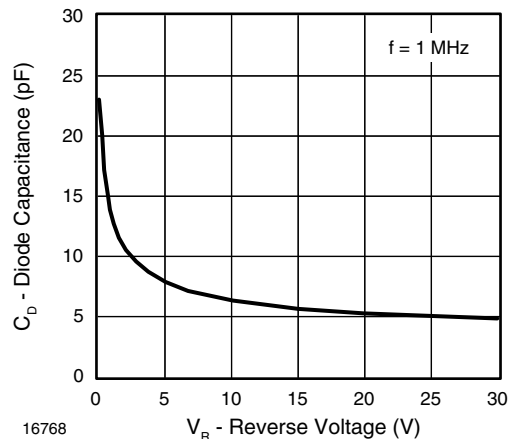


Fig. 4 - Diode Capacitance vs. Reverse Voltage

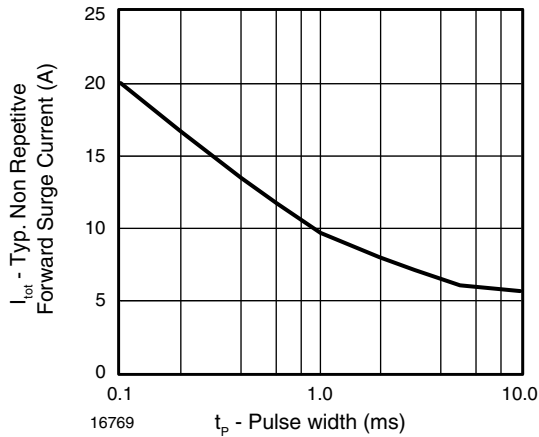
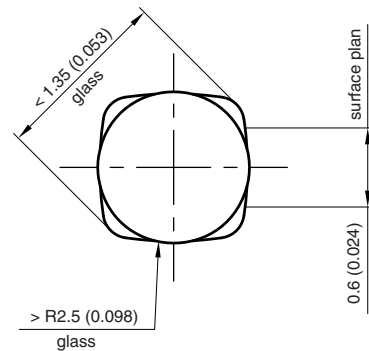
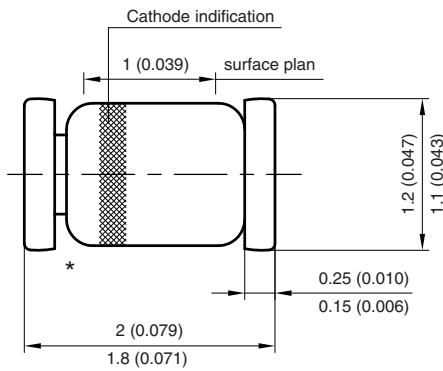


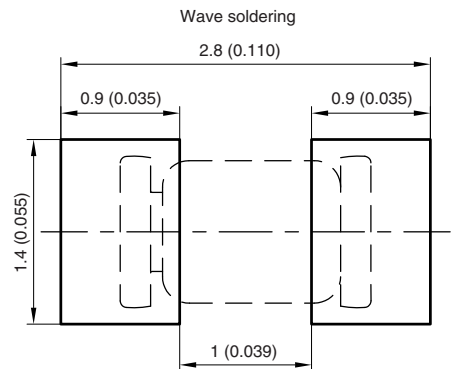
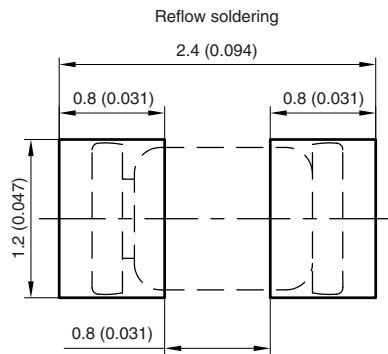
Fig. 5 - Typical Non-Repetitive Forward Surge Current vs. Pulse Width

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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