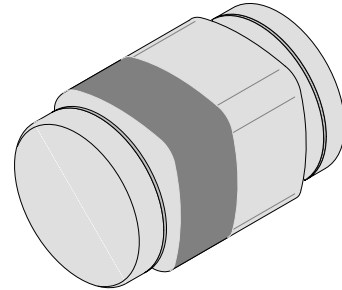


## Micro Melf Switchind diode

### Features

- Saving space
- Hermetic sealed parts
- Fits onto SOD 323 / SOT 23 footprints
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- Micro Melf package



**Pb Free Product**

### Applications

Extreme fast switches

### Absolute Maximum Ratings

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Value	Unit
Repetitive peak reverse voltage			$V_{RRM}$	100	V
Reverse voltage			$V_R$	75	V
Peak forward surge current	$t_p=1\mu\text{s}$		$I_{FSM}$	2	A
Repetitive peak forward current			$I_{FRM}$	450	mA
Forward current			$I_F$	200	mA
Average forward current	$V_R=0$		$I_{FAV}$	150	mA
Power dissipation			$P_V$	500	mW
Junction temperature			$T_j$	175	$^\circ\text{C}$
Storage temperature range			$T_{stg}$	-65...+175	$^\circ\text{C}$

### Maximum Thermal Resistance

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	mounted on epoxy-glass hard tissue, Fig. 1, 35 $\mu\text{m}$ copper clad, 0.9 mm <sup>2</sup> copper area per electrode	$R_{thJA}$	500	K/W

## Electrical Characteristics

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=5\text{mA}$	MCL4448	$V_F$	0.62		0.72	V
	$I_F=50\text{mA}$	MCL4148	$V_F$		0.86	1	V
	$I_F=100\text{mA}$	MCL4448	$V_F$		0.93	1	V
Reverse current	$V_R=20\text{V}$		$I_R$			25	nA
	$V_R=20\text{V}, T_j=150^\circ\text{C}$		$I_R$			50	$\mu\text{A}$
	$V_R=75\text{V}$		$I_R$			5	$\mu\text{A}$
Breakdown voltage	$I_R=100\mu\text{A}, t_p/T=0.01,$ $t_p=0.3\text{ms}$		$V_{(BR)}$	100			V
Diode capacitance	$V_R=0, f=1\text{MHz}, V_{HF}=50\text{mV}$		$C_D$			4	pF
Rectification efficiency	$V_{HF}=2\text{V}, f=100\text{MHz}$		$\eta_r$	45			%
Reverse recovery time	$I_F=I_R=10\text{mA}, i_R=1\text{mA}$		$t_{rr}$			8	ns
	$I_F=10\text{mA}, V_R=6\text{V}, i_R=0.1I_R,$ $R_L=100\Omega$		$t_{rr}$			4	ns

## Characteristics ( $T_j = 25^\circ\text{C}$ unless otherwise specified)

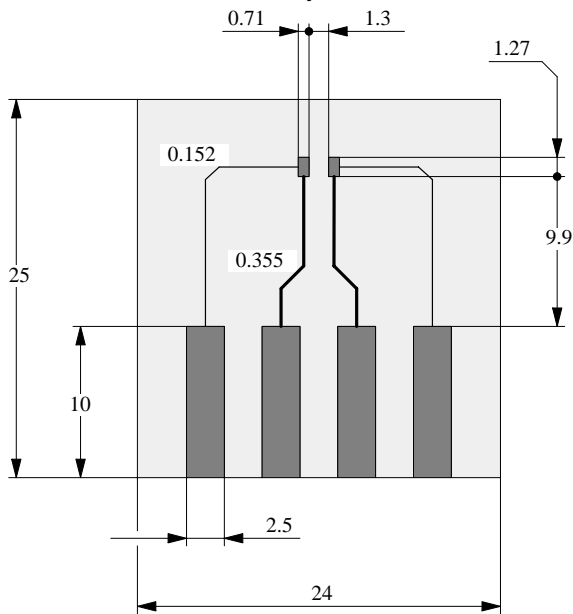


Figure 1. Board for  $R_{thJA}$  definition (in mm)

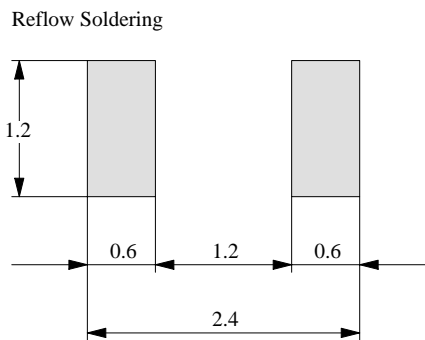


Figure 2. Recommended foot pads (in mm)

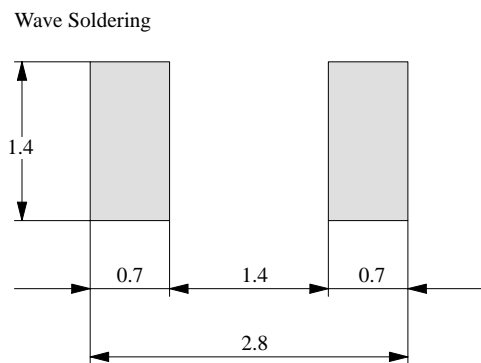


Figure 3. Recommended foot pads (in mm)

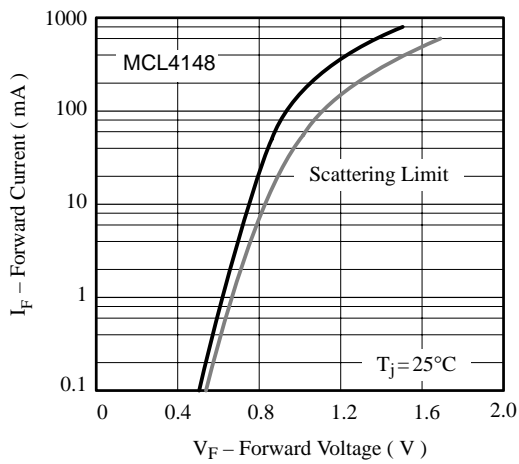


Figure 4. Forward Current vs. Forward Voltage

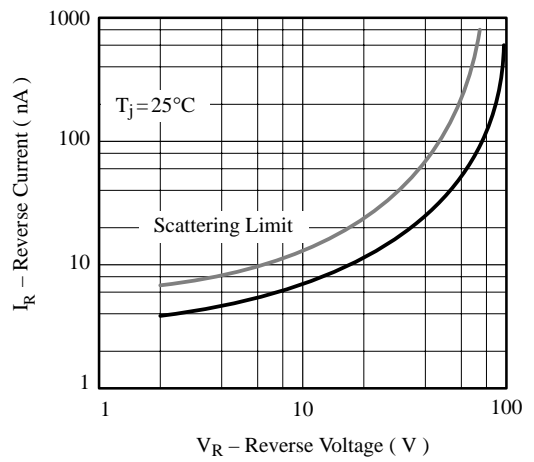


Figure 6. Reverse Current vs. Reverse Voltage

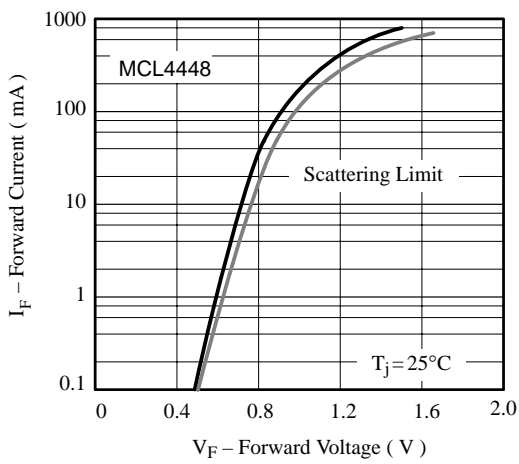


Figure 5. Forward Current vs. Forward Voltage

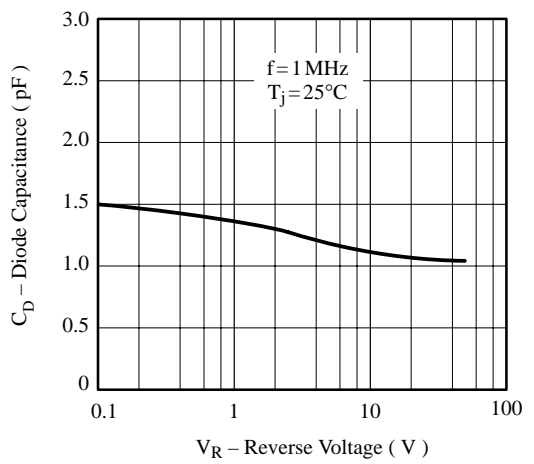
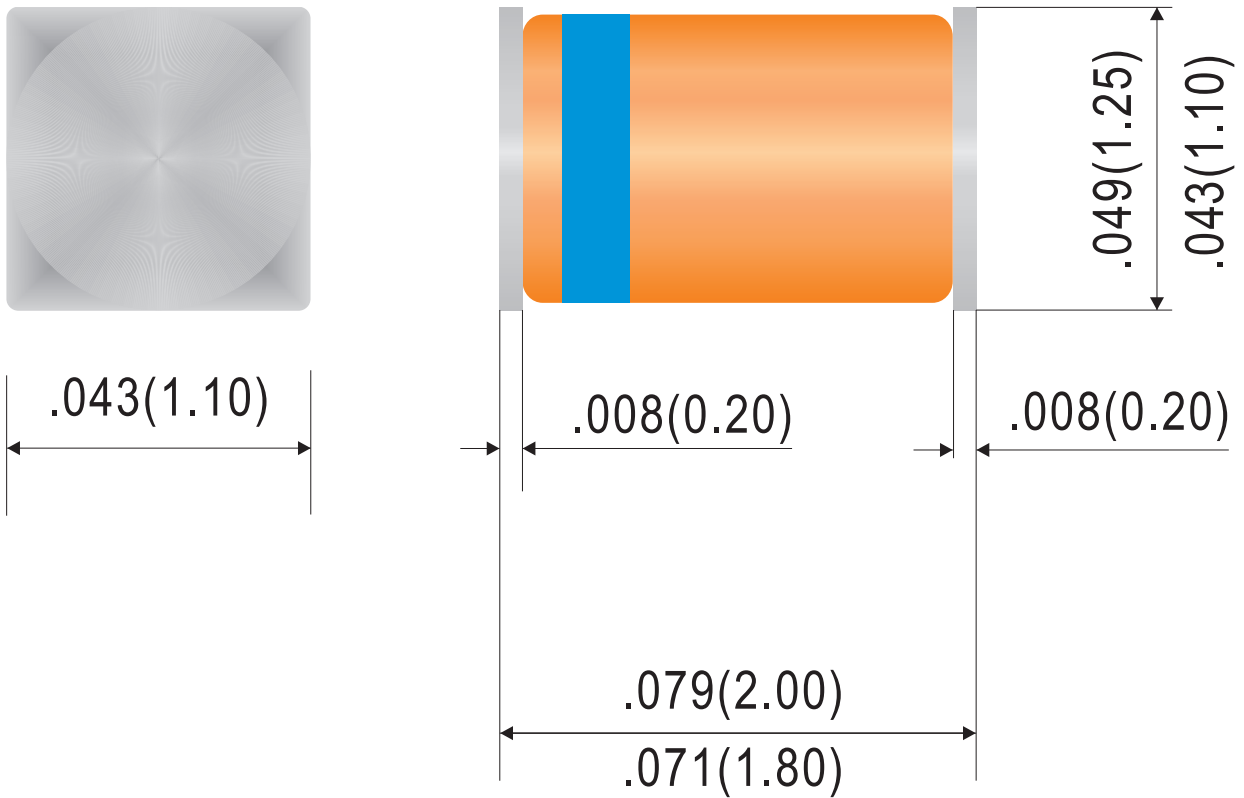


Figure 7. Diode Capacitance vs. Reverse Voltage

# Outline Drawing

# MICRO-MELF



Dimensions in inches and (millimeters)