

# High-speed switching diode

## Features

1. Saving space
2. Fits onto SOD 323/SOT 23 footprints
3. Micro Melf package



## Applications

Extreme fast switches

## Construction

Silicon epitaxial planar

## 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	on PC board 50mm×50mm×1.6mm	$R_{thJA}$	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
	$I_F=10\text{mA}$	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
	$I_F=10\text{mA}, V_R=6\text{V}, i_R=0.1 \times I_R, R_L=100\ \Omega$		$t_{rr}$			4	ns

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

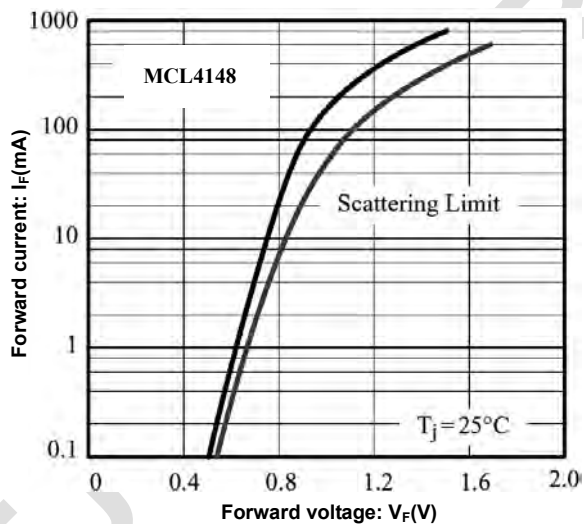


Figure 1. Forward current vs. forward voltage

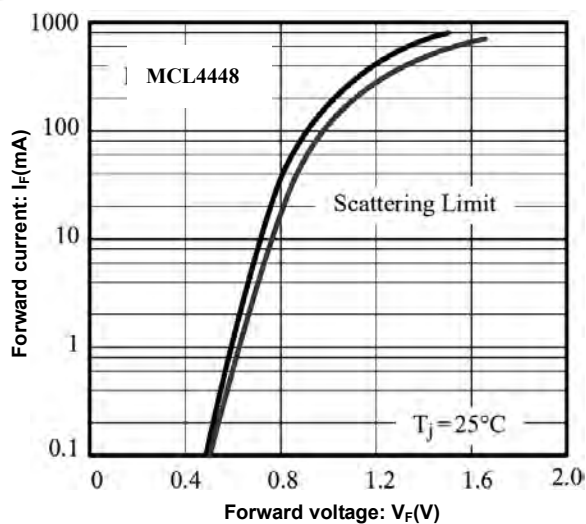


Figure 2. Forward current vs. forward voltage

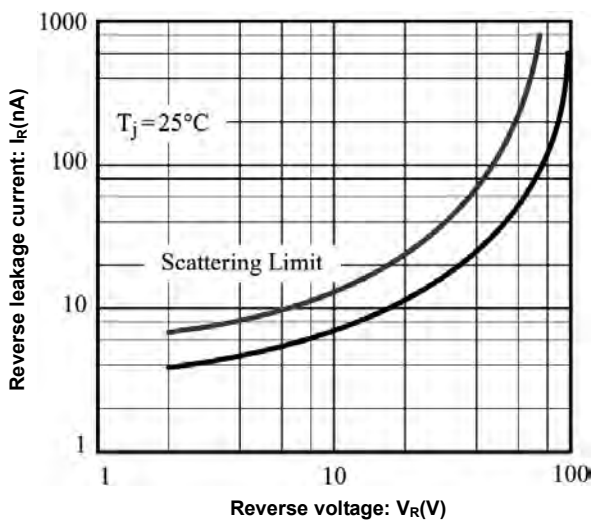


Figure 3. Reverse current vs. reverse voltage

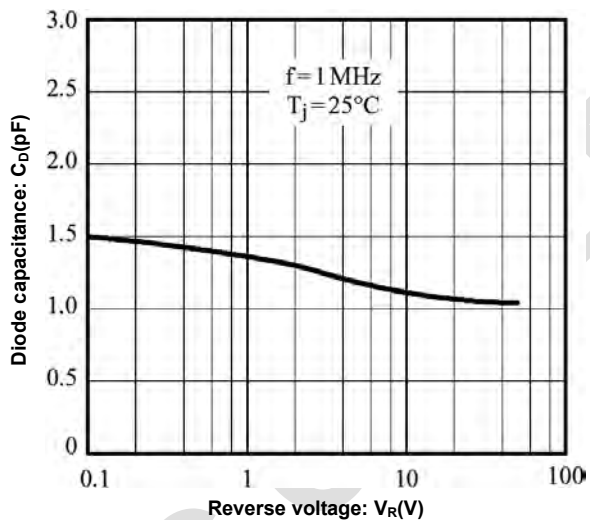
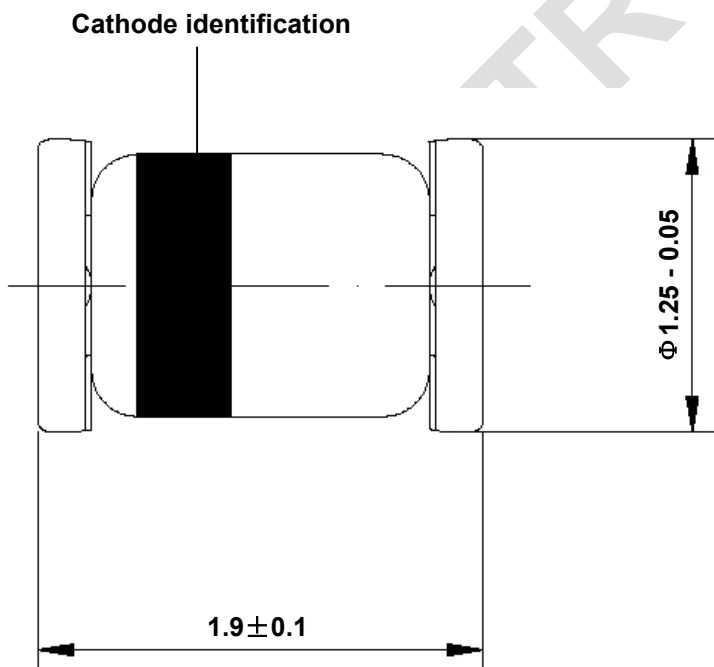


Figure 4. Diode capacitance vs. reverse voltage

## Dimensions in mm



Glass Case  
Micro Melf

