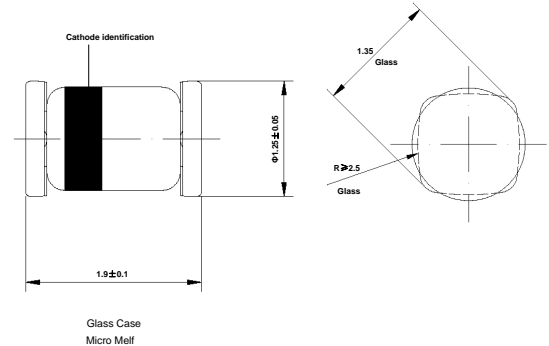




### Features

- Silicon Epitaxial Planar Diodes
- Saving space
- Hermetic sealed parts
- Fits onto SOD323 / SOT23 footprints
- Electrical data identical with the devices 1N4148 and 1N4448 respectively
- Micro Melf package
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### Applications

- Extreme fast switches

### Mechanical Data

**Case:** MicroMELF Glass case

**Weight:** approx. 12 mg

**Cathode Band Color:** Black

### Absolute Maximum Ratings

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

Parameter	Test condition	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 continuous current		$I_F$	200	mA
Average forward current	$V_R = 0$	$I_{FAV}$	150	mA
Power dissipation		$P_{tot}$	500	mW

## Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	mounted on epoxy-glass hard tissue, Fig. 5, 35 $\mu\text{m}$ copper clad, 0.9 $\text{mm}^2$ copper area per electrode	$R_{thJA}$	500	K/W
Junction temperature		$T_j$	175	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 175	$^{\circ}\text{C}$

## Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	$I_F = 5\text{ mA}$	MCL4448	$V_F$	620		720	mV
	$I_F = 50\text{ mA}$	MCL4148	$V_F$		860	1000	mV
	$I_F = 100\text{ mA}$	MCL4448	$V_F$		930	1000	mV
Reverse current	$V_R = 20\text{ V}$		$I_R$			25	nA
	$V_R = 20\text{ V}$ , $T_j = 150\text{ }^{\circ}\text{C}$		$I_R$			50	$\mu\text{A}$
	$V_R = 75\text{ V}$		$I_R$			5	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$		$V_{(BR)}$	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
	$I_F = 10\text{ mA}$ , $V_R = 6\text{ V}$ , $i_R = 0.1 \times I_R$ , $R_L = 100\text{ }\Omega$		$t_{rr}$			4	ns

## Typical Characteristics

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

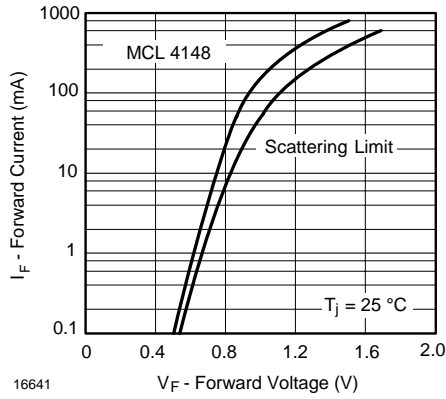


Figure 1. Forward Current vs. Forward Voltage

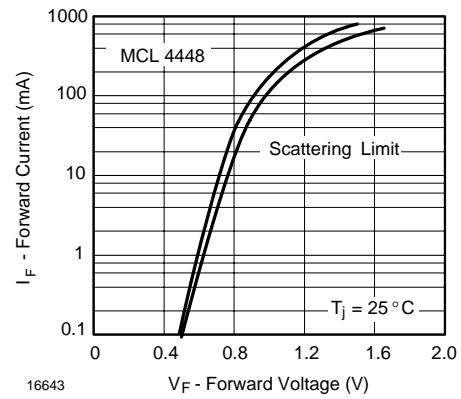


Figure 2. Forward Current vs. Forward Voltage

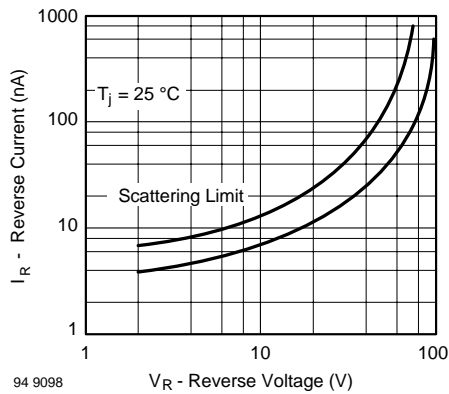


Figure 3. Reverse Current vs. Reverse Voltage

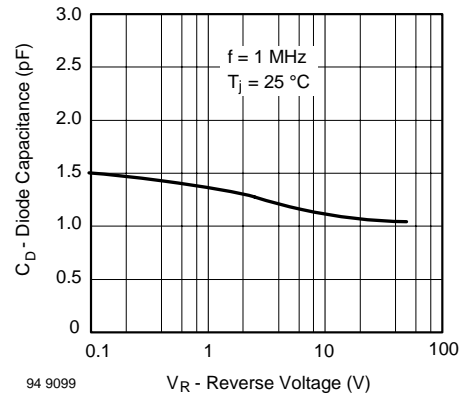


Figure 4. Diode Capacitance vs. Reverse Voltage