

## High-speed switching diode

### Features

1. Small surface mounting type
2. High reliability
3. High speed ( $t_r \leq 4$  ns)



### 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			$I_{FRM}$	500	mA
Forward current			$I_F$	300	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

Stresses exceeding maximum ratings may damage the device. Maximum ratings are stress ratings only. Functional operation above the recommended operating conditions is not implied. Extended exposure to stresses above the recommended operating conditions may affect device reliability.

## Electrical Characteristics

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

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=5\text{mA}$	LL4448	$V_F$	0.62		0.72	V
	$I_F=10\text{mA}$	LL4148	$V_F$		0.86	1	V
	$I_F=100\text{mA}$	LL4448	$V_F$		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)

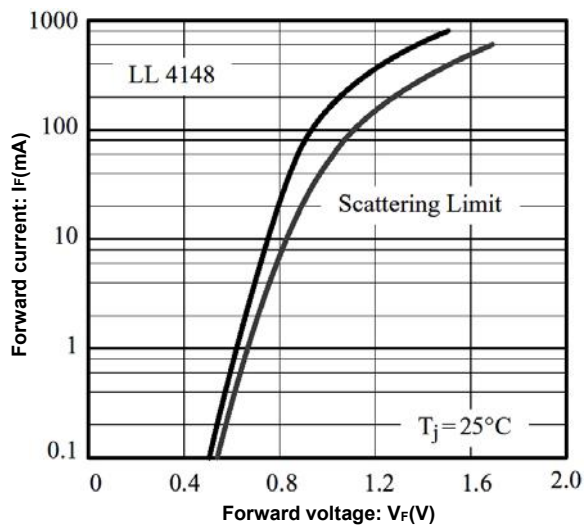


Figure 1. Forward current vs. forward voltage

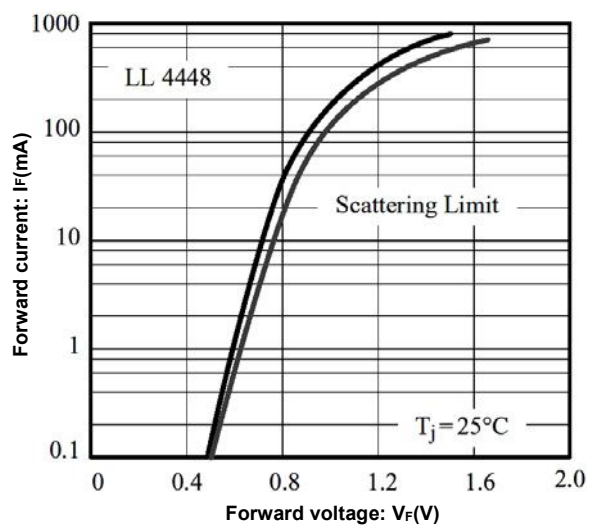


Figure 2. Forward current vs. forward voltage

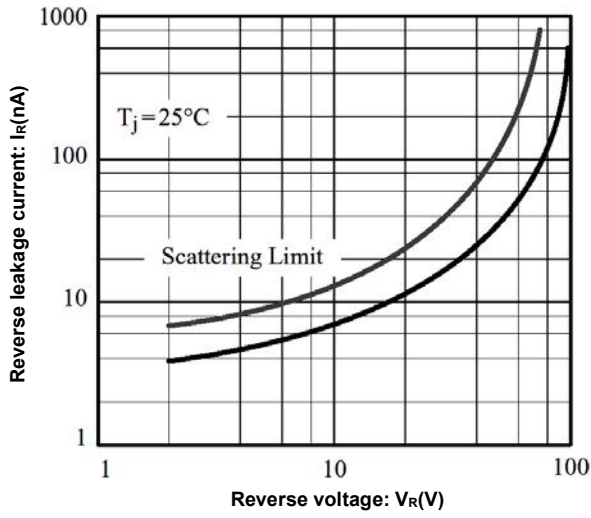


Figure 3. Reverse current vs. reverse voltage

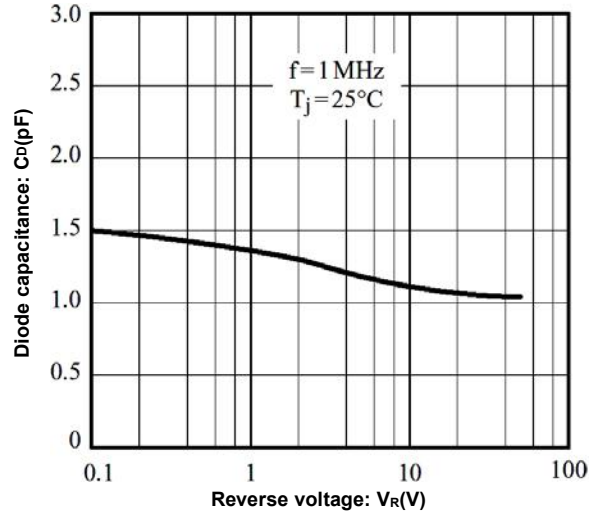
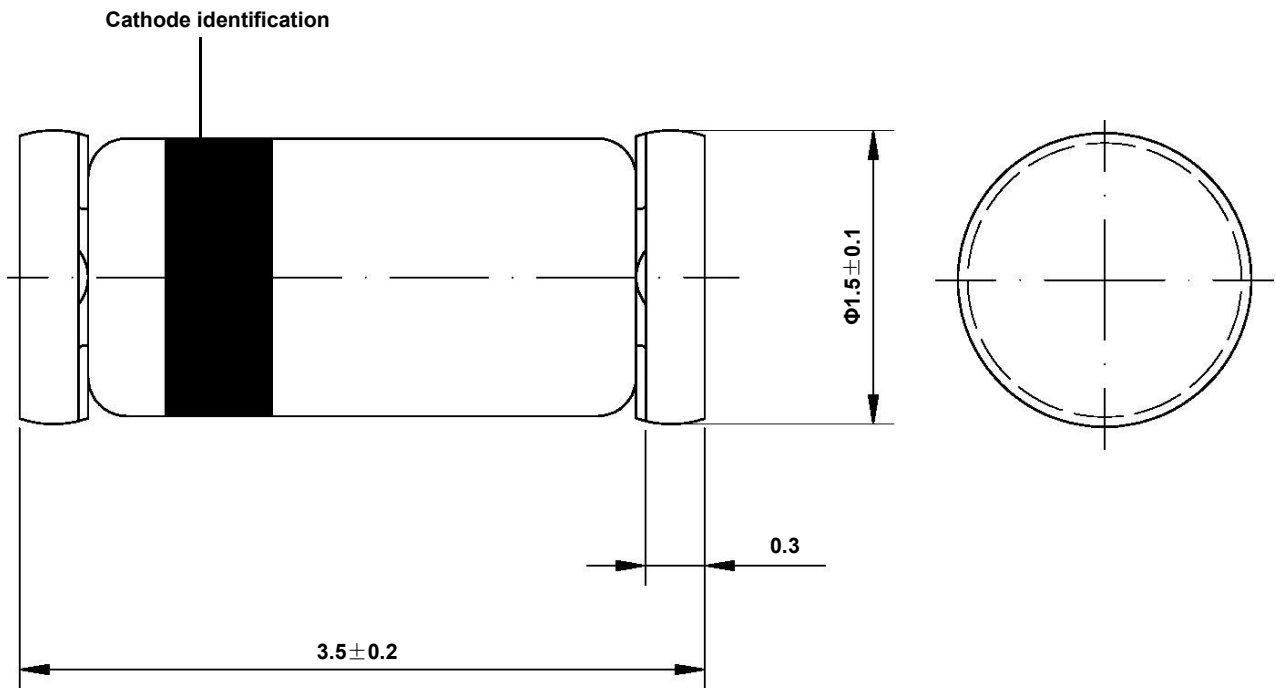


Figure 4. Diode capacitance vs. reverse voltage

## Dimensions in mm



Glass Case  
Mini Melf / SOD-80  
JEDEC DO-213 AA