

# MCL4148

## Silicon Epitaxial Planar Switching Diode

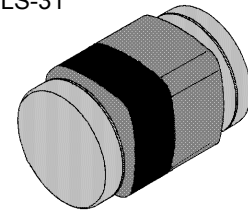
### Features

- Saving space
- Hermetic sealed parts
- Fits onto SOD 323 / SOT 23 footprints
- Electrical data identical with the device 1N4148

### Applications

Extreme fast switches

LS-31

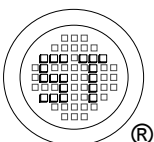


Glass Case MicroMELF

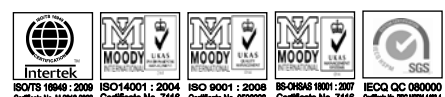
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Peak Reverse Voltage	$V_{RM}$	100	V
Reverse Voltage	$V_R$	75	V
Average Rectified Forward Current	$I_{F(AV)}$	200	mA
Repetitive Peak Forward Current	$I_{FRM}$	450	mA
Non-repetitive Peak Forward Surge Current	$I_{FSM}$	0.5 1 4	A
		at $t = 1$ s at $t = 1$ ms at $t = 1$ $\mu$ s	
Power Dissipation	$P_{tot}$	500 <sup>1)</sup>	mW
Junction Temperature	$T_j$	175	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	- 65 to + 175	$^\circ\text{C}$

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature.



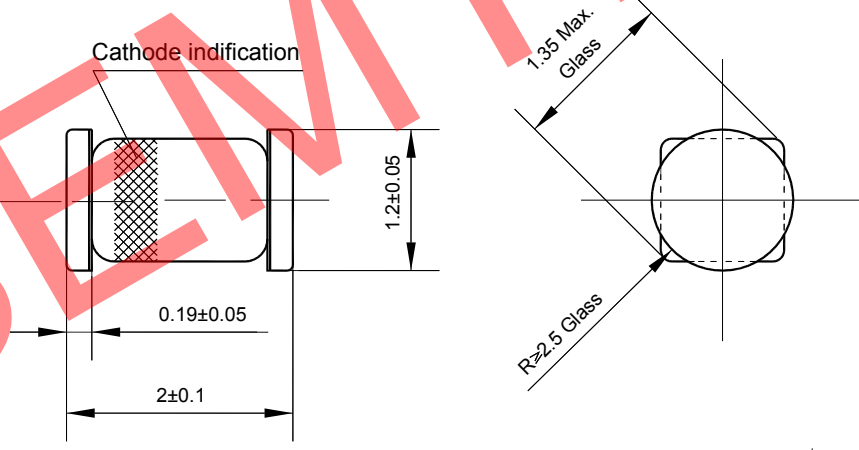
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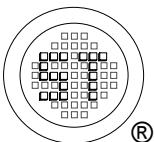
## Characteristics at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Min.	Max.	Unit
Reverse Breakdown Voltage at $I_R = 100 \mu\text{A}$	$V_{(BR)R}$	100	-	V
Forward Voltage at $I_F = 50 \text{ mA}$	$V_F$	-	1	V
Leakage Current at $V_R = 20 \text{ V}$ at $V_R = 75 \text{ V}$ at $V_R = 20 \text{ V}, T_j = 150^\circ\text{C}$	$I_R$ $I_R$ $I_R$	- - -	25 5 50	nA $\mu\text{A}$ $\mu\text{A}$
Capacitance at $V_R = 0, f = 1 \text{ MHz}$	$C_{\text{tot}}$	-	4	pF
Voltage Rise when Switching ON tested with 50 mA Forward Pulses $t_p = 0.1 \text{ s}$ , Rise Time < 30 ns, $f_p = 5 \text{ to } 100 \text{ KHz}$	$V_{\text{tr}}$	-	2.5	V
Reverse Recovery Time at $I_F = 10 \text{ mA}$ to $I_R = 1 \text{ mA}$ , $I_{\text{rr}} = 0.1 \times I_R$ , $V_R = 6 \text{ V}$ , $R_L = 100 \Omega$	$t_{\text{rr}}$	-	4	ns
Rectification Efficiency at $f = 100 \text{ MHz}, V_{\text{RF}} = 2 \text{ V}$	$\eta_v$	0.45	-	-



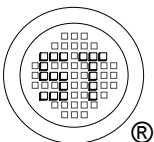
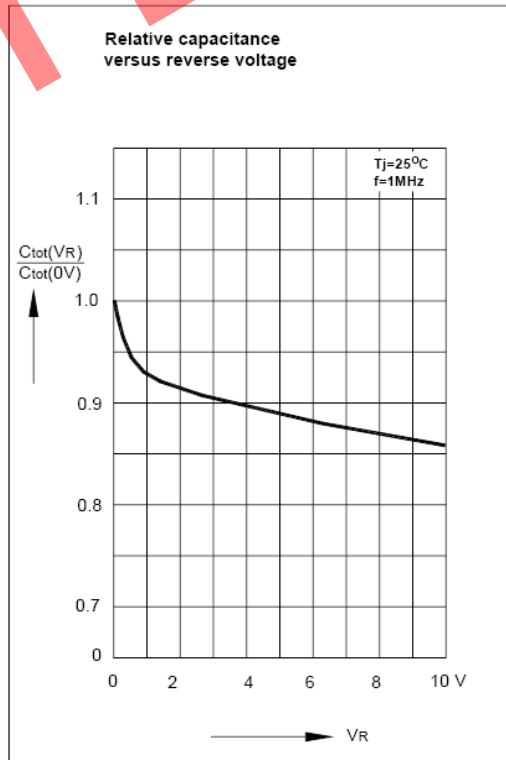
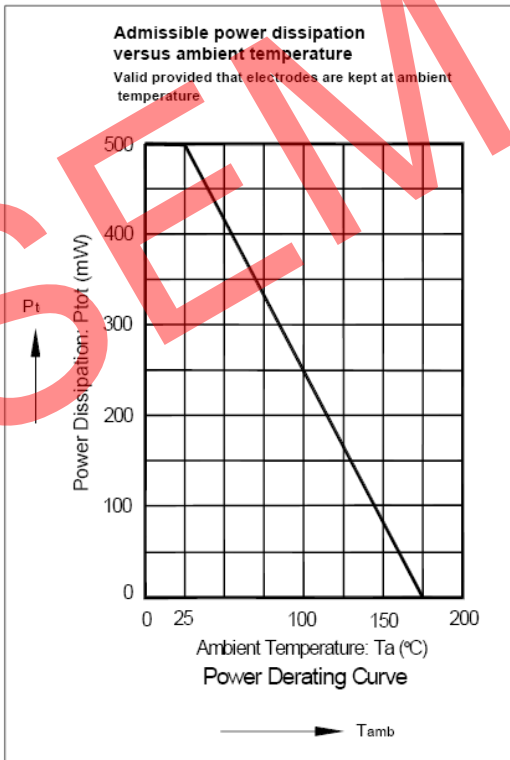
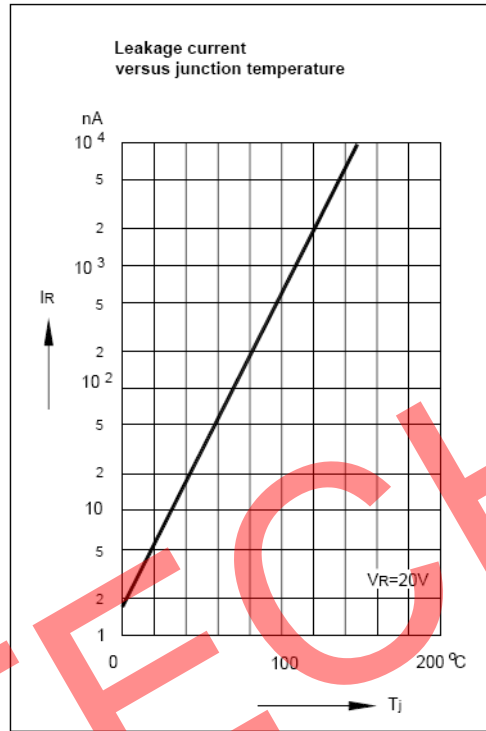
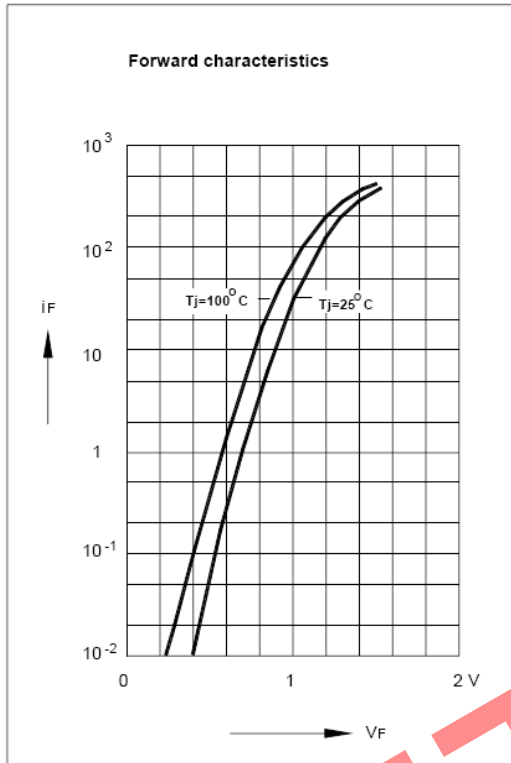
**Glass case MicroMELF**  
Dimensions in mm

technical drawings  
according to DIN  
specifications



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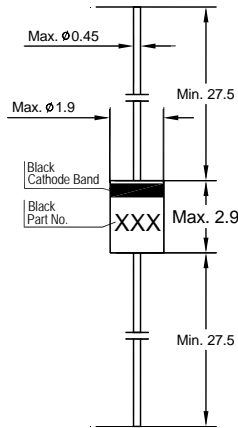


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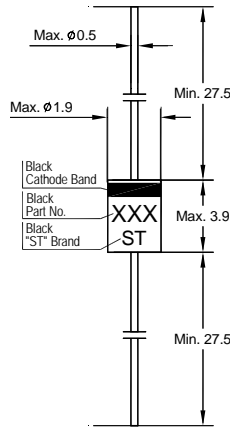


# Glass Case Package Outline

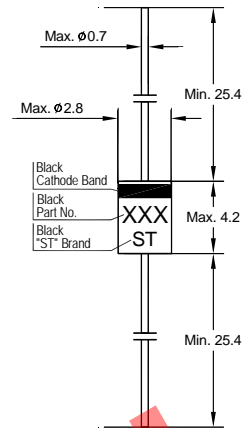
## Package Outline Dimensions (Units: mm)



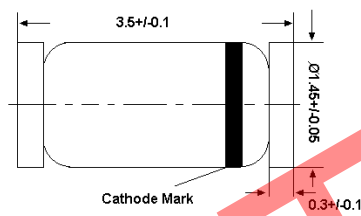
Glass Case DO-34  
Dimensions in mm



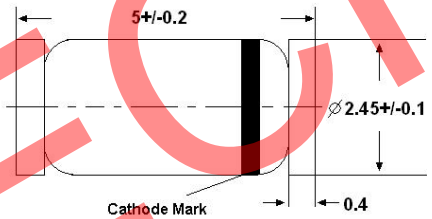
Glass Case DO-35  
Dimensions in mm



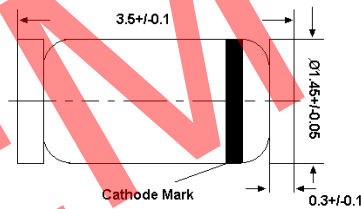
Glass Case DO-41  
Dimensions in mm



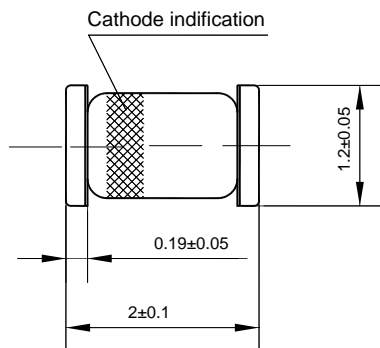
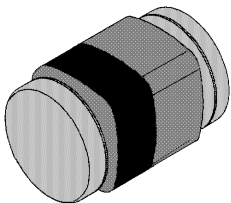
Glass case MiniMELF  
Dimensions in mm  
(LL-34)



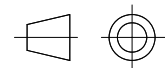
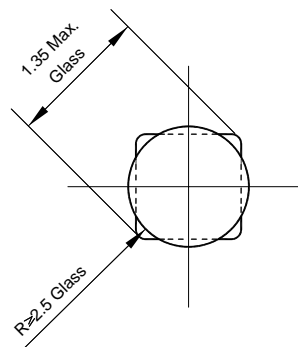
Glass case MELF  
Dimensions in mm  
(LL-41)



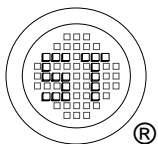
Glass case QuadroMELF  
Dimensions in mm  
(LS-34)



Glass case MicroMELF  
Dimensions in mm  
(LS-31)



technical drawings  
according to DIN  
specifications



**SEMTECH ELECTRONICS LTD.**



ISO/TS 16949 : 2009 Certificate No. 160713000 | ISO 14001 : 2004 Certificate No. 7116 | ISO 9001 : 2008 Certificate No. 50719410 | BS-OHSAS 18001 : 2007 Certificate No. 7116 | IECQ QC 080000 Certificate No. PRC-88P6-168-1

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