

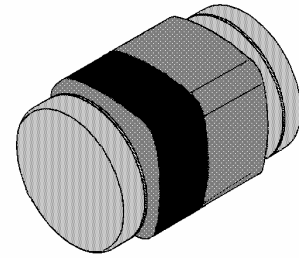
# MCL4148

## SILICON EPITAXIAL PLANAR DIODE

LS-31

### Features

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



### Applications

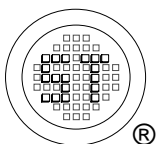
Extreme fast switches

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

Parameter	Test	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	-	$P_{tot}$	500	mW
Junction Temperature	-	$T_j$	175	$^\circ\text{C}$
Storage Temperature Range	-	$T_s$	-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, 35 $\mu\text{m}$ copper clad, 0.9 $\text{mm}^2$ copper area per electrode	$R_{thJA}$	500	K/W



**SEMTECH ELECTRONICS LTD.**

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



ISO/TS 16949 : 2002  
Certificate No. 05103



ISO 14001:2004  
Certificate No. 71116



ISO 9001:2000  
Certificate No. 0506098

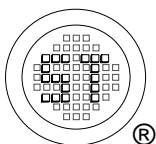
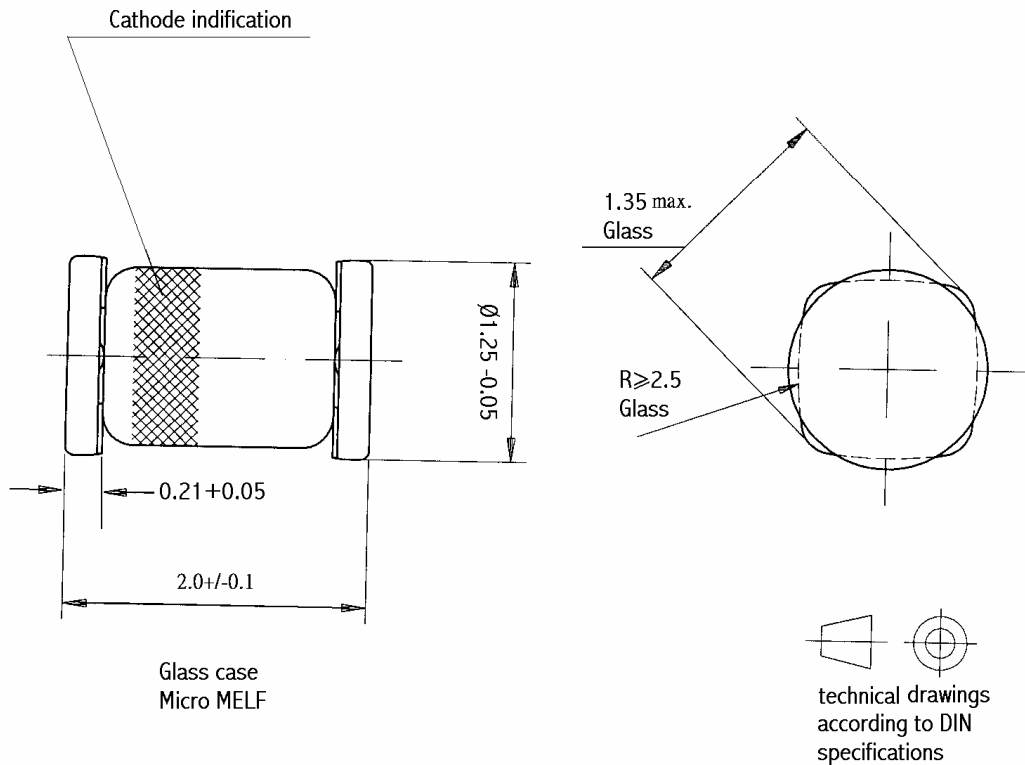
Dated : 20/08/2002

# MCL4148

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

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Forward Voltage	$I_F = 50\text{mA}$	$V_F$	-	0.86	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	$I_F = I_R = 10\text{mA}, I_r A$	$t_{rr}$	-	-	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

## Dimensions in mm



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