LL4148

## Silicon Epitaxial Planar Switching Diode

Fast switching diode in MiniMELF case especially suited for automatic surface mounting

## LL-34



Glass case MiniMELF
Dimensions in mm

Absolute Maximum Ratings ( $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$ )

| Parameter | Symbol | Value | Unit |
| :---: | :---: | :---: | :---: |
| Peak Reverse Voltage | $V_{\text {RM }}$ | 100 | V |
| Reverse Voltage | $V_{R}$ | 75 | V |
| Average Rectified Forward Current | $\mathrm{I}_{\text {( }}$ (AV) | 200 | mA |
| $\begin{array}{ll}\text { Non-repetitive Peak Forward Surge Current } & \text { at } t=1 \mathrm{~s} \\ & \text { at } t=1 \mathrm{~ms} \\ & \text { at }=1 \mu \mathrm{~s}\end{array}$ | $\mathrm{I}_{\text {FSM }}$ | $\begin{gathered} 0.5 \\ 1 \\ 4 \\ \hline \end{gathered}$ | A |
| Power Dissipation | $\mathrm{P}_{\text {tot }}$ | $500{ }^{1)}$ | mW |
| Junction Temperature | $\mathrm{T}_{\mathrm{j}}$ | 175 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature Range | $\mathrm{T}_{\text {stg }}$ | -65 to +175 | ${ }^{\circ} \mathrm{C}$ |
| ${ }^{1)}$ Valid provided that electrodes are kept at ambient temperature. |  |  |  |



Characteristics at $\mathrm{T}_{\mathrm{a}}=25^{\circ} \mathrm{C}$

| Parameter | Symbol | Min. | Max. | Unit |
| :---: | :---: | :---: | :---: | :---: |
| Forward Voltage at $I_{F}=10 \mathrm{~mA}$ | $V_{F}$ | - | 1 | V |
| $\begin{aligned} & \text { Leakage Current } \\ & \text { at } V_{R}=20 \mathrm{~V} \\ & \text { at } V_{R}=75 \mathrm{~V} \\ & \text { at } V_{R}=20 \mathrm{~V}, T_{j}=150^{\circ} \mathrm{C} \end{aligned}$ | $\begin{aligned} & \mathrm{I}_{\mathrm{R}} \\ & \mathrm{I}_{\mathrm{R}} \\ & \mathrm{I}_{\mathrm{R}} \end{aligned}$ | - | $\begin{gathered} 25 \\ 5 \\ 50 \end{gathered}$ | nA $\mu \mathrm{A}$ $\mu \mathrm{A}$ |
| Reverse Breakdown Voltage tested with $100 \mu \mathrm{~A}$ Pulses | $\mathrm{V}_{(\mathrm{BR}) \mathrm{R}}$ | 100 | - | V |
| Capacitance at $V_{R}=0, f=1 \mathrm{MHz}$ | $\mathrm{C}_{\text {tot }}$ | - | 4 | pF |
| Voltage Rise when Switching ON tested with 50 mA Forward Pulses $\mathrm{tp}=0.1 \mathrm{~s}$, Rise Time $<30 \mathrm{~ns}, \mathrm{fp}=5$ to 100 KHz | $\mathrm{V}_{\mathrm{fr}}$ | - | 2.5 | V |
| Reverse Recovery Time at $I_{F}=10 \mathrm{~mA}$ to $\mathrm{I}_{\mathrm{R}}=1 \mathrm{~mA}, \mathrm{~V}_{\mathrm{R}}=6 \mathrm{~V}, \mathrm{R}_{\mathrm{L}}=100 \Omega$ | $\mathrm{t}_{\mathrm{rr}}$ | - | 4 | ns |
| Thermal Resistance Junction to Ambient Air | $\mathrm{R}_{\text {thA }}$ | - | $0.35{ }^{1)}$ | K/mW |
| Rectification Efficiency at $\mathrm{f}=100 \mathrm{MHz}, \mathrm{V}_{\mathrm{RF}}=2 \mathrm{~V}$ | $\eta_{v}$ | 0.45 | - | - |
| ${ }^{1)}$ Valid provided that electrodes are kept at ambient temperature. |  |  |  |  |



> Rectification Efficiency Measurement Circuit

## Forward characteristics




Dynamic forward resistance
versus forward current





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