

# 1N4148PF

## Silicon Epitaxial Planar Switching Diode

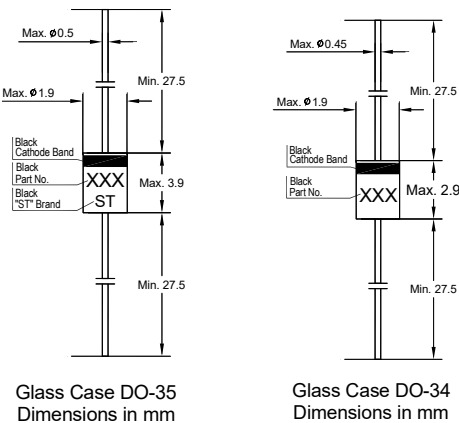
### Features

- Lead Free

### Applications

- High-speed switching

This diode is also available in MiniMELF case with the type designation LL4148



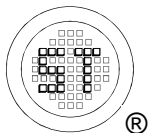
### Absolute Maximum Ratings ( $T_a = 25^{\circ}\text{C}$ )

| 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                 |
| Non-repetitive Peak Forward Surge Current | $I_{FSM}$   | 0.5<br>1<br>4 | A                  |
| Power Dissipation                         | $P_D$       | 500           | mW                 |
| Operating Junction Temperature Range      | $T_j$       | - 65 to + 200 | $^{\circ}\text{C}$ |
| Storage Temperature Range                 | $T_{stg}$   | - 65 to + 200 | $^{\circ}\text{C}$ |

### Thermal Characteristics

| Parameter                                           | Symbol          | Max. | Unit                 |
|-----------------------------------------------------|-----------------|------|----------------------|
| Thermal Resistance - Junction to Lead <sup>1)</sup> | $R_{\theta JL}$ | 350  | $^{\circ}\text{C/W}$ |

<sup>1)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

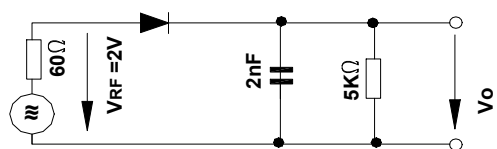


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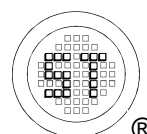
## Characteristics at $T_a = 25^\circ\text{C}$

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

1)



Rectification Efficiency Measurement Circuit



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## Electrical Characteristics Curve

Fig 1. Power Derating Curve

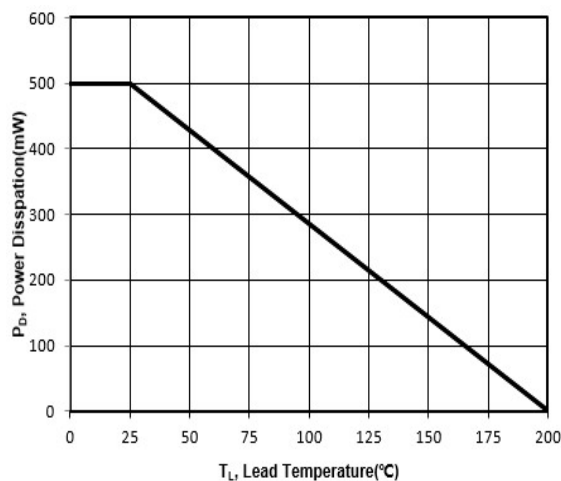


Fig 2. Forward Characteristic Curve

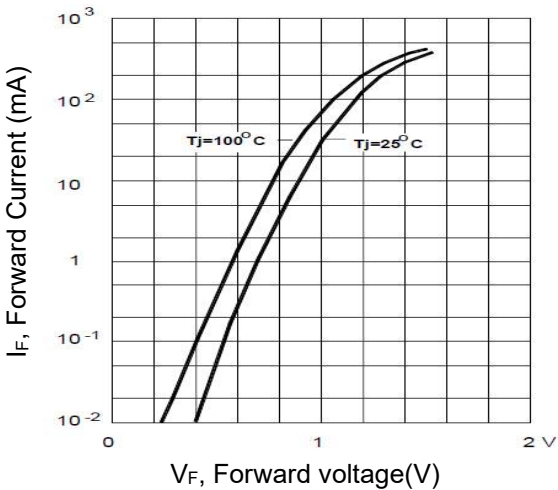


Fig 3. Reverse Characteristic Curve

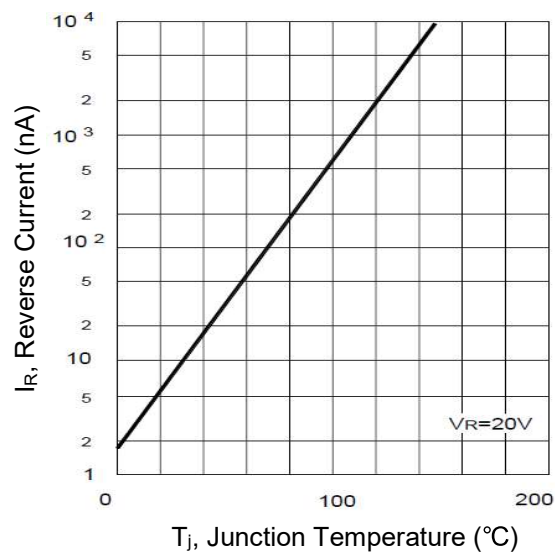
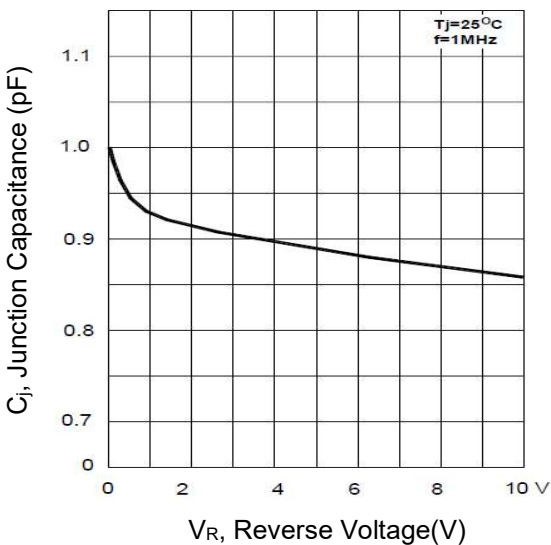


Fig 4. Junction Capacitance



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