



High-speed switching diode

Features

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



Applications

Extreme fast switches

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

$T_j=25$

| 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 | $t_p=1 \mu s$ | | 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 | |
| Storage temperature range | | | T_{stg} | -65~+175 | |

Maximum Thermal Resistance

$T_j=25$

| Parameter | Test Conditions | Symbol | Value | Unit |
|------------------|---------------------------------|------------|-------|------|
| Junction ambient | on PC board 50mm x 50mm x 1.6mm | R_{thJA} | 500 | K/W |



Electrical Characteristics

$T_j=25$

| 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 |
| | $V_R=20\text{V}, T_j=150$ | | I_R | | | 50 | μA |
| | $V_R=75\text{V}$ | | I_R | | | 5 | μA |
| 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 | $V_{HF}=2\text{V}, f=100\text{MHz}$ | | η_R | 45 | | | % |
| Reverse recovery time | $I_F=I_R=10\text{mA}, i_R=1\text{mA}$ | | t_{rr} | | | 8 | ns |
| | $I_F=10\text{mA}, V_R=6\text{V}, i_R=0.1 \times I_R, R_L=100$ | | t_{rr} | | | 4 | ns |

Characteristics ($T_j=25$ unless otherwise specified)

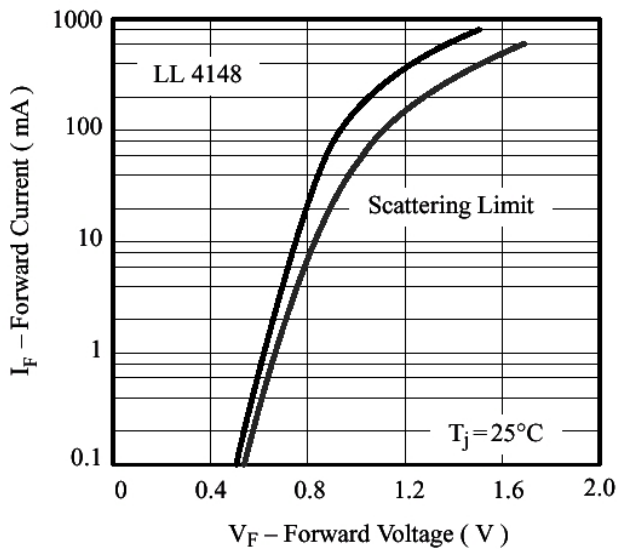


Figure 1. Forward Current vs. Forward Voltage

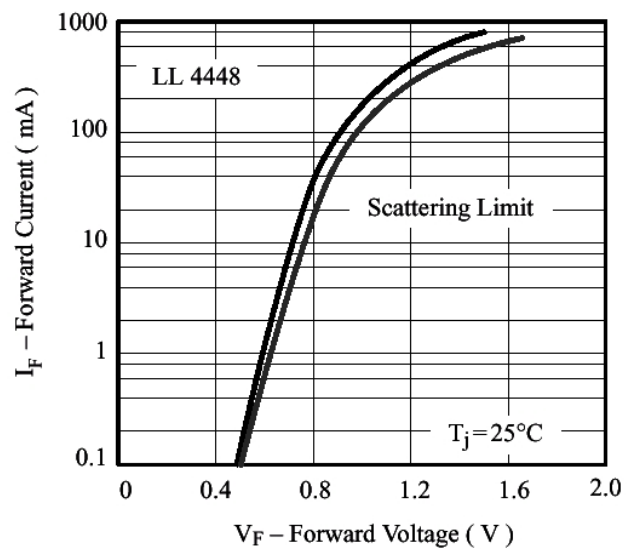


Figure 2. Forward Current vs. Forward Voltage

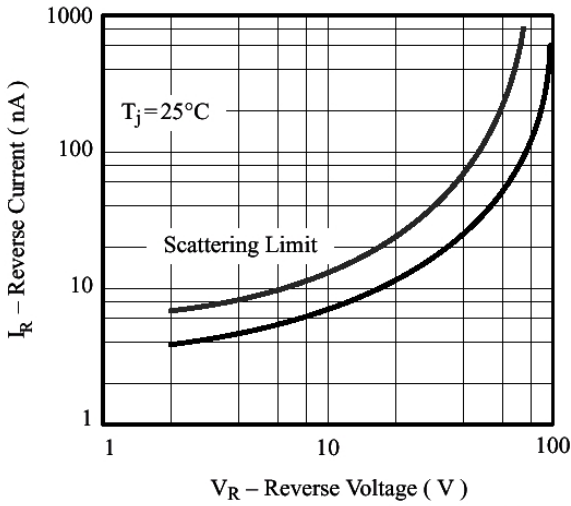


Figure 3. Reverse Current vs. Reverse Voltage

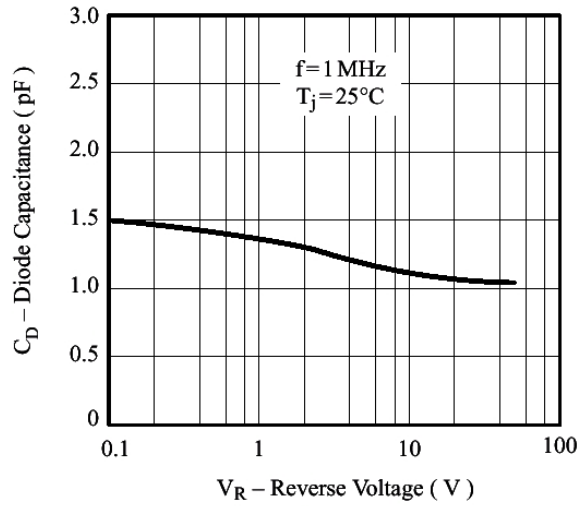
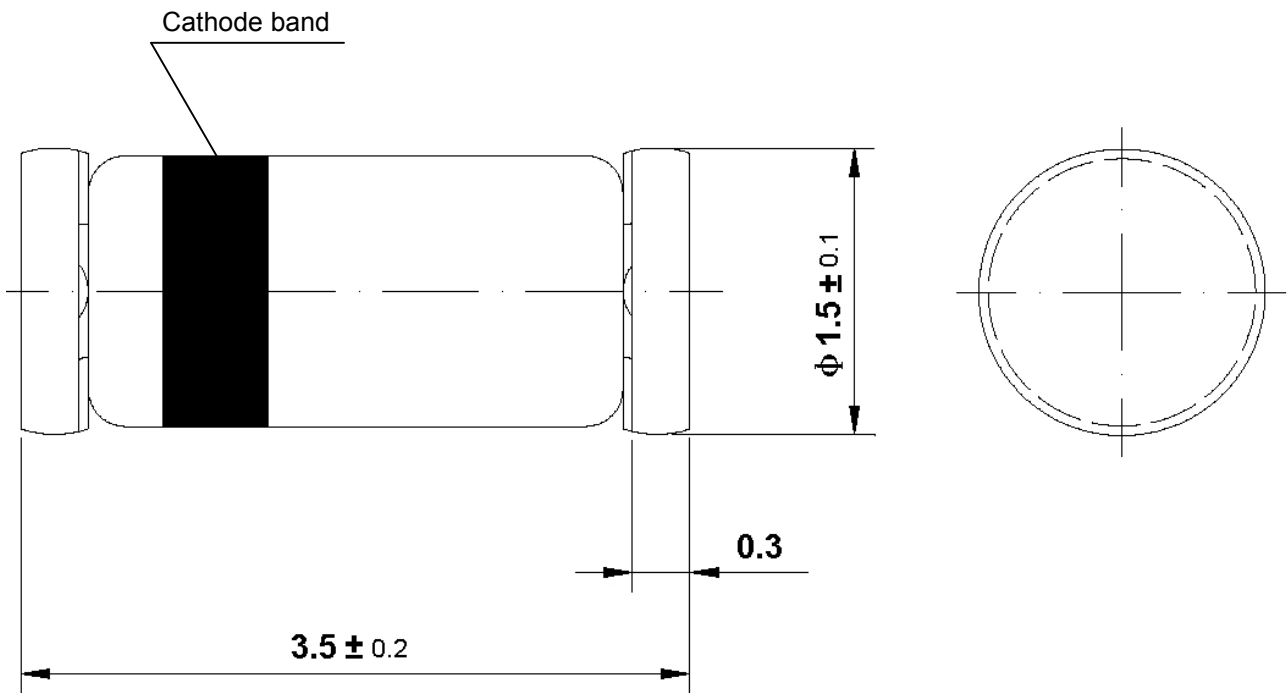


Figure 4. Diode Capacitance vs. Reverse Voltage

Dimensions in mm



Glass Case
Mini Melf / SOD 80
JEDEC DO 213 AA