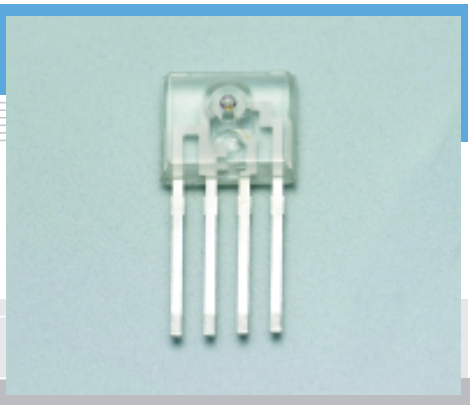
# Red LED for optical link
# L9534



## Red LED for 125 Mbps optical link

L9534 is a LED ideal for high-speed POF communications. L9534 is sealed in a small plastic package with a lens, allowing easy coupling to an FOP.

### Features

- Peak emission wavelength: 650 nm
- High-speed response and high output power

### Applications

- Home networks and short-range high-speed data communications

■ Absolute maximum ratings (Ta=25 °C)

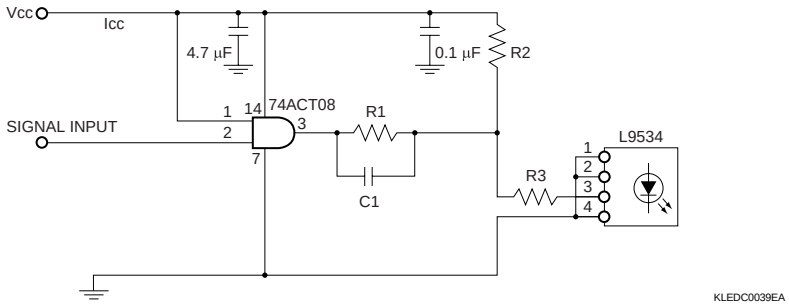
| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Forward current | $I_F$ | 40 | mA |
| Reverse voltage | $V_R$ | 3 | V |
| Power dissipation *1 | Pmax | 250 | mW |
| Operating temperature | Topr | -20 to +70 | °C |
| Storage temperature | Tstg | -40 to +85 | °C |
| Soldering | - | 230 °C, 5 s, at least 1.8 mm away from package surface | - |

*1: Power dissipation going down at a rate of -1.75 mW/°C above Ta=25 °C

■ Electrical and optical characteristics (Ta=25 °C)

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Data rate | fD | NRZ *2 | DC | - | 125 | Mbps |
| Forward voltage | $V_F$ | $I_F$=20 mA | 1.8 | 2.0 | 2.5 | V |
| Reverse current | $I_R$ | $V_R$=3 V | - | - | 10 | μA |
| Peak emission wavelength | λp | $I_F$=20 mA | - | 650 | - | nm |
| Spectral half width (FWHM) | Δλ | $I_F$=20 mA | - | 20 | - | nm |
| Fiber-coupled optical output | Po | *2, 3, 4 | -6.5 | - | -3 | dBm |
| Pulse distortion | ΔT | *2, 3 | -2 | - | 0 | ns |
| Jitter | Δtj | *2, 3 | - | - | 1.5 | ns |

*2: Measured with the recommended driver circuit shown below.
(Vcc=4.75 to 5.25 V, R1=180 Ω, R2=470 Ω, R3=10 Ω, C1=47 pF)




*3: Input is a pseudo-random bi-phase signal at 125 Mbps (NRZ signal conversion).
*4: Average value (duty ratio 50 %) measured by using a plastic fiber of ϕ1 mm. SI-POF and NA=0.5 (GH4001 made by Mitsubishi Rayon).

Note)
· A bypass capacitor (0.1 μF) and another capacitor (4.7 μF) are connected between Vcc and GND at a position within 3 mm from the lead.
· The center of the optical fiber is aligned with the center of the lens on the package. The distance between the fiber end and the lens is 0.1 mm.

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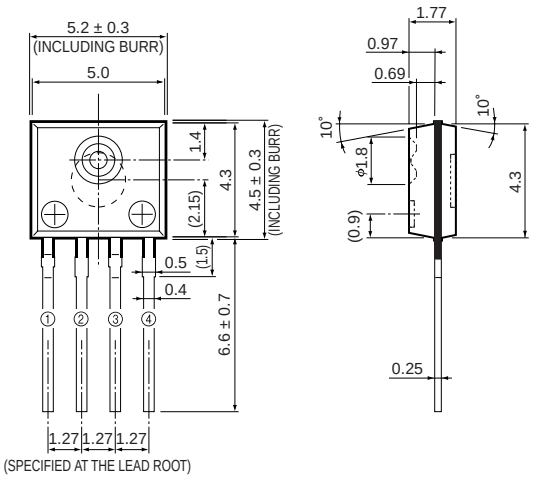
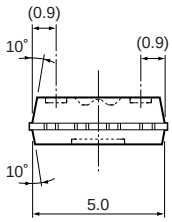
## ■ Dimensional outline (unit: mm)




① CATHODE
② CATHODE
③ ANODE
④ CATHODE

Tolerance unless otherwise noted: ±0.1, ±2°
Shaded area indicates burr.
Values in parentheses indicate reference value.

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