



Technical Data Sheet

Photolink- Fiber Optic Transmitter

PLT133/T

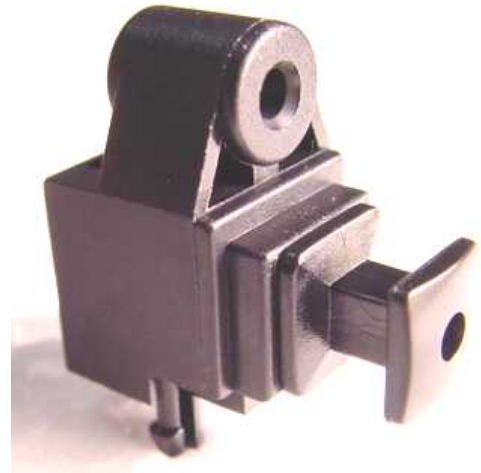
Features

- High speed signal transmission (16Mbps NRZ Signal)
- TTL interface compatible
- +3~+5V single power source
- Pb Free
- The product itself will remain within RoHS compliant version.

Descriptions

The opto-electrical component is assembled with a 660nm AlGaInP LED and a driver IC. It transforms the electrical signal to optical signal and be transmitted by 1mm diameter plastic optical fiber.

The component is operated at +3~+5V and has good performance at low dissipation current, steady light output and efficient light coupling.



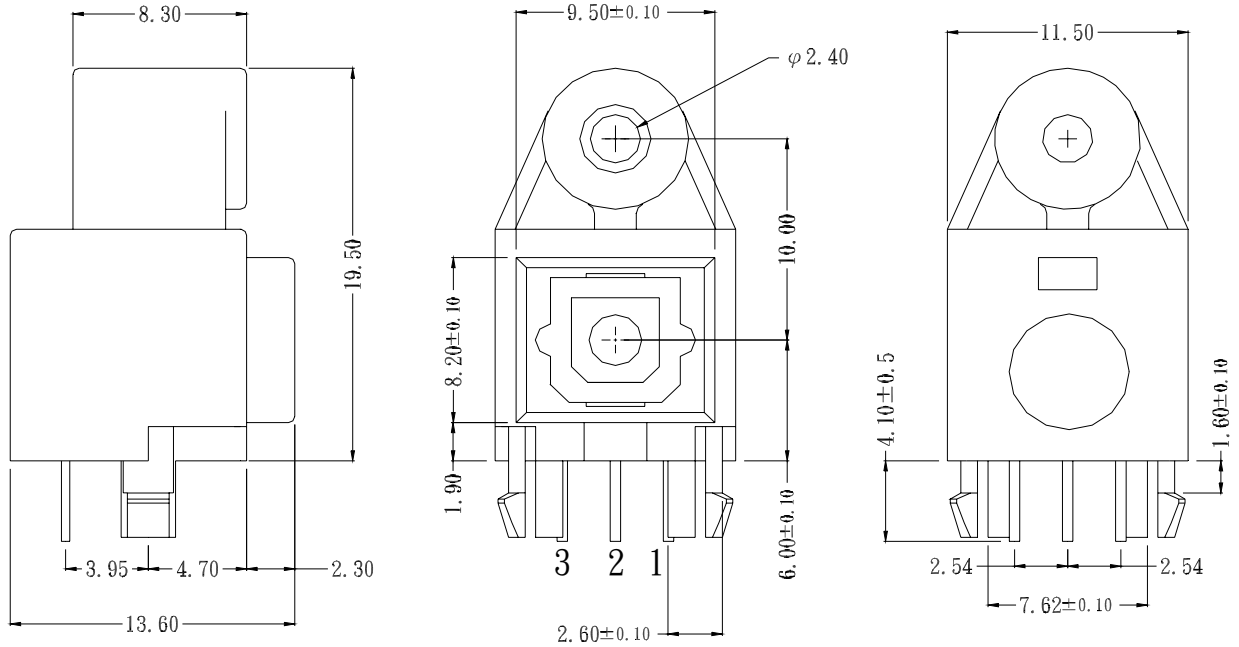
Applications

- Digital audio equipment
- CD player
- DVD player

Device Selection Guide

| Chip | | Operating Voltage (Vcc) | Dissipation Current (mA) | | Fiber Coupling Light Output (dBm) | | |
|----------|-----------------|-------------------------|--------------------------|------|-----------------------------------|------|------|
| Material | λ p(nm) | | Typ. | Max. | Min. | Typ. | Max. |
| AlGaInP | 660 | +3.0~5.0 | 5.5 | 10 | -21 | -- | -15 |

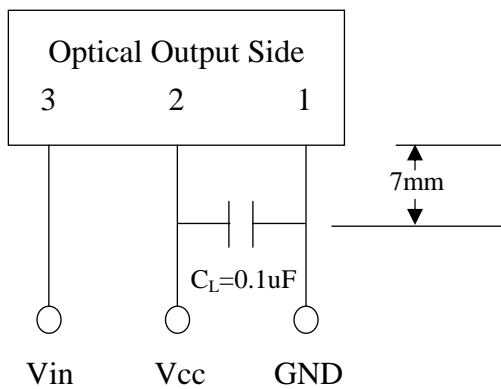
Package Dimensions



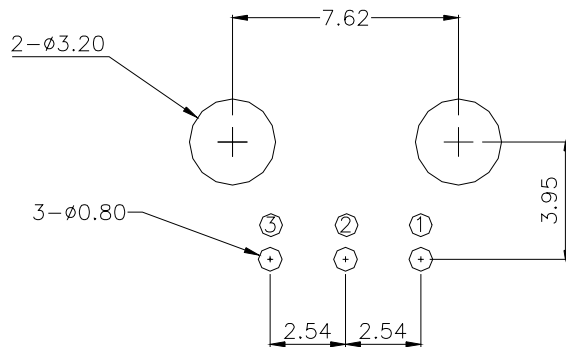
Notes: 1.All dimensions are in millimeters.
2.General Tolerance :±0.3mm

Pin Function: 1.GND
2.Vcc
3.Vin

Using Method



PCB Layout for Electrical Circuit



Notes:
1. unit:mm
2.Dimension Tolerance:±0.25mm
3.Substrate Thickness:1.6mm

Absolute Maximum Ratings(Ta = 25°C)

| Parameter | Symbol | Rating | Unit |
|-----------------------|--------|-----------------|------|
| Supply Voltage | Vcc | -0.5 to 7 | V |
| DC Input Voltage | Vin | -0.5 to Vcc+0.5 | V |
| Storage Temperature | Tstg | -40 to 85 | °C |
| Operating Temperature | Topr | -20 to 70 | °C |
| Soldering Temperature | Tsol | 260* | °C |

* Soldering time ≤ 10 s.

Electro-Optical Characteristics

| Parameter | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|-----------------------------|------------------|--------------|------|------|------|------|
| Operating Voltage | Vcc | Low Voltage | 2.75 | 3.00 | 3.25 | V |
| | | High Voltage | 4.75 | 5.00 | 5.25 | V |
| Peak Emission Wavelength | λ_p | | 640 | 660 | 680 | nm |
| Transmission Rate | | NRZ Code | DC | - | 16 | Mbps |
| Fiber Coupling Output Power | Pf | *1 | -21 | -18 | -15 | dBm |
| Dissipation Current | Icc | *1 | 3 | - | 10 | mA |
| High Level Input Voltage | V _{IH} | | 2 | - | - | V |
| Low Level Input Voltage | V _{IL} | | - | - | 0.8 | V |
| Low to High Delay Time | t _{pLH} | *2 | - | - | 120 | ns |
| High to Low Delay Time | t _{pHL} | *2 | - | - | 120 | ns |
| Pulse Width Distortion | Δtw | *2 | -25 | - | 25 | ns |
| Jitter | Δtj | *2 | - | - | 20 | ns |

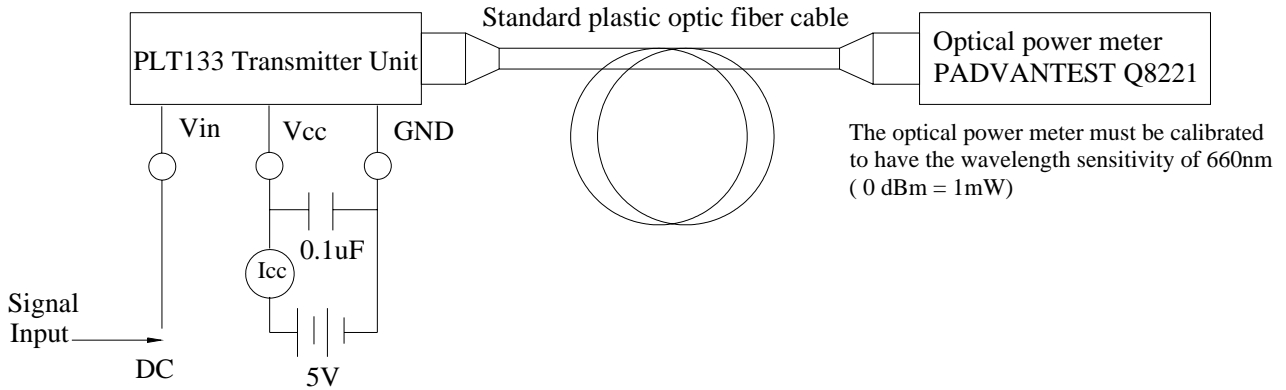
*All Plastic Optical Fiber (980/1000um)

*Circuit Layout Notice:

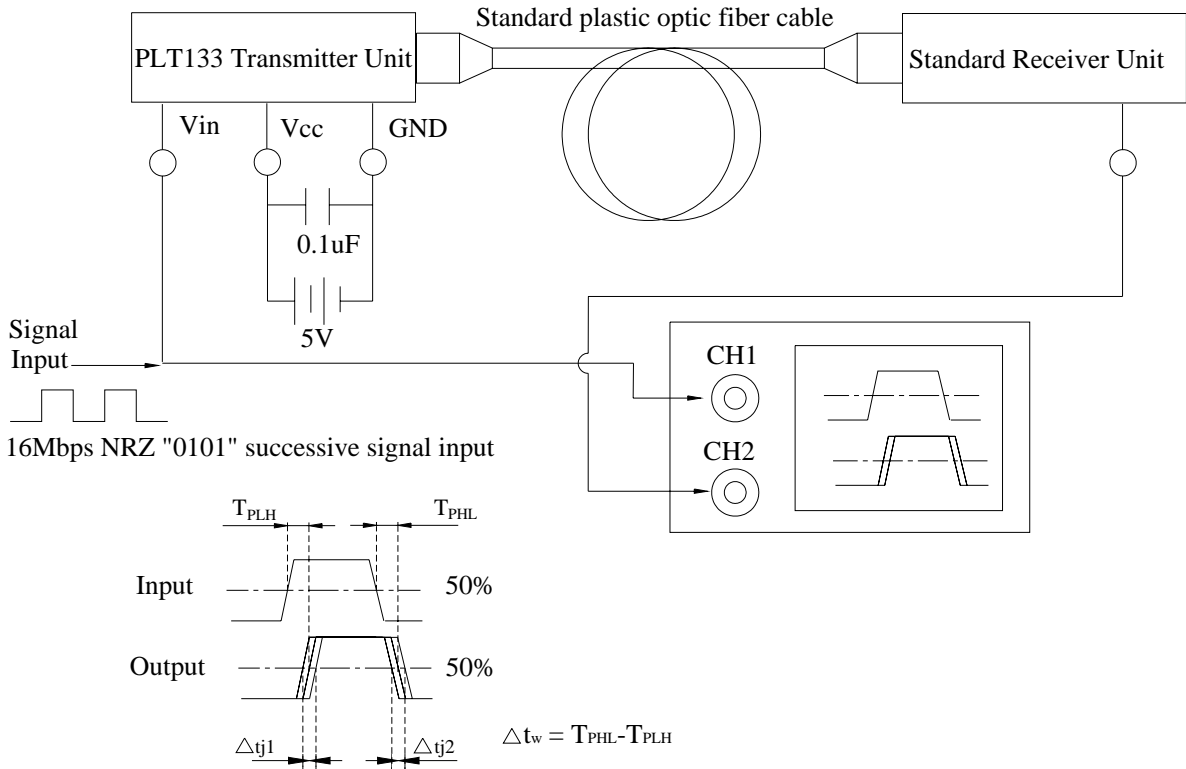
When power is off, it must be cut off together in Vin and Vcc pin. If it only has Vcc power-off, LED will be sparkling because LED is just threshold condition.

Measuring Method

*1 Measuring method of optical output coupling fiber and dissipation current



*2 Pulse response measuring method



RELIABILITY TEST ITEMS

| No. | Item | Test Condition | Test Hour/Cycle | Sample Size (Piece) | Number (n) Failure (c) |
|-----|--------------------------|---|-----------------|---------------------|------------------------|
| 1 | Soldering Heat | 260°C±5°C | 10 seconds | 22 | n=22, c=0 |
| 2 | High Temp. Storage | Ta=100°C | 1000hrs | 22 | n=22, c=0 |
| 3 | Low Temp. Storage | Ta=-55°C | 1000hrs | 22 | n=22, c=0 |
| 4 | High Temp. & Humid. Test | Ta=85°C, RH=85% | 1000hrs | 22 | n=22, c=0 |
| 5 | Temperature Cycle | -40°C ~~~~ 85°C (30min) (5min) (30min) | 300cycle | 22 | n=22, c=0 |
| 6 | Thermal Shock | -10°C ~~~~ 100°C (5min) (10sec) (5min) | 300cycle | 22 | n=22, c=0 |
| 7 | DC Operating Life | Vcc=5V, Ta=25°C Vin: DC (5V) | 1000hrs | 22 | n=22, c=0 |

*Icc(mA): Brightness Attenuate Difference < 20%

*Pf (Fiber Coupling Output Power) : Brightness Attenuate Difference < 20%

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