# EVERLIGHT ELECTRONICS CO.,LTD.

# DATA SHEET

MODEL NO : PLT131

DATE : 2001/6/8

DEPARTMENT : R&D 1

REVISION : 1.0

| RECEIVED | | | |
|---|---|---|---|
| ■MASS PRODUCTION | | | |
| □PRELIMINARY | | | |
| □CUSTOMER DESIGN | | | |
| DEVICE NUMBER : DPL-131-001 | | | |
| PAGE : 7 | | | |
| CUSTOMER | DESIGNER | CHECKER | APPROVER |
| | | | |

| REV | DESCRIPTION | RELEASE DATE |
|---|---|---|
| | | |
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| | | |
| | | |
| | | |



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EVERLIGHT **EVERLIGHT ELECTRONICS CO., LTD.**

**PHOTOLINK LIGHT TRANSMITTING UNIT**

**MODEL NO: PLT131** Device Number: DPL-131-001 REV: 1.0

Page: 1/7 ECN:

## ■ FEATURES

- High speed signal transmission
- Input TTL compatible
- +3V~+5V single power source

## ■ DESCRIPTIONS

The light transmitter unit is assembled with connector and opto-electric component packaged with AlGaAs LED and drive IC. The function of unit changes the electric signal into light signal and be transmitted by plastic fiber.

The unit is operated at +3V~ +5V and the input signal is TTL compatible. The light intensity emits from LED is controlled by drive IC. The light signal is coupled into plastic fiber by connector. The unit has high performance at low dissipation current, steady light output and efficient light coupling.

## ■ APPLICATIONS

- Audio equipment
- DVD player
- Automobile



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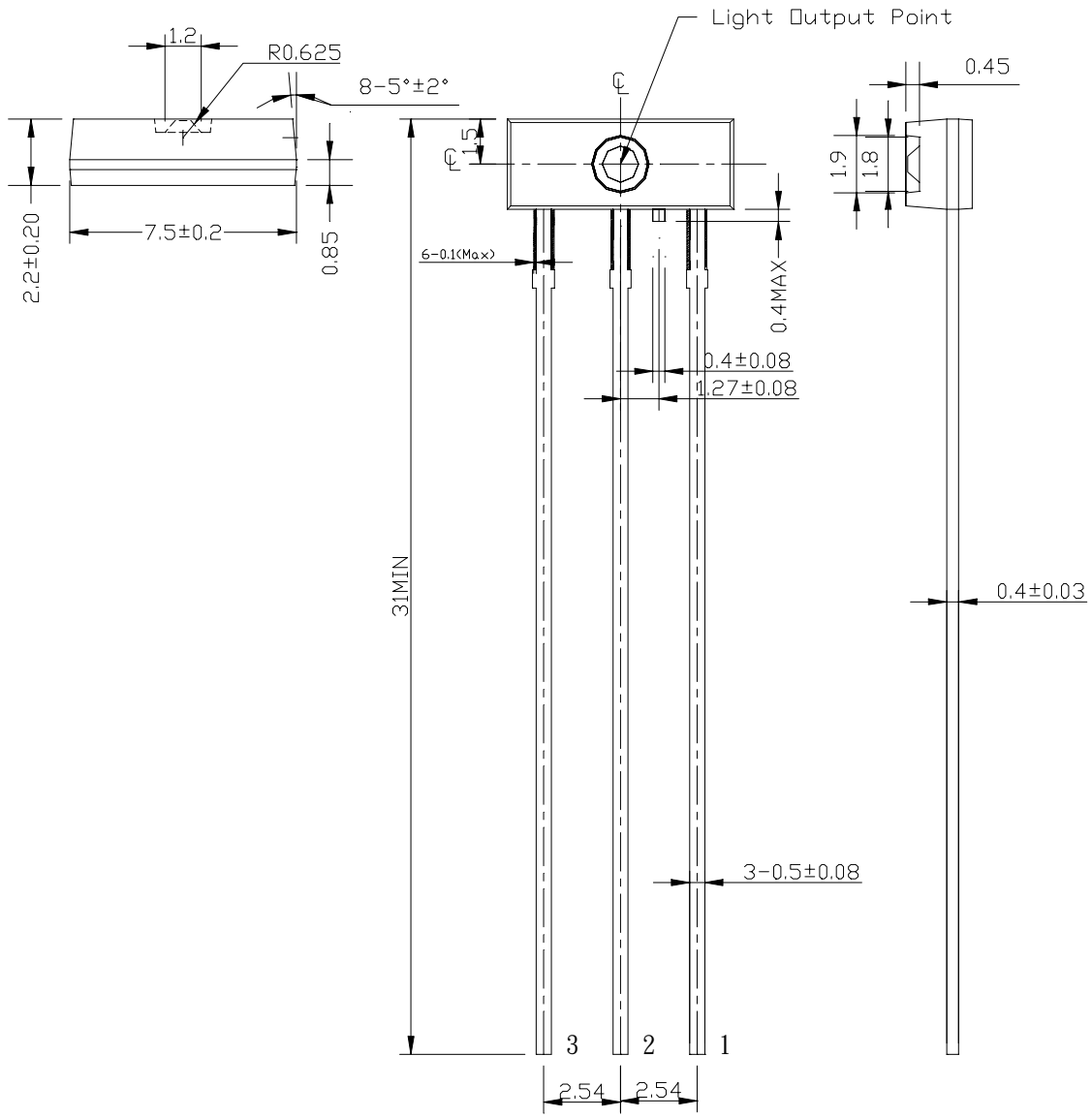
## ■ PACKAGE DIMENSIONS




| PIN FUNCTION | NOTES |
|---|---|
| 1. GND | 1. Unit: mm |
| 2. Vcc | 2. All tolerance is 0.1 mm unless otherwise specified |
| 3. Vin | |

## ■ ABSOLUTE MAXIMUM RATINGS( Ta = 25℃)

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Supply Voltage | Vcc | -0.5 to 7 | V |
| DC Input Voltage | Vin | -0.5 to Vcc+0.5 | V |
| Power Dissipation | P | 120 | mW |
| Storage Temperature | Tstg | -40 to 70 | ℃ |
| Operating Temperature | Topr | -20 to 70 | ℃ |
| Soldering Temperature | Tsol | 260* | ℃ |

* Soldering time ≤ 10 s.

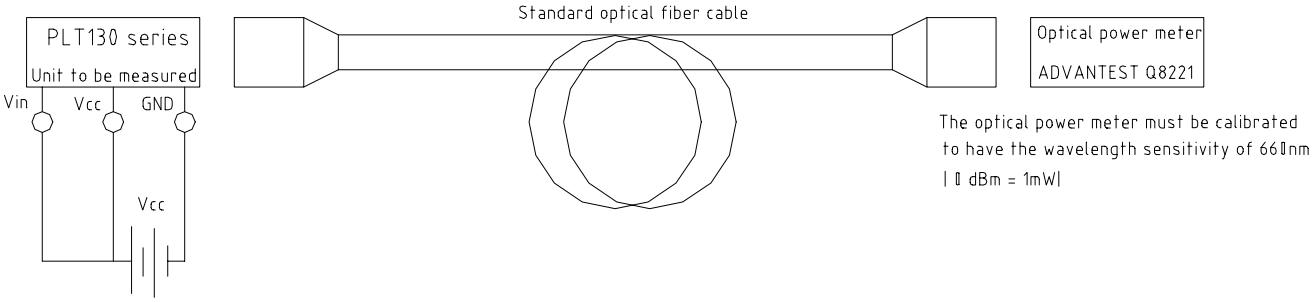
## ■ ELECTRO-OPTICAL CHARACTERISTICS

| 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 | λp | | 640 | 660 | 670 | nm |
| Transmission Speed | | NRZ signal | DC | - | 12 | Mbps |
| Transmission Distance | | Using APF | 0.2 | - | 20 | m |
| Fiber Coupling Light Output | Pf | *1 | -21 | -17 | -15 | dBm |
| Dissipation Current | Icc | *2 | - | - | 15 | mA |
| High Level Input Voltage | $V_{IH}$ | | 2 | - | - | V |
| Low Level Input Voltage | $V_{IL}$ | | - | - | 0.8 | V |
| Rise Time | $t_r$ | *3 | | 30 | 40 | ns |
| Fall Time | $t_f$ | *3 | | 25 | 40 | ns |
| L → H delay time | $t_{PLH}$ | *3 | - | - | 155 | ns |
| H → L delay time | $t_{PHL}$ | *3 | - | - | 145 | ns |
| Pulse Width Distortion | Δtw | *3 | -30 | - | 30 | ns |

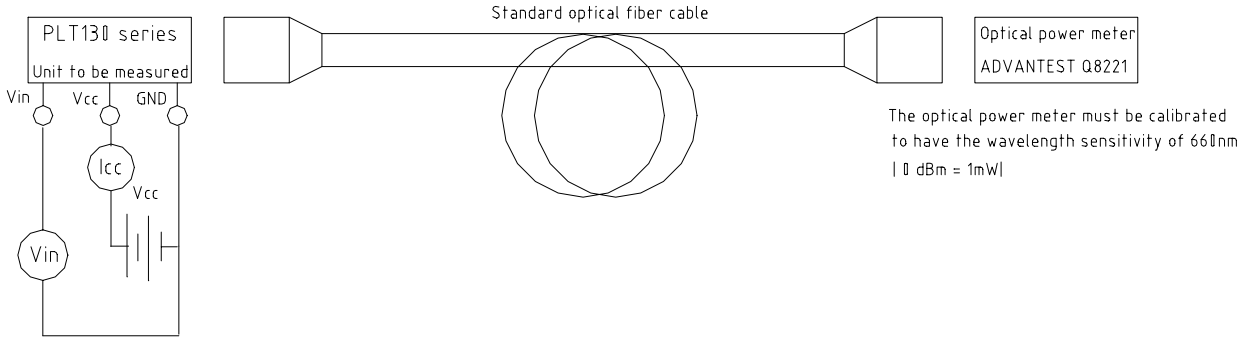
**The PLT 131 light transmitting unit satisfies EIAJ CP-1201 digital audio interface standard.**

## ■ MEASUERING METHOD (Test condition: 17~28 ℃, 45~70 % RH)

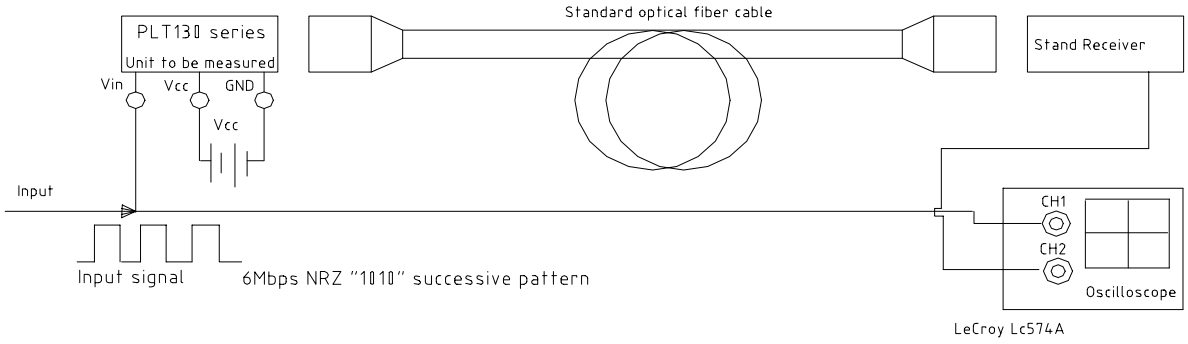
*1 Measuring method of optical output coupling fiber



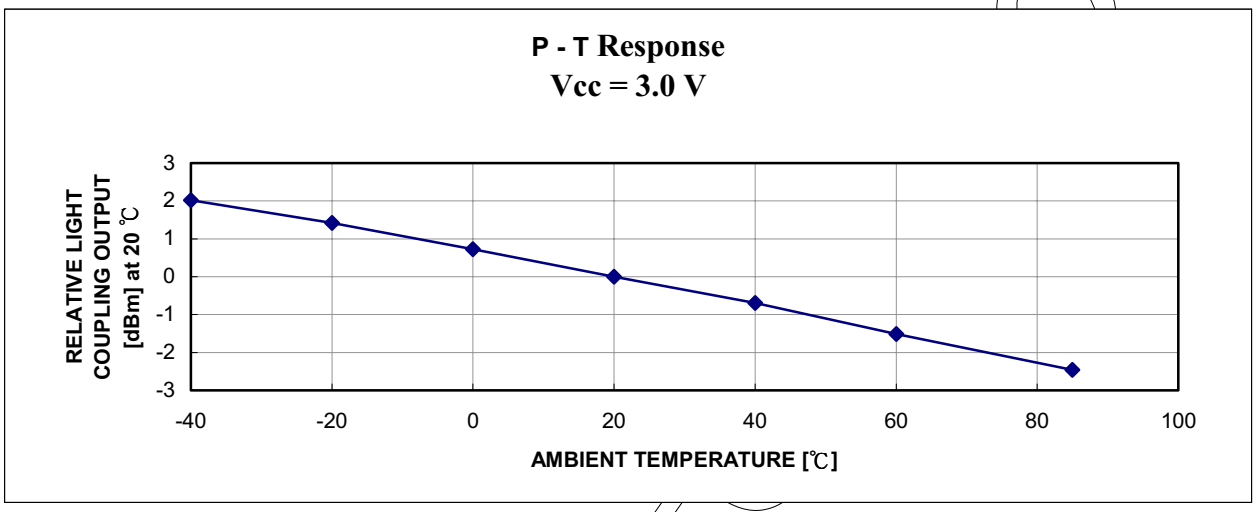

*2 Input voltage/power dissipation measuring method

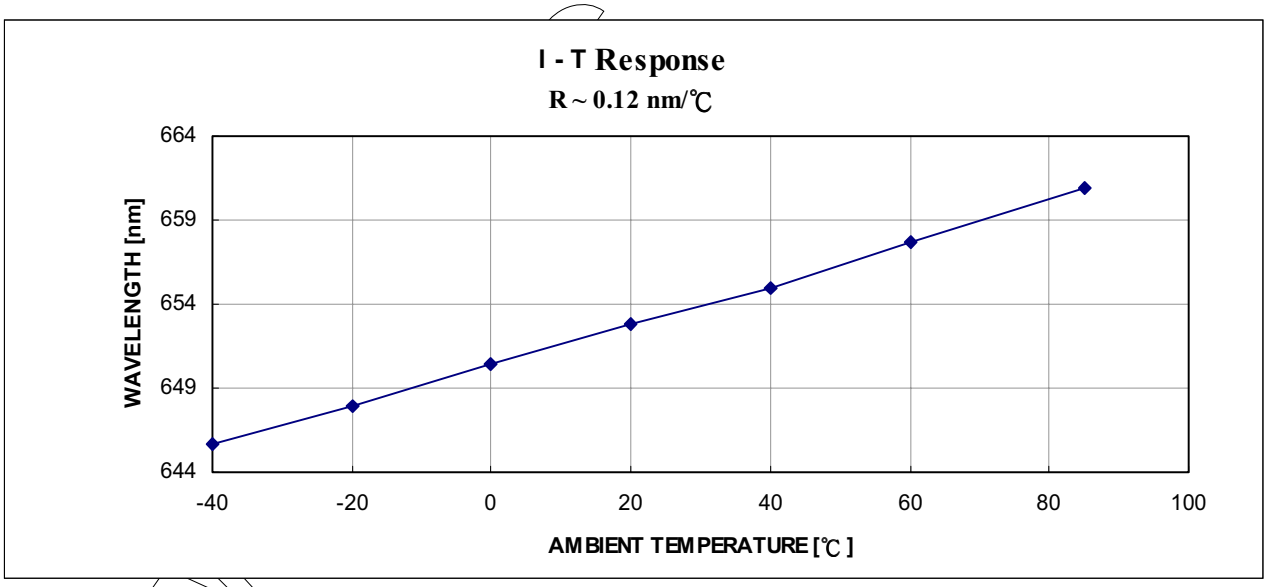



*3 Pulse response measuring method



## ■ TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES



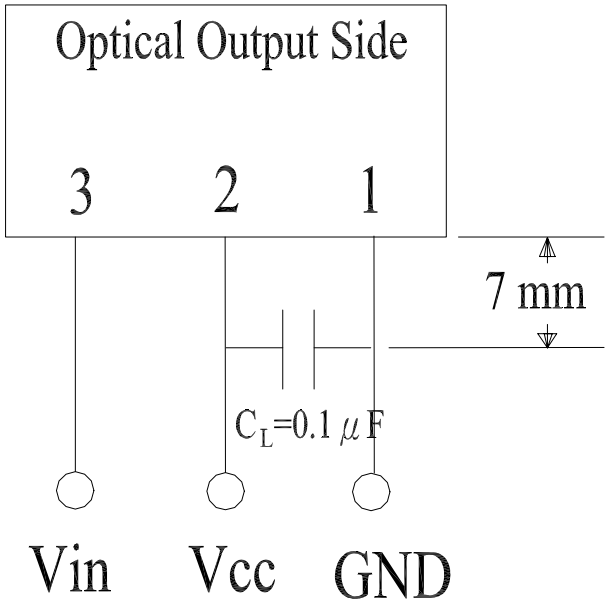
## ■ RELIABILITY TEST ITEMS

| No. | Item | Test Condition | Test Hour/Cycle | Sample Size (piece) | Number (n) Failure (c) |
|---|---|---|---|---|---|
| 1 | Soldering Heat | 260℃±5℃ | 10 seconds | 22 | n=22, c=0 |
| 2 | Room Temp. Test(1) | Vcc=3V, Ta=25℃ Vin signal: 6Mbps(NRZ) | 1000 | 22 | n=22, c=0 |
| 3 | Room Temp. Test(2) | Vcc=3V, Ta=25℃ Vin signal: DC(3V) | 1000 | 22 | n=22, c=0 |
| 4 | High Temp. Test | Vcc=3V, Ta=85℃ Vin signal: 6Mbps(NRZ) | 1000 | 22 | n=22, c=0 |
| 5 | Low Temp. Test | Vcc=3V, Ta=-40℃ Vin signal: 6Mbps(NRZ) | 1000 | 22 | n=22, c=0 |
| 6 | High Temp.& Humi. Test | Ta=85℃, RH85% | 1000 | 22 | n=22, c=0 |
| 7 | Temperature Cycle Test | -30℃ ~~~~ 85℃ (30min) (5min) (30min) | 50 | 22 | n=22, c=0 |
| 8 | Thermal Shock Test | -10℃ ~~~~ 100℃ (5min) (10sec) (5min) | 50 | 22 | n=22, c=0 |
| 9 | High temp Operation life | Vcc=3V, Ta=60℃ Vin: DC (3V) | 500 | 22 | n=22, c=0 |
| 10 | Mechanical Shock | Acceleration: 100G Pulse width: 6 ms 3 times/ X,Y,Z direction | | 22 | n=22, c=0 |
| 11 | Vibration | Frequency range: 10~55 Hz /sweep 1 min Overall amplitude: 1.5 mm 2H./X,Y,Z direction | | 22 | n=22, c=0 |

Icc (dissipation current) :BRIGHTNESS ATTENUATE DIFFERENCE < 20%

Pf (fiber coupling light output): BRIGHTNESS ATTENUATE DIFFERENCE < 20%

## USING METHOD






Caution: Take proper electrostatic-discharge (ESD) precautions while handling these devices. These Devices are sensitive to ESD.