



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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<http://www.everlight.com>



EVERLIGHT ELECTRONICS CO., LTD.

PHOTOLINK LIGHT TRANSMITTING UNIT

MODEL NO: PLT131

Device Number: DPL-131-001 REV: 1.0

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■ 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

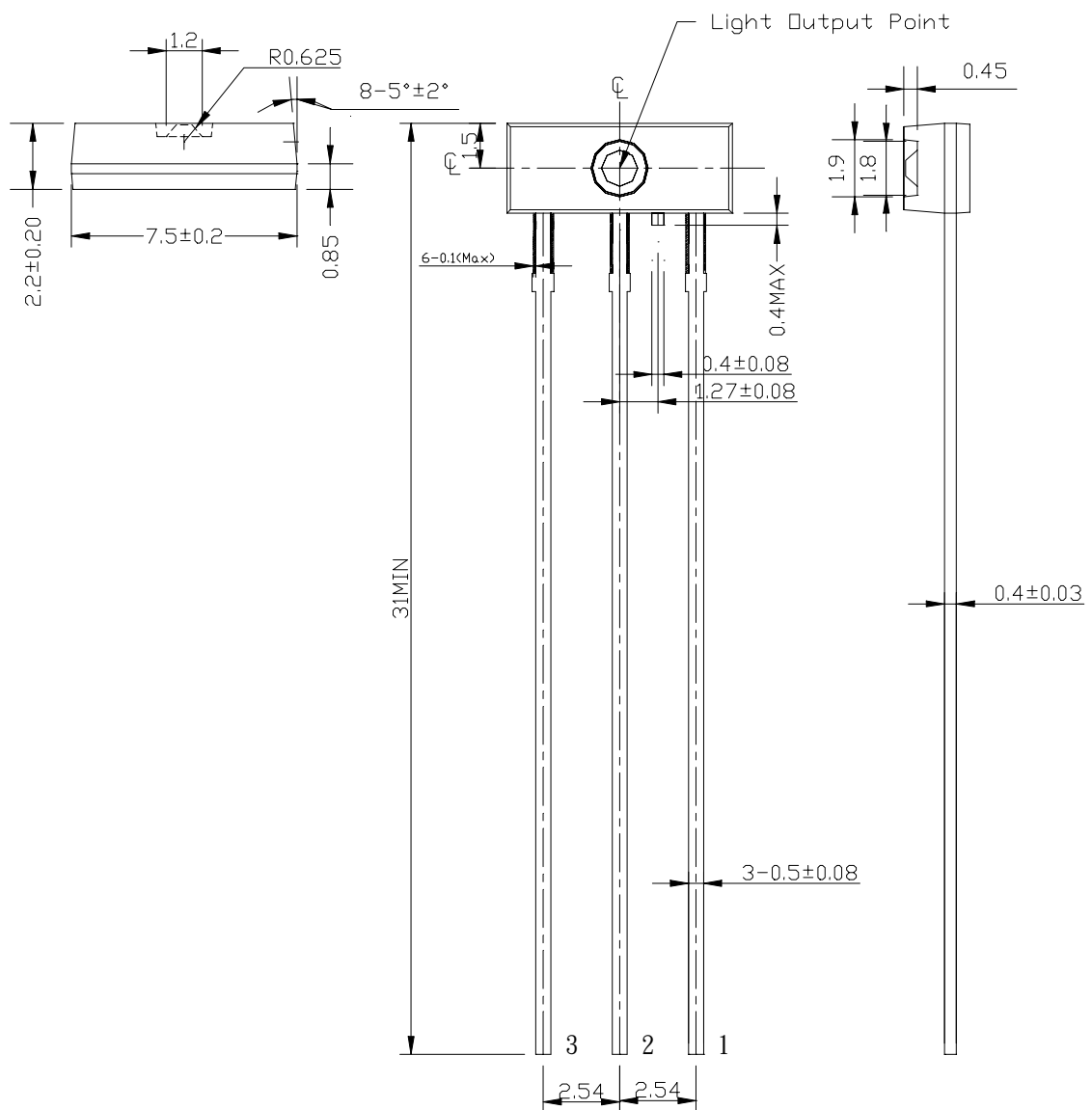
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■ PACKAGE DIMENSIONS



PIN FUNCTION NOTES

1. GND
2. Vcc
3. Vin

1. Unit: mm
2. All tolerance is 0.1 mm unless otherwise specified

■ 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
Power Dissipation	P	120	mW
Storage Temperature	Tstg	-40 to 70	°C
Operating Temperature	Topr	-20 to 70	°C
Soldering Temperature	Tsol	260*	°C

* Soldering time ≤ 10 s.

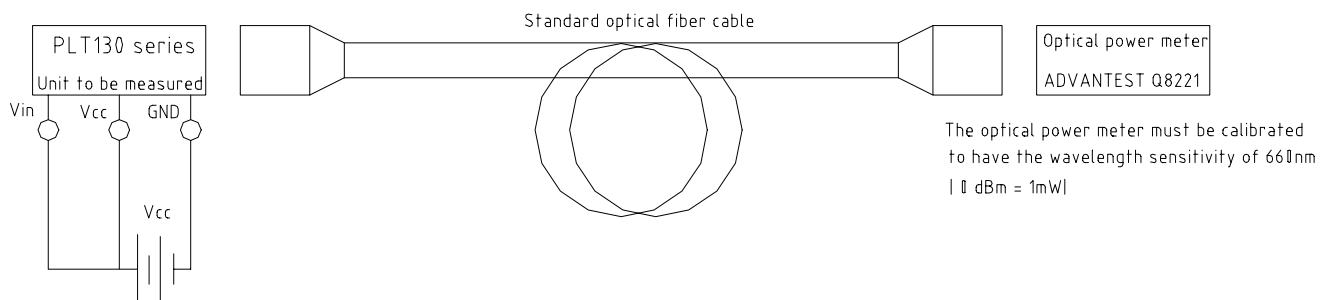
■ ELECTRO-OPTICAL CHARACTERISTICS

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	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
→ H delay time	t _{PLH}	*3	-	-	155	ns
→ L delay time	t _{PHL}	*3	-	-	145	ns
Pulse Width Distortion	Δtw	*3	-30	-	30	ns

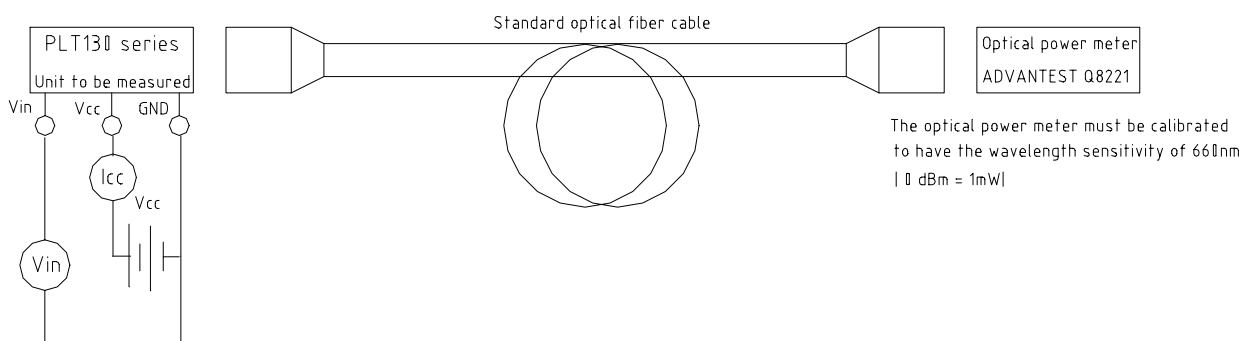
The PLT 131 light transmitting unit satisfies EIAJ CP-1201 digital audio interface standard.

■ MEASURING METHOD (Test condition: 17~28 °C, 45~70 % RH)

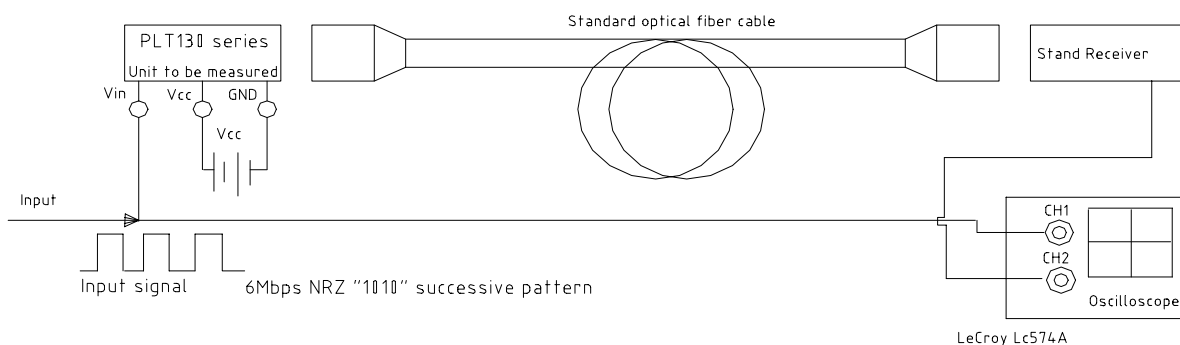
*1 Measuring method of optical output coupling fiber



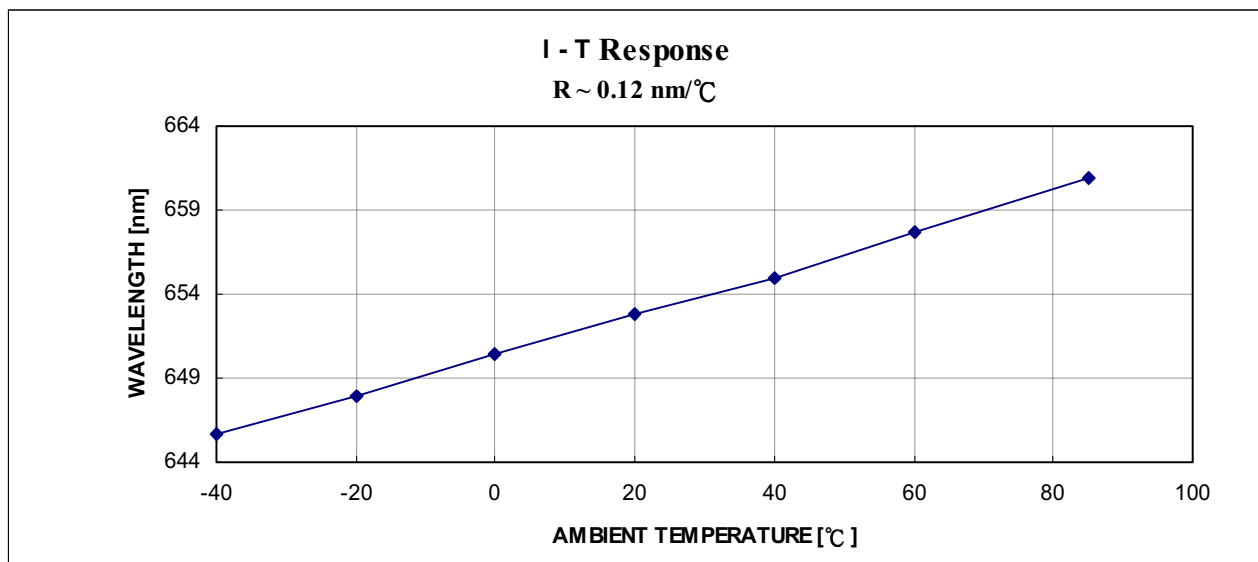
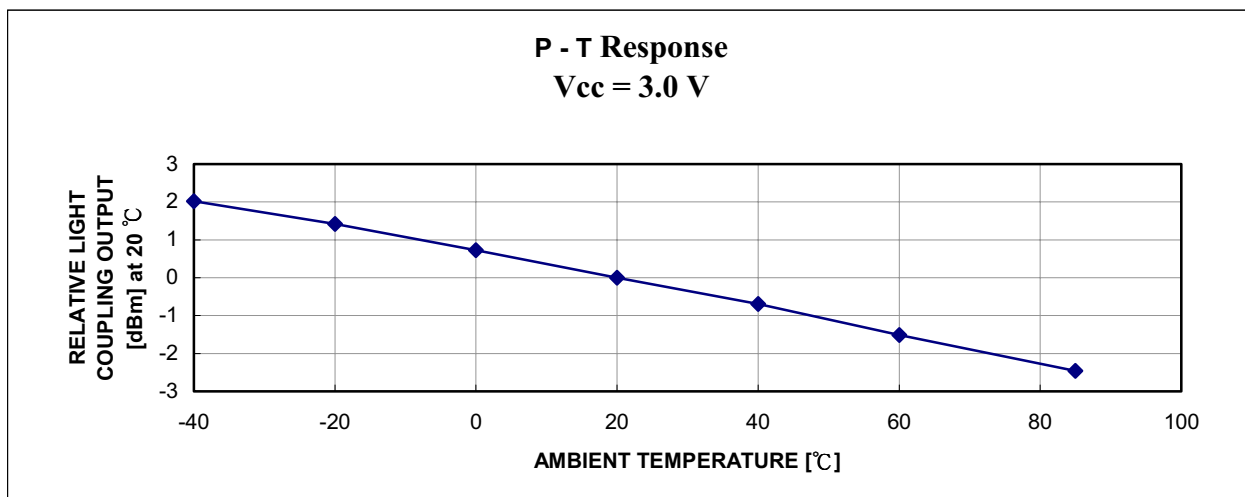
*2 Input voltage/power dissipation measuring method



*3 Pulse response measuring method



■ TYPICAL ELECTRO-OPTICAL CHARACTERISTICS CURVES

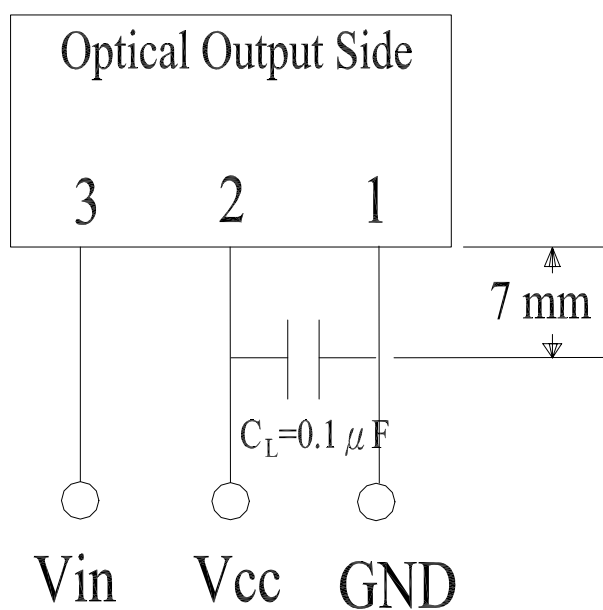


■ RELIABILITY TEST ITEMS

No.	Item	Test Condition	Test Hour/Cycle	Sample Size (piece)	Number (n) Failure (c)
1	Soldering Heat	260°C±5°C	10 seconds	22	n=22, c=0
2	Room Temp. Test(1)	Vcc=3V, Ta=25°C Vin signal: 6Mbps(NRZ)	1000	22	n=22, c=0
3	Room Temp. Test(2)	Vcc=3V, Ta=25°C Vin signal: DC(3V)	1000	22	n=22, c=0
4	High Temp. Test	Vcc=3V, Ta=85°C Vin signal: 6Mbps(NRZ)	1000	22	n=22, c=0
5	Low Temp. Test	Vcc=3V, Ta=-40°C Vin signal: 6Mbps(NRZ)	1000	22	n=22, c=0
6	High Temp.& Humi. Test	Ta=85°C, RH85%	1000	22	n=22, c=0
7	Temperature Cycle Test	-30°C ~~~~ 85°C (30min) (5min) (30min)	50	22	n=22, c=0
8	Thermal Shock Test	-10°C ~~~~ 100°C (5min) (10sec) (5min)	50	22	n=22, c=0
9	High temp Operation life	Vcc=3V, Ta=60°C 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.