



## Technical Data Sheet

# Photolink- Fiber Optic Transmitter

**PLT133/T1**

### 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.



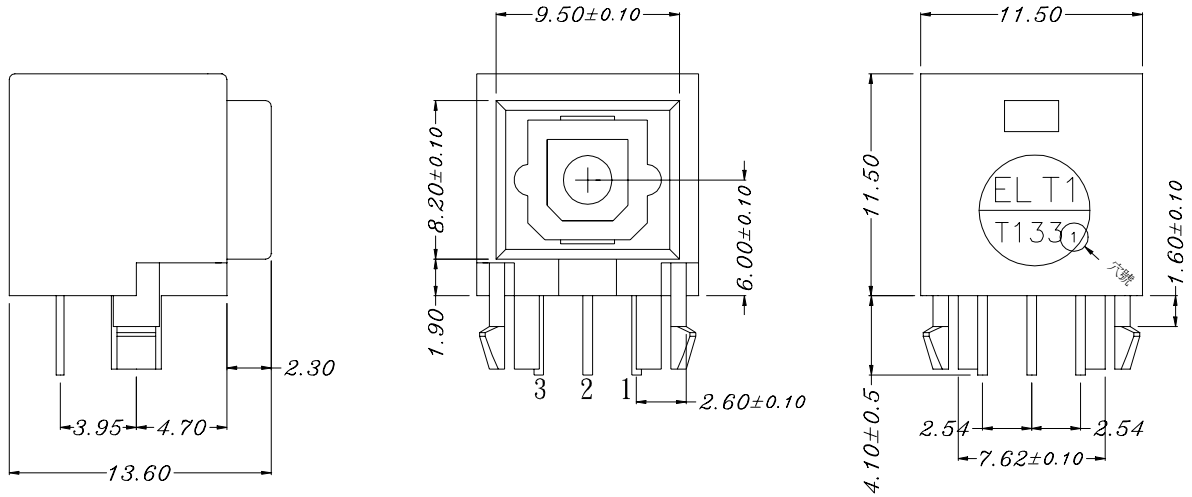
### Applications

- Digital audio equipment
- CD player
- DVD player

### Device Selection Guide

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

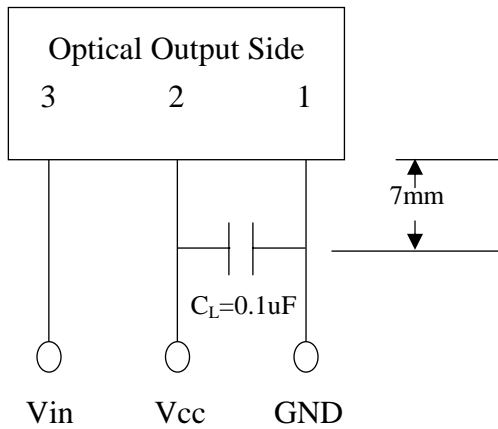
**Package Dimensions**



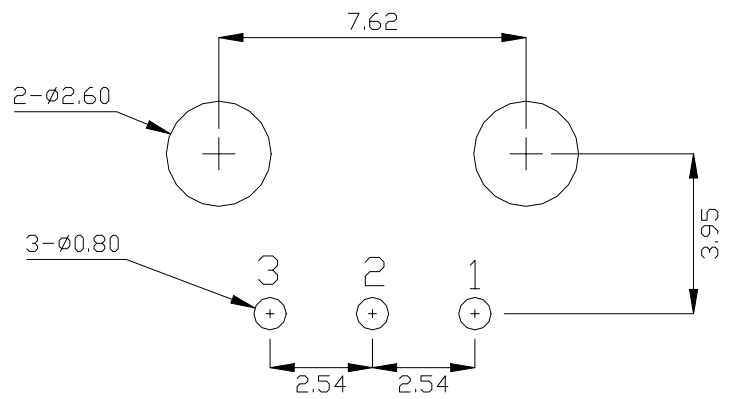
**Notes:** 1.All dimensions are in millimeters.  
2.General Tolerance :±0.3mm

**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  $\leq$  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	$\lambda_p$		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 <sub>IH</sub>		2	-	-	V
Low Level Input Voltage	V <sub>IL</sub>		-	-	0.8	V
Low to High Delay Time	t <sub>pLH</sub>	*2	-	-	120	ns
High to Low Delay Time	t <sub>pHL</sub>	*2	-	-	120	ns
Pulse Width Distortion	$\Delta tw$	*2	-25	-	25	ns
Jitter	$\Delta tj$	*2	-	-	20	ns

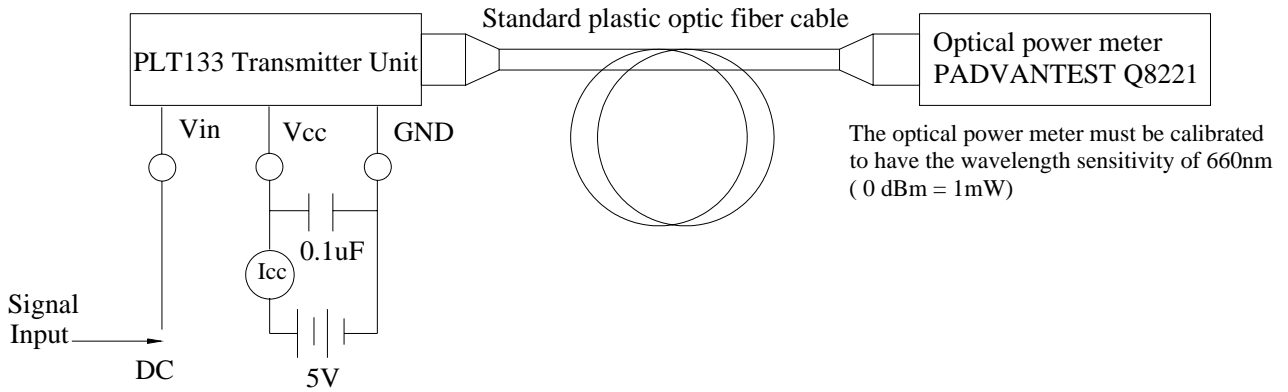
\*All Plastic Optical Fiber (980/1000um)

\*Circuit Layout Notice:

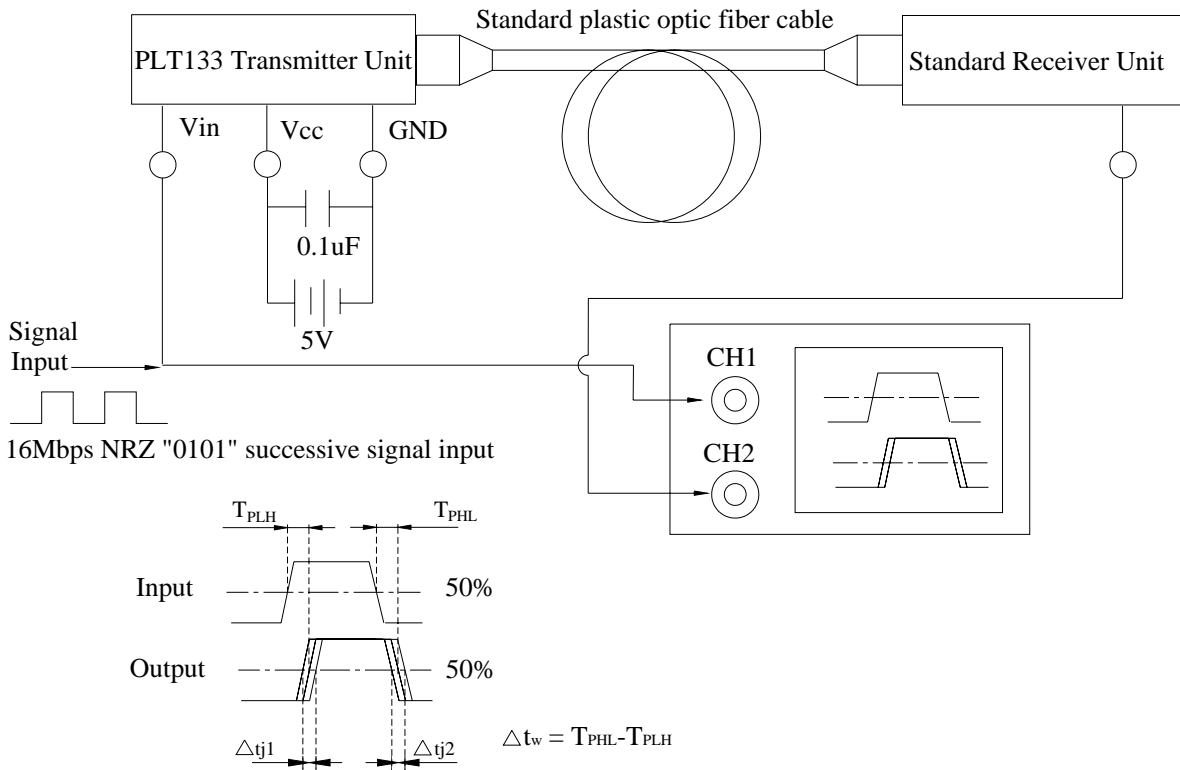
When power is off, it must be cut off together in Vin and Vcc pin. If it only has Vcc power-off, LED will be sparkling because LED is just threshold condition.

### 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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