



# Technical Data Sheet

## Photo-link Light Transmitter Unit

### PLT552 Series

#### Features

- High speed signal transmission ( 50Mbps 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 GaAs RCLED 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.

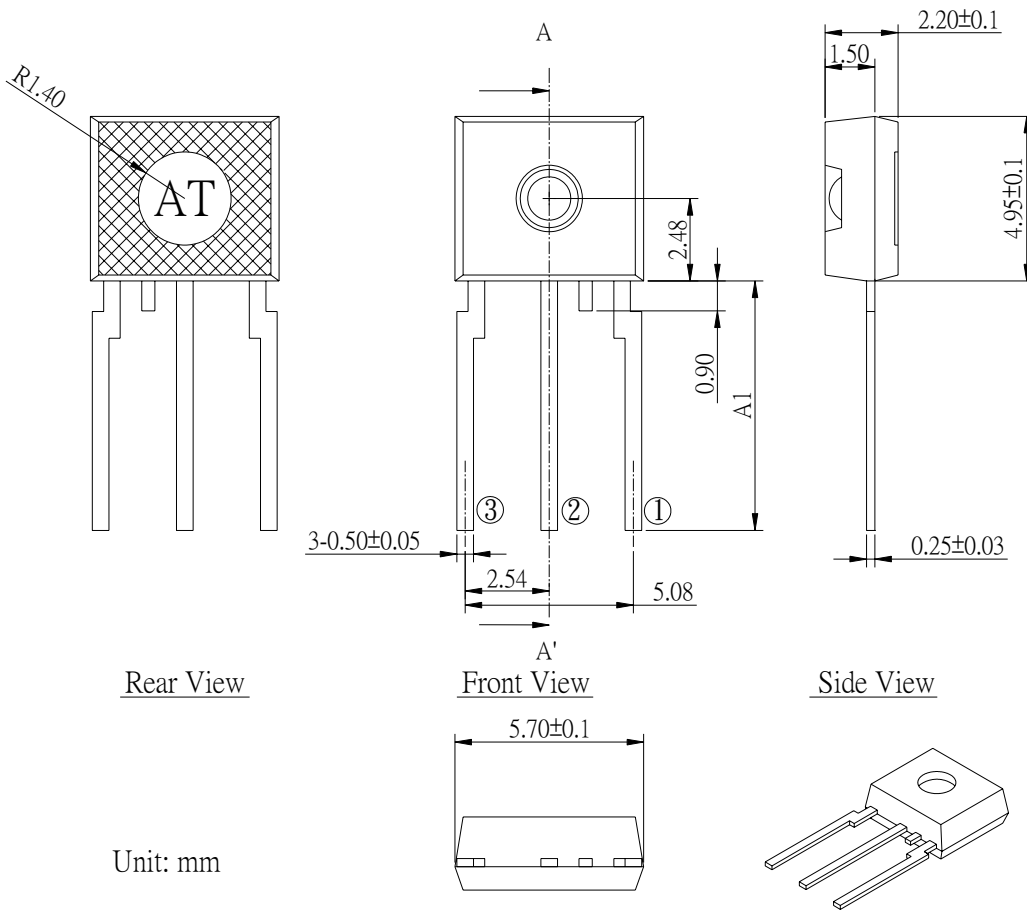
#### Applications

- Digital audio equipment
- CD player
- DVD player
- HDMI Digital (192kHz) Audio Interface
- Below 50Mbps Transfer Signal Market

#### Device Selection Guide

Chip		Operating Voltage (Vcc)	Dissipation Current(mA)		Fiber Coupling Light Output (dBm)		
Material	$\lambda$ p(nm)		Typ.	Max.	Min.	Typ.	Max.
GaAs	660	+3.0~5.0	8	10	-21	---	-15

**Package Dimension:**



- Notes:**
- 1.All dimensions are in millimeters.
  - 2.General Tolerance:  $\pm 0.10$  mm
  - 3.Leadframe Material: NM3K
  - 4.Device Selection Table:

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

Device Name	Pin Length A1 (mm)
PLT552	12.55±0.50
PLT552/S1	7.50±0.25
PLT552/S5	Min 16.50

**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
Human Body Model ESD	HBM	3K	V
Machine Model ESD	MM	300	V

\* 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	$\lambda_p$		640	660	680	nm
Transmission Rate		NRZ Code	DC	-	50	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
Rise Time	Tr	50Mbps	-	8	10	ns
Fall Time	Tf	50Mbps	-	8	10	ns
Low to High Delay Time	t <sub>pLH</sub>	*2	-	-	50	ns
High to Low Delay Time	t <sub>pHL</sub>	*2	-	-	50	ns
Pulse Width Distortion	$\Delta t_w$	*2	-5	-	5	ns
Jitter	$\Delta t_j$	*2	-	-	5	ns

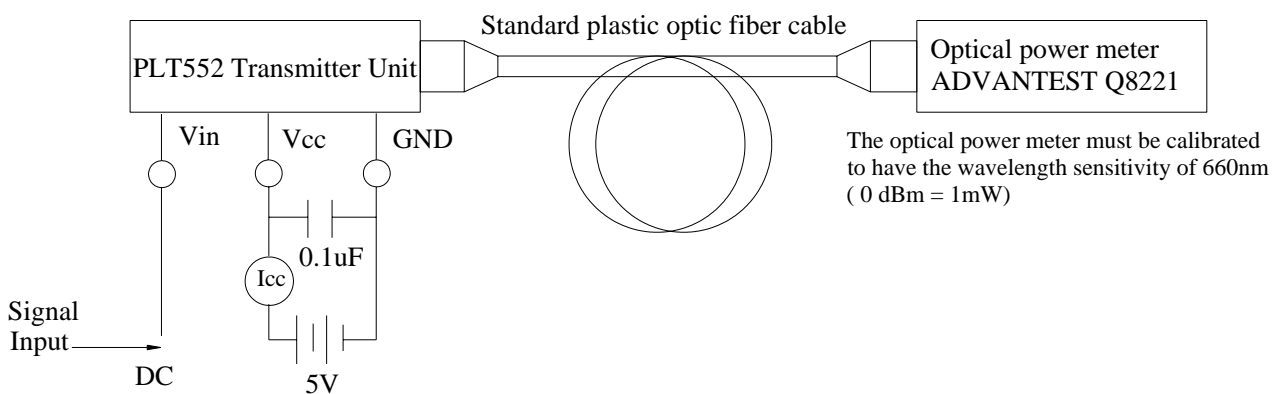
\*All Plastic Optical Fiber ( 980/1000um )

\*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 sure to be no output power.

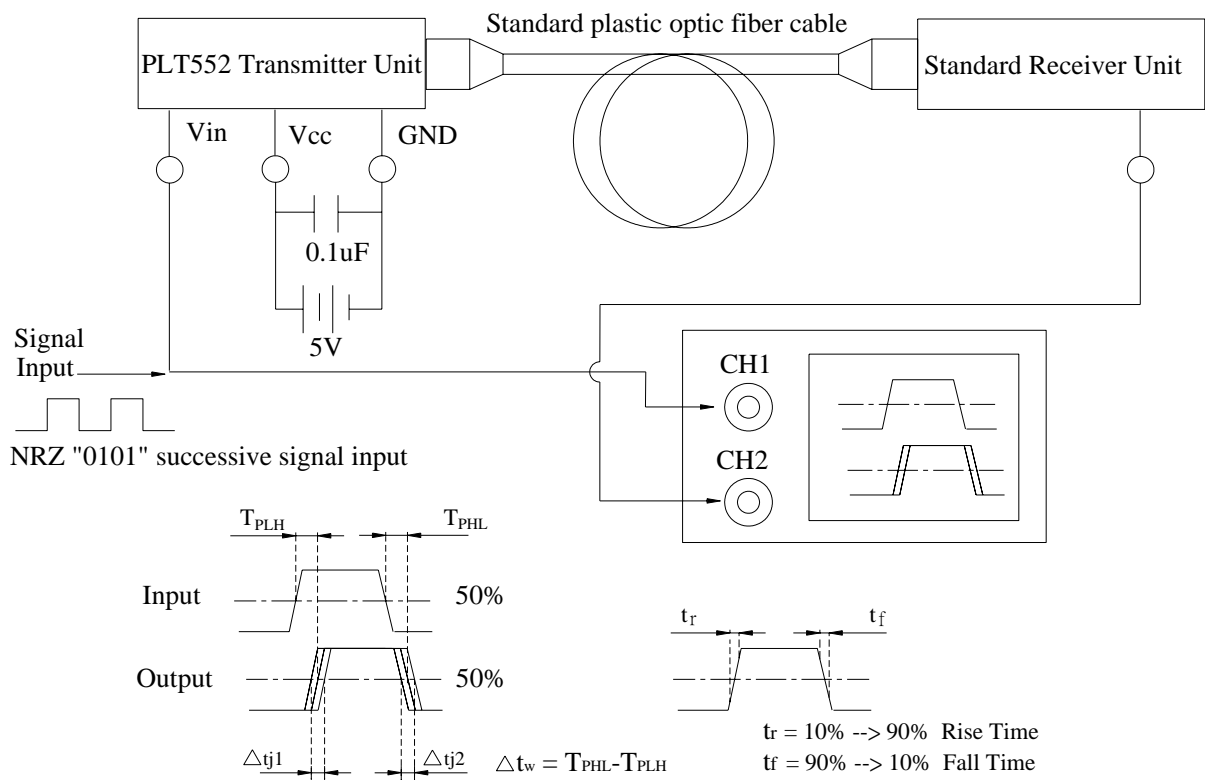
Vcc	Vin	LED Condition
2.7~5.5V	High	ON
2.7~5.5V	Low	OFF
2.7~5.5V	FLOATING	OFF
FLOATING	0~Vcc	OFF

**Measuring Method**

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

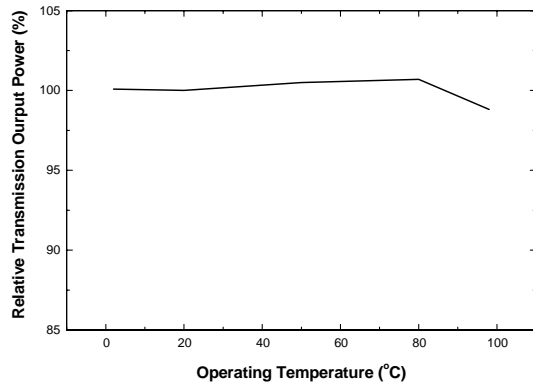


\*2 Pulse response measuring method

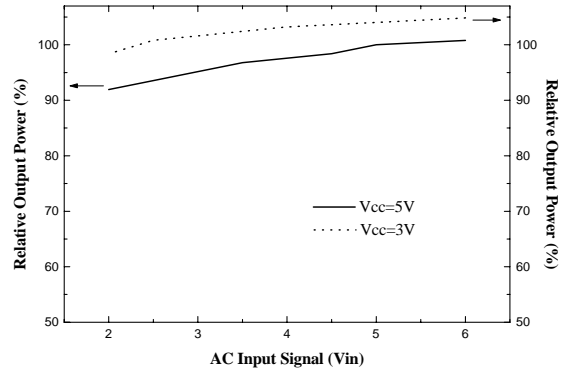


**Typical Electro-Optical Characteristics Curves**

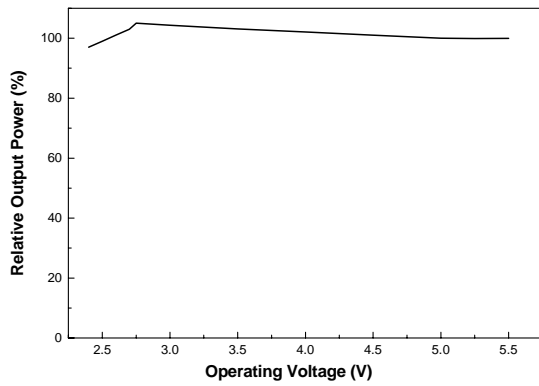
\*Fig.3 Relative Output Power vs. Operating Temperature



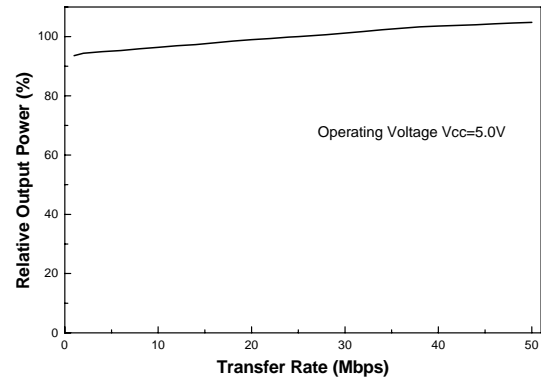
\*Fig.4 Relative Output Power vs. Input Signal



\*Fig.5 Relative Output Power vs. Operating Voltage



\*Fig.6 Relative Output Power vs. Transfer Rate



**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= -40°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	76	n=76, c=0

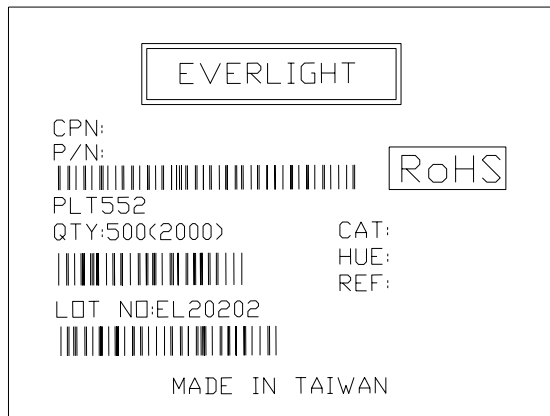
\*Icc(mA) : Difference < 20%

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

### **Packing Quantity Specification**

1. 1000 or 500 pcs/bag
2. 8 or 4 bag/box

### **Label Form Specification**



CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Deflash

HUE: None

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

### **Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product that does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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