

## POF Toslink Transmitter Optical Module Series

### Data Sheet

---

## Overview

The TS-TXXXXX is a standard-package transmitter module that is fully compatible for JEITA standard CP-1212 and EIAJ RC-5720B. The transmitter is assembled with a 660nm LED and a drive IC. The function of unit changes the electric signal into light signal.

The TS-TXXXXX is operated at +3V~+5V and has a maximum operating speed of 16Mbps. The module has good performance at low dissipation current, steady light output and efficient light coupling.



## Content

CONTENT.....	2
FEATURES .....	3
APPLICATION.....	3
ABSOLUTE MAXIMUM RATING (TA=25°C) .....	4
OPTICAL AND ELECTRICAL CHARACTERISTICS OF TRANSMITTER.....	4
RELIABILITY TEST ITEMS .....	5
PHYSICAL DIMENSION.....	6
PCB LAYOUT .....	6
MEASURING CIRCUIT .....	7
ORDER INFORMATION.....	9
PACKAGING SPECIFICATION.....	10

## Features

- (1) Transmission Rate: 16Mbps(NRZ Signal)
- (2) Peak Wavelength: 660±20 nm
- (3) Operating Temperature: -20~70 ℃
- (4) Power Source: +3V~+5V
- (5) TTL Interface Compatible

## Application

- DVD, CD, MD Player
- Audio Equipment
- PC, Notebook
- Sound Card

## Absolute Maximum Rating (Ta=25°C)

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	V <sub>CC</sub>	-0.5	7	V
DC Input Voltage	V <sub>in</sub>	-	V <sub>CC</sub> +0.5	V
Power Dissipation	P		120	mW
Storage Temperature	T <sub>stg</sub>	-30	80	°C
Operating Temperature	T <sub>opr</sub>	-20	70	°C
Soldering Temperature	T <sub>soi</sub>		260 <sup>(1)</sup>	°C

Note: (1) Soldering time ≤ 10s

## Optical and Electrical Characteristics of Transmitter

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operation Voltage	V <sub>CC</sub>	2.75	-	3.25	V
Peak Wavelength	λ <sub>p</sub>	640	660	680	nm
Transmission Rate (NRZ Code)		DC	-	16	Mbps
Fiber Coupling Output Power	P <sub>f</sub>	-21	-18	-15	dBm
Dissipation Current	I <sub>CC</sub>	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 Propagation Delay Time	T <sub>PLH</sub>	-	-	120	Ns
High to Low Propagation Delay Time	T <sub>PHL</sub>	-	-	120	Ns
Pulse Width Distortion	Δtw	-25	-	25	Ns
Jitter	Δt <sub>j</sub>	-	-	20	Ns

## Reliability Test Items

No.	Item	Test Condition	Test Hour / Cycle	Failure / Sample Number
1	Soldering Heat	260°C±5°C	10s	0/22
2	High Temperature & Humidity Test	Ta=40°C, 90%RH	500hrs	0/22
3	High Storage Temperature	Ta=80°C	500hrs	0/22
4	Low Storage Temperature	Ta=-30°C	500hrs	0/22
5	Temperature (Cycling)	-30°C ~ 80°C (30min) (30min)	20cycle	0/22
6	High Temperature Operation Life	Ta=60°C, Vcc=5V, ON	500hrs	0/22
7	Mechanical Shock	Acceleration: 1000m/s <sup>2</sup> Pulse Width: 6 ms 3 times/ X, Y, Z direction		0/22
8	Terminal Strength (tension)	Weight: 500g	30 sec./each terminal	0/22
9	Terminal Strength (bending)	Weight: 500g	2 times/each terminal	0/22
10	Vibration	Frequency Range: 10~55Hz/ sweep 1 min Overall Amplitude: 1.5mm 2hrs/ X, Y, Z direction		0/22
11	Repeated Operation	Coupling Force<2kg 0.4kg<Detaching Force<2kg	500 times	0/22

### Judgment Criteria

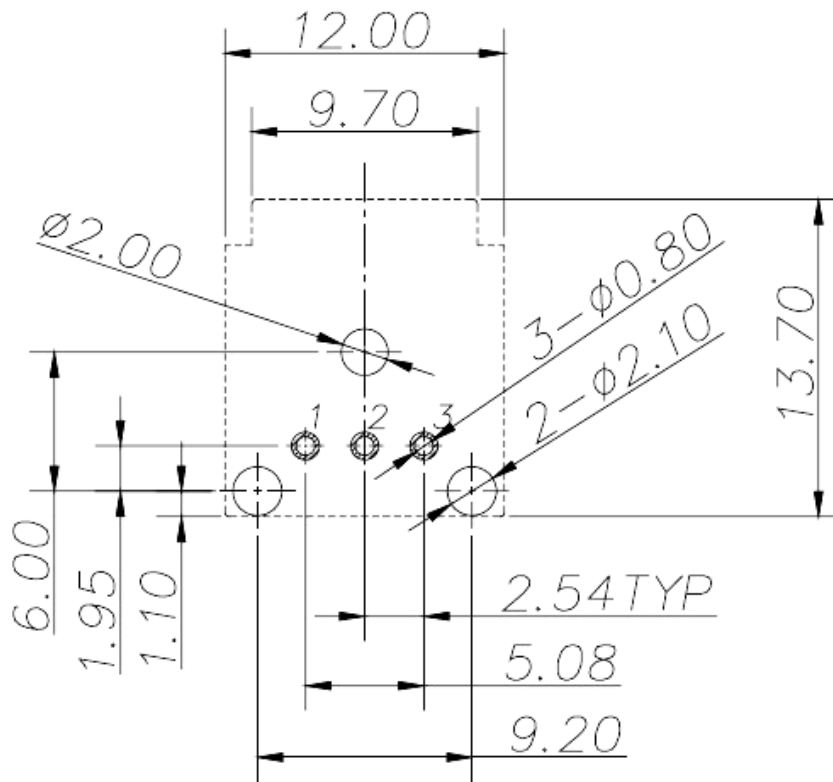
- **Icc (Dissipation Current): Current Difference<20%**
- **Pf (Fiber Coupling Output Power): Brightness Attenuate Difference<20%**

## Physical Dimension

Please Review the Detail Drawings at COMOSS Website.

## PCB Layout

For TS-TADFP3 Examples



PCB Layout  
Component Side View

Pin No.	Symbol	Function
1	GND	Ground
2	Vcc	Input Voltage
3	Vin	Signal Input

## Measuring Circuit

Fig.1 Measuring Method of Input Voltage/Power Dissipation ( $P_c$ ) and Dissipation Current ( $I_{cc}$ )

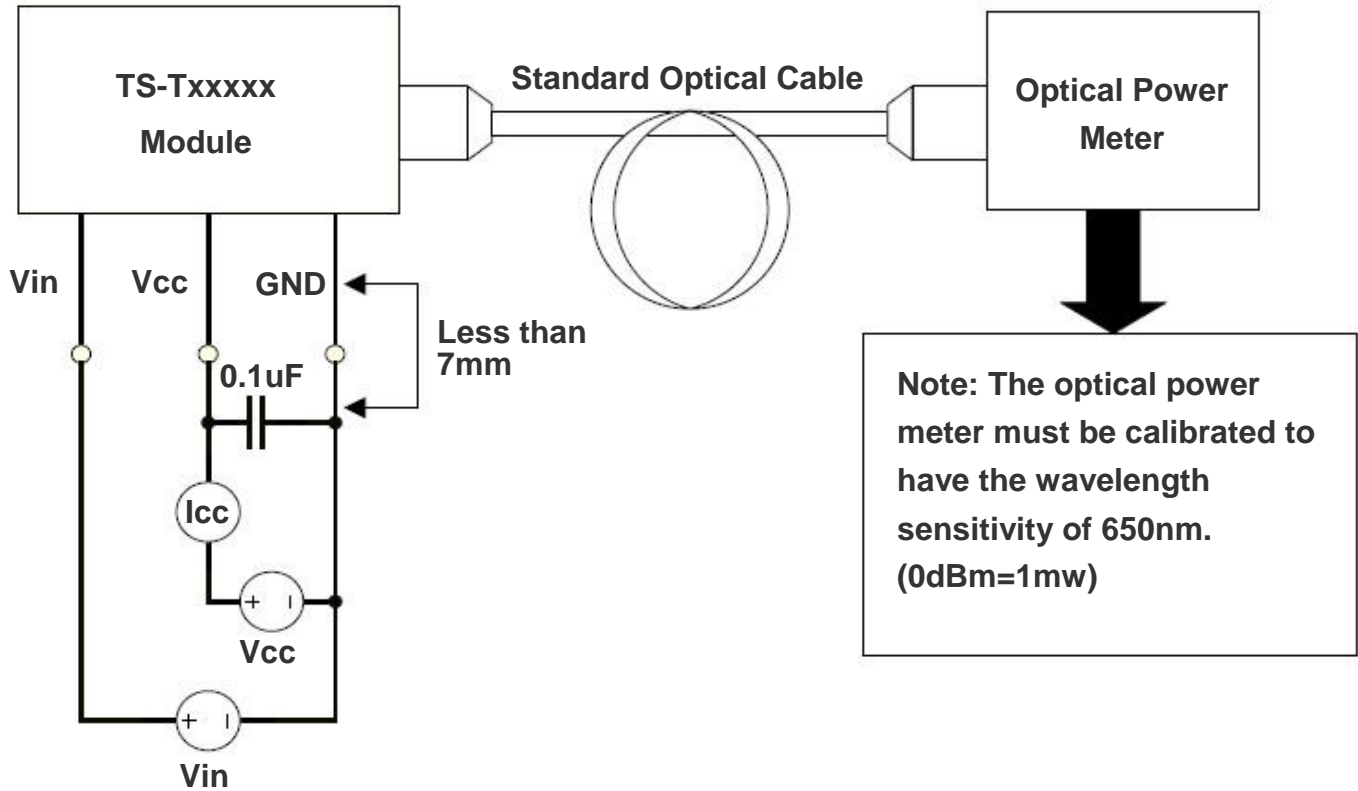
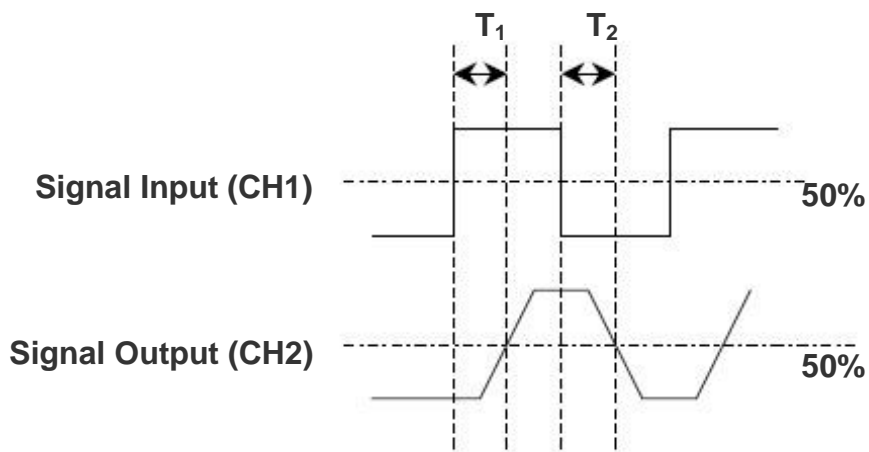
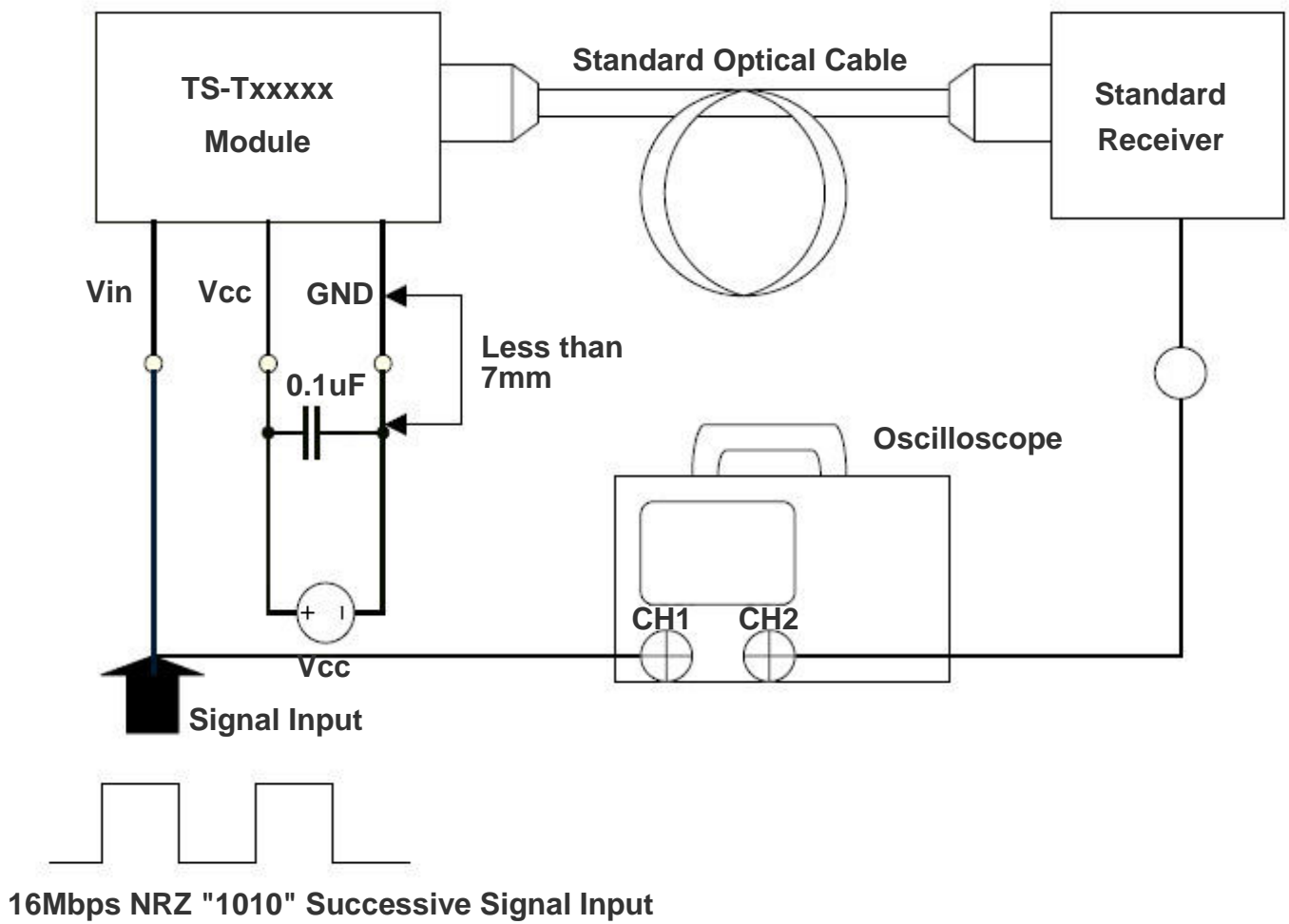


Fig.2 Pulse Response Measuring Method



## Order Information

TS - T A X X X X  
(1) (2) (3) (4) (5) (6)

**(1) Function Type :**

- T: Transmitter (Black)
- R: Receiver (Gray)

**(2) Data Rate (Mbps):**

- A: 16.0

**(3) Lid Option:**

- D: Dust Cover
- S: Shutter

**(6) Number of Post:**

- 2: Two Posts
- 3: Three Posts

**(5) Location Option:**

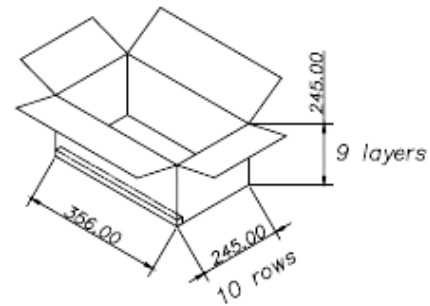
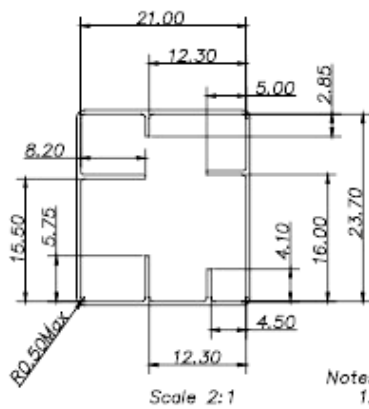
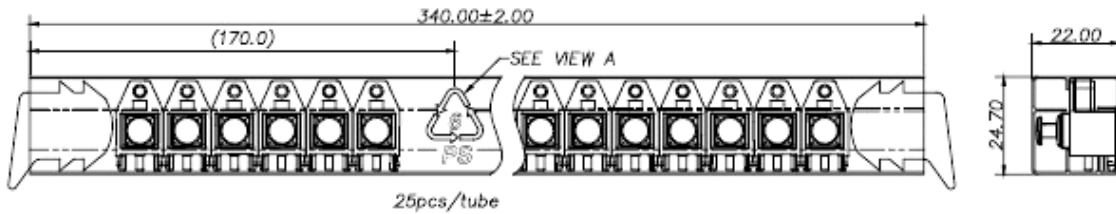
- M: Metal Post
- P: Press Fit Post
- R: Round Post

**(4) Shape Type:**

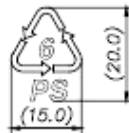
- F: Flange
- W: Without Flange

# Packaging Specification

Unit: mm



- Notes:
1. Material: Transparent PS (Recycling material)
  2. Thickness: 0.50
  3. Printer Color: Blue



Recycling Mark  
VIEW A