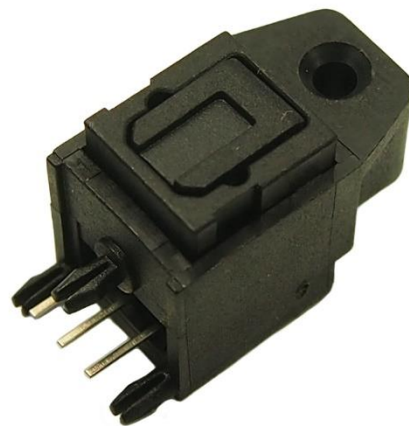


## Features

- High PD sensitivity for red light
- High speed up to 16Mbps
- Low power consumption and current dissipation

## RS PRO Optical Receiver jack

RS Stock No.: 805-1671



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

## Product Description

This light receiving unit is a standard-package product with connector and opto-electric component packaged with PD and I/V amplifier IC. The function of unit changes the light signal into electrical signal.

The unit is operated at single +3V~ +5V and the input signal is TTL compatible. It has a maximum operating speed of 16Mbps. The unit has high performance at low dissipation current, steady light output and efficient light coupling.

### Applications

Audio equipment, Digital optical data link, MD, Sound card

## Device Selection Guide

Chip IC Material	Chip LED $\lambda_p$ (nm)	Operating Voltage (Vcc)	Dissipation Current (mA)	Fibre Coupling Light Output (dBm)
Si	700	2.7~5.5	Typ. 6.5	Min -24 to Max -14.5

## Maximum Ratings (Ta = 25°C)

Supply Voltage	Vcc	5.5 V
Storage Temperature	Tstg	-30 to +80°C
Operating Temperature	Topr	-20 to +70°C
Soldering Temperature	Tsol	260°C
Soldering Time		≤ 5 sec / 2 times

## Electro-Optical Specification

Operating Voltage	Vcc	2.7 to 5.5 V
Peak Detectable Wavelength	$\lambda_p$	Typical 700 nm
Transfer Speed		0.1 to 16 Mbps (NRZ signal)
Receiving Distance		0.2 to 20 m (Using APF)
Pulse Width Distortion	$\Delta tw$	-20 to 20 ns (16Mbps NRZ Signal)
Input Light power	Pi	-24 to -14.5 dBm. See measuring method
Dissipation Current	Icc	Typical 6 to 10 max mA. See measuring method
High Level Output Voltage	VOH	2.4v min
Low Level Output Voltage	VOL	0.4v max
Rise Time	tr	25ns Max.

Fall Time	$t_f$	25ns Max.
Low to High propagation delay time	$t_{PLH}$	100ns max
High to Low propagation delay time	$t_{PLH}$	100ns max
Jitter	$\Delta t_j$	Typical 1.5ns to max 15ns

## Reliability Tests

Sample test size: 22 pcs, no failures

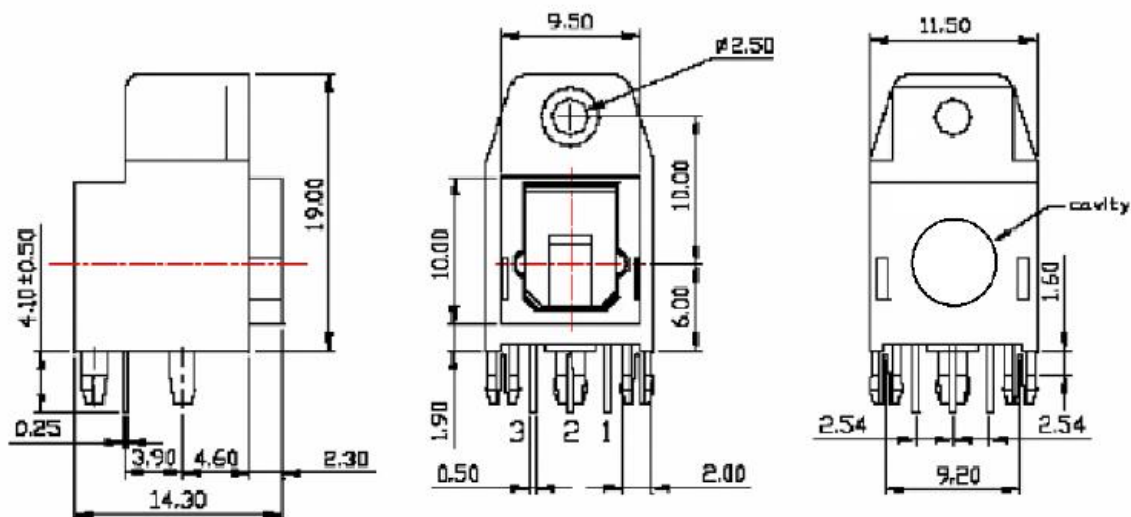
Item	Test Condition	Test Hours / Cycle
Soldering Heat	260°C $\pm$ 5°C	5 sec. / 2 times
High temp & Humidity storage	Ta=40°C, 90%RH	500
High storage temp.	Ta=80°C	500
Low storage temp.	Ta=-30°C	500
Temperature cycling	-30°C ~ 80°C (30min) (5min) (30min)	20
High temp operation life	Ta=60°C, Vcc=5V ON	500
Repeated operation	500 times	Coupling force < 2kg 0.4kg < detaching force < 2kg
Terminal strength (tension)	Weight: 500g, 30 sec each terminal	
Terminal strength (bending)	Weight: 500g, 2 times each terminal	
Mechanical Shock	Acceleration: 1000m/s <sup>2</sup> Pulse width: 6ms, 3 times / X, Y, Z direction	
Vibration	Frequency range: 10~55Hz / sweep 1 min Overall amplitude: 1.5mm 2H / X, Y, Z direction	

I<sub>cc</sub> (dissipation current): CURRENT ATTENUATE DIFFERENCE < 20%  
 T<sub>PLH</sub> (propagation L→H delay time): DELAY TIME DIFFERENCE < 20%  
 T<sub>PLH</sub> (propagation H→L delay time): DELAY TIME DIFFERENCE < 20%  
 T<sub>r</sub> (rise time): TIME DIFFERENCE < 20%  
 T<sub>f</sub> (fall time): TIME DIFFERENCE < 20%

## Approvals

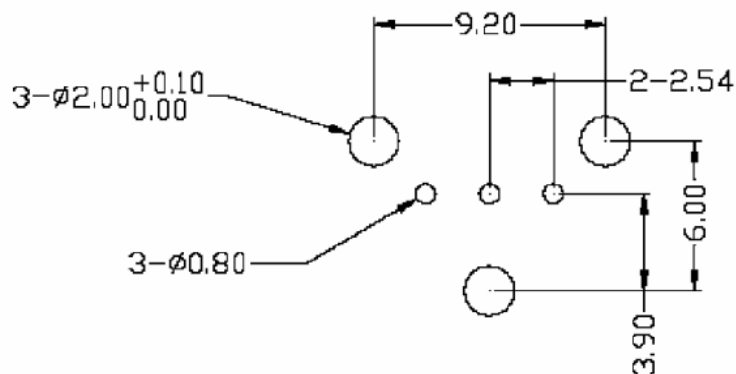
Conforms to	EIAJ CP-1201 digital audio interface standard
Standards Met	RoHS

## Package Dimensions



- Notes:**
1. All dimensions are in millimeters.
  2. General Tolerance: ±0.2mm

## PCB Layout For Electrical Circuit



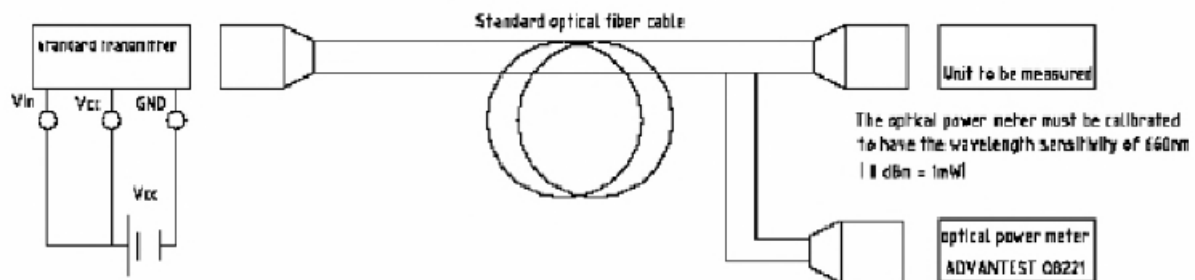
**Notes:**

1. Unit: mm
2. Unspecified tolerance: ±0.3mm
3. Substrate Thickness: 1.6mm

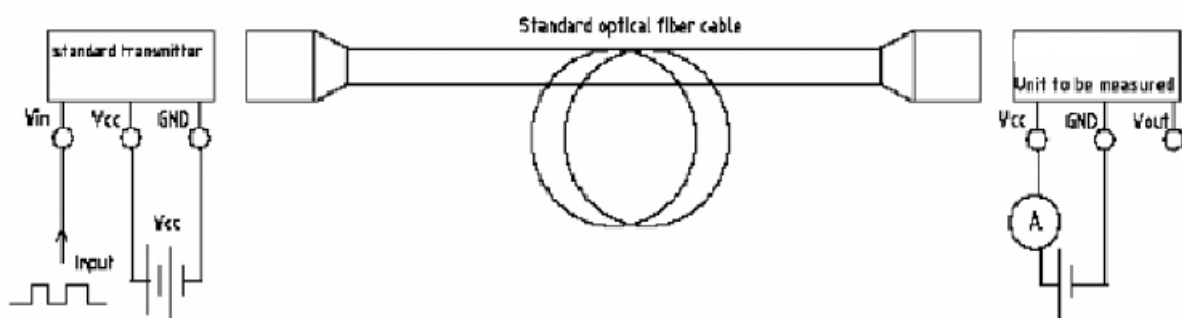
Tf (fall time): TIME DIFFERENCE < 20%

## Measuring Method

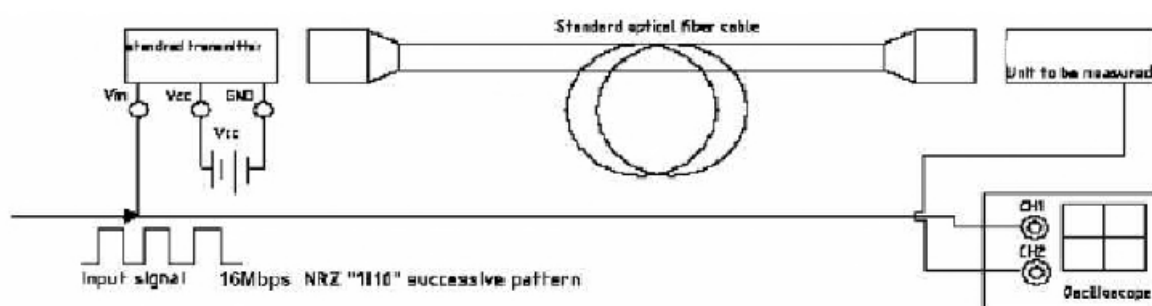
\*1 Maximum receiver input optical power/Minimum receiver input optical power



\*2 Current dissipation measuring method



\*3 Pulse response and jitter measuring method



## Precautions for Using Method

1. Connect a by-pass capacitor (0.1uF) close to the optical jack within 7 mm of the unit lead frame.
2. Connect a by-pass capacitor(30pF) between GND and Vout avoid loading effect.
3. Take proper electrostatic-discharge (ESD) precautions while handling these devices. These devices are sensitive to ESD.

