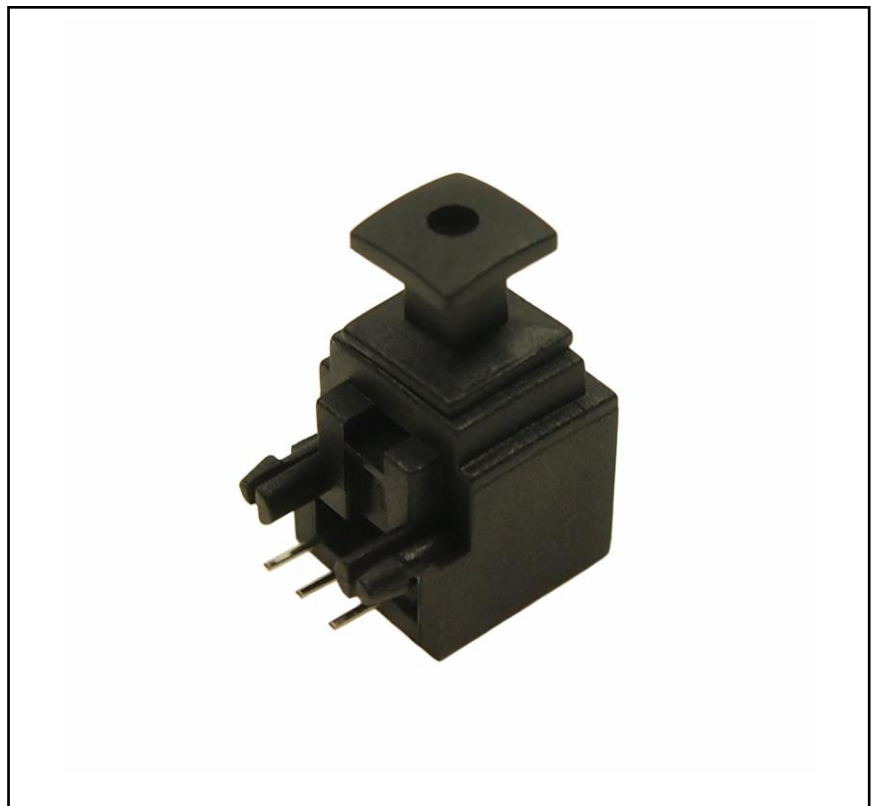


## Features

- High Speed signal transmission
- Input TTL Compatible
- Hinged shutter to prevent contamination

## RS PRO Optical Transmitter jack

RS Stock No.: 2707764



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 transmitting unit is a standard-package product with connector and opto-electric component packaged with 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 single +3V~ +5V and the input signal is TTL compatible. It has a maximum operating speed of 16Mbps. 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, PC, Notebook, 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	650	2.7~5.5	Typ. 5.5	Min -21 to Max -15

## Maximum Ratings (Ta = 25°C)

<b>Supply Voltage</b>	Vcc	-0.5 to 7 V
<b>DC Input Voltage</b>	Vin	-0.5 to Vcc +0.5 V
<b>Power Dissipation</b>	P	120 mW
<b>Storage Temperature</b>	Tstg	-30 to +80°C
<b>Operating Temperature</b>	Topr	-20 to +70°C
<b>Soldering Temperature</b>	Tsol	260°C
<b>Soldering Time</b>		≤ 5 sec / 2 times

## Electro-Optical Specification

<b>Operating Voltage</b>	Vcc	2.7 to 5.5 V
<b>Peak Emission Wavelength</b>	$\lambda_p$	640 to 670 nm
<b>Transmission Speed</b>		DC 16 Mbps (NRZ signal)
<b>Transmission Distance</b>		0.2 to 20 m (Using APF)
<b>Pulse Width Distortion</b>	$\Delta t_w$	-25 to 25 ns (16Mbps NRZ Signal)
<b>Fibre Coupling Light Output</b>	Pf	-21 to -15 dBm (Typical -17 dBm). See measuring method
<b>Dissipation Current</b>	Icc	Typical 5 to 10 max mA. See measuring method
<b>High Level Input Voltage</b>	V <sub>IH</sub>	2v min
<b>Low Level Input Voltage</b>	V <sub>IL</sub>	0.8v max

<b>Rise Time</b>	$t_r$	Typical 30ns to max 40ns
<b>Fall Time</b>	$t_f$	Typical 20ns to max 30ns
<b>Low to High propagation delay time</b>	$t_{PLH}$	100ns max
<b>High to Low propagation delay time</b>	$t_{PLH}$	100ns max
<b>Jitter</b>	$\Delta t_j$	Typical 1.5ns to max 15ns
<b>Supply Voltage</b>	$V_{cc}$	-0.5 to 7 V

## Reliability Tests

Sample test size: 22 pcs, no failures

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

Icc (dissipation current): CURRENT ATTENUATE DIFFERENCE < 20%

Pf (fibre coupling light output): BRIGHTNESS ATTENUATION DIFFERENCE < 20%

TPLH (propagation L→H delay time): DELAY TIME DIFFERENCE < 20%

TPLH (propagation H→L delay time): DELAY TIME DIFFERENCE < 20%

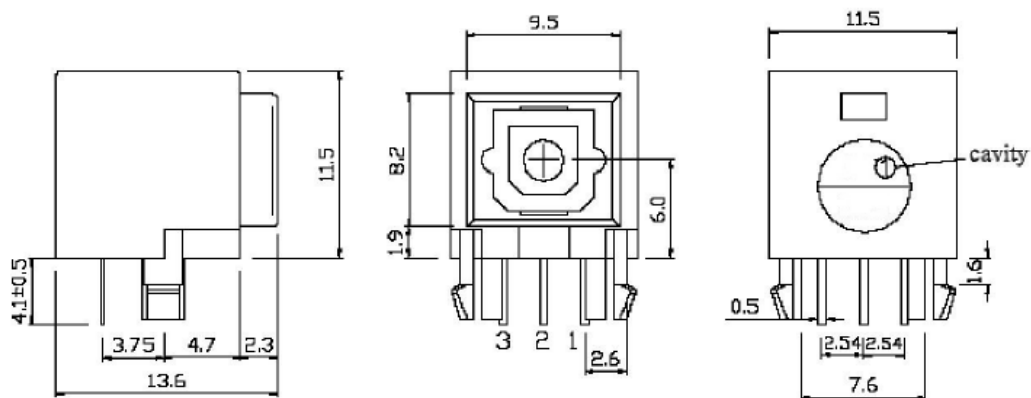
Tr (rise time): TIME DIFFERENCE < 20%

Tf (fall time): TIME DIFFERENCE < 20%

## Approvals

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

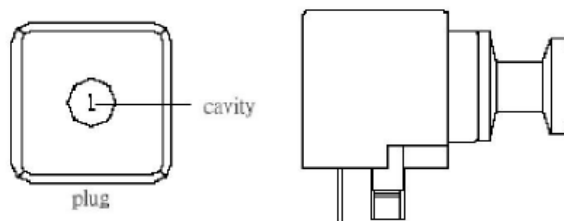
## Package Dimensions



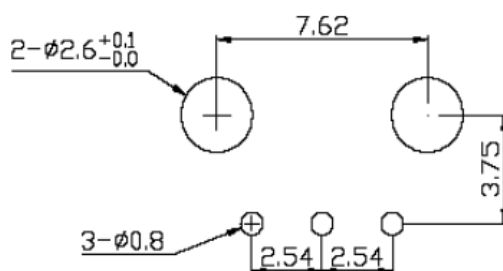
**Notes:** 1. All dimensions are in millimeters.  
2. General Tolerance:  $\pm 0.2\text{mm}$

## Pin Function

1. GND
2. Vcc
3. Vin



## PCB Layout For Electrical Circuit

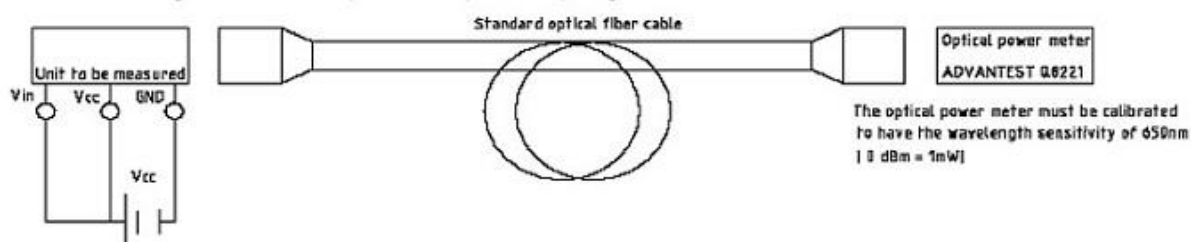


## Notes:

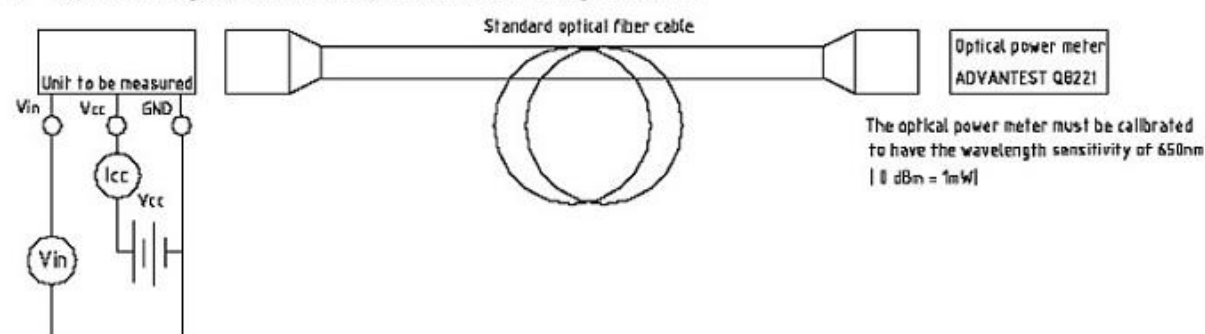
1. Unit: mm
2. Unspecified tolerance:  $\pm 0.3\text{mm}$
3. Substrate Thickness: 1.6mm

## Measuring Method

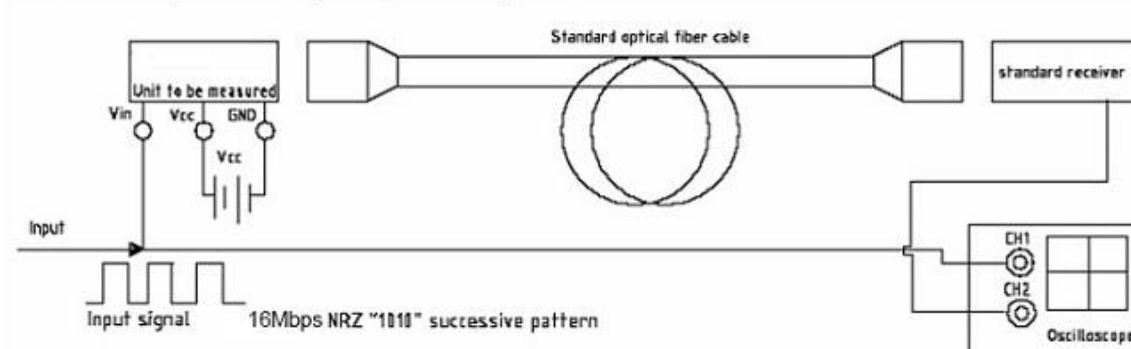
### \*1 Measuring method of optical output coupling fiber



### \*2 Input voltage/power 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. Take proper electrostatic-discharge (ESD) precautions while handling these devices. These devices are sensitive to ESD.
3. Please follow the conditions described in the diagram below.

