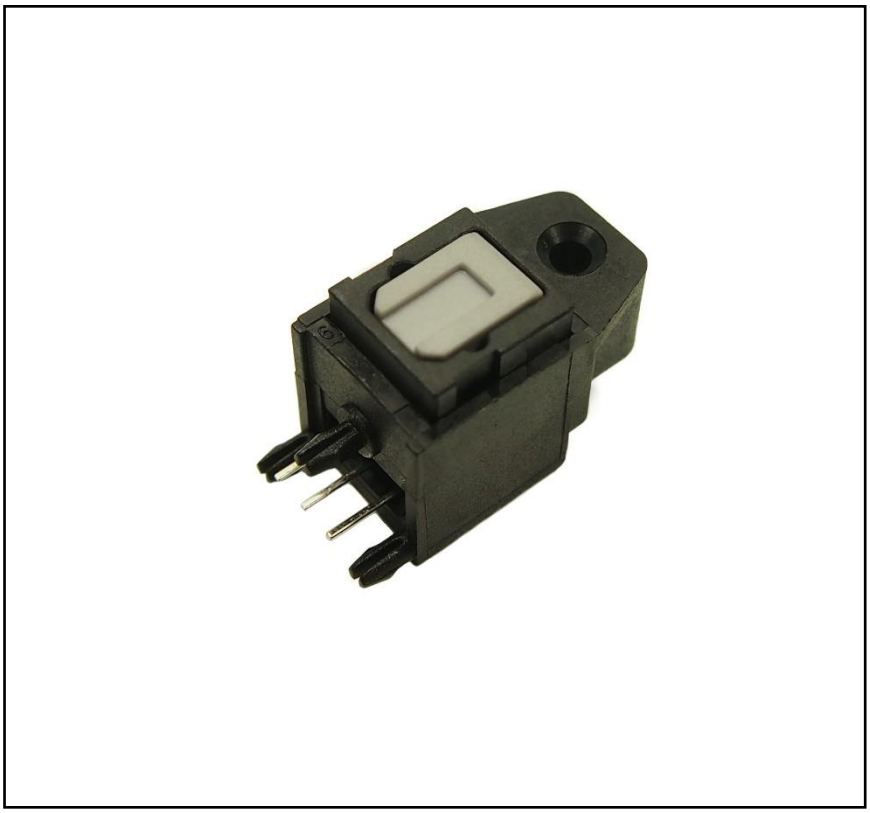
Features

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

RS PRO Optical Transmitter jack

RS Stock No.: 805-1680



RS PRO 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 λ 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)

Supply Voltage	Vcc	-0.5 to 7 V
DC Input Voltage	Vin	-0.5 to Vcc +0.5 V
Power Dissipation	P	120 mW
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 Emission Wavelength	λp	640 to 670 nm
Transmission Speed		DC 16 Mbps (NRZ signal)
Transmission Distance		0.2 to 20 m (Using APF)
Pulse Width Distortion	Δtw	-25 to 25 ns (16Mbps NRZ Signal)
Fibre Coupling Light Output	Pf	-21 to -15 dBm (Typical -17 dBm). See measuring method
Dissipation Current	Icc	Typical 5 to 10 max mA. See measuring method

High Level Input Voltage	V_{IH}	2v min
Low Level Input Voltage	V_{IL}	0.8v max
Rise Time	t_r	Typical 30ns to max 40ns
Fall Time	t_f	Typical 20ns to max 30ns
Low to High propagation delay time	tPLH	100ns max
High to Low propagation delay time	tPLH	100ns max
Jitter	∆tj	Typical 1.5ns to max 15ns

Reliability Tests

Sample test size: 22 pcs, no failures

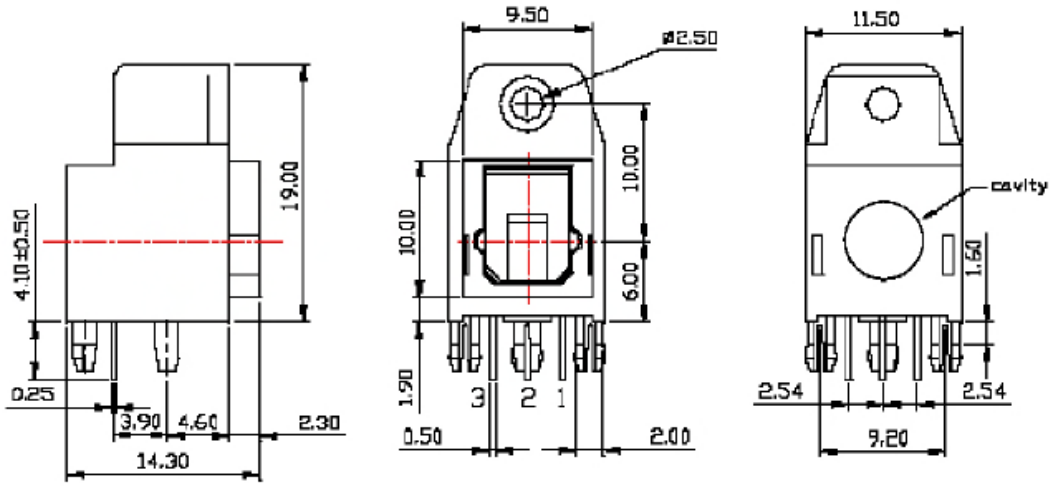
Item	Test Condition	Test Hours / Cycle
Soldering Heat	260°C ± 5°C	5 sec. / 2 times
High temp & Humidity storage	Ta=40°C, 90%RH	500
High storage temp.	Ta=80°C	500
Low storage temp.	Ta=-30°C	500
Temperature cycling	-30°C ~ 80°C (30min) (5min) (30min)	20
High temp operation life	Ta=60°C, Vcc=5V ON	500
Repeated 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/s2 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	

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%

Approvals

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

Package Dimensions

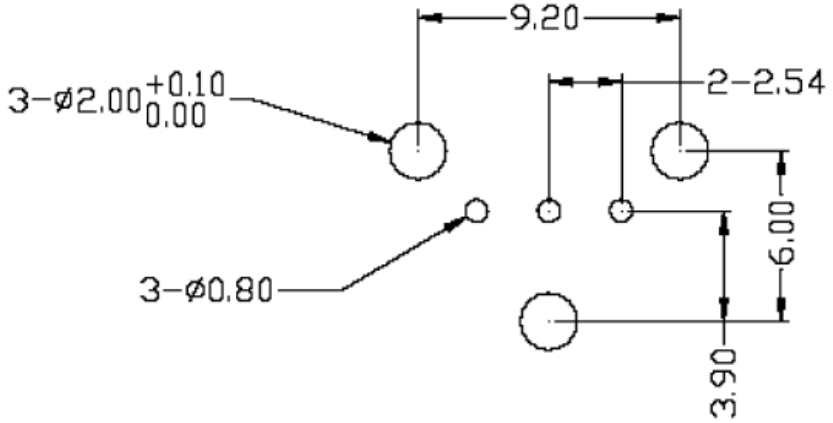


Notes: 1.All dimensions are in millimeters.
2.General Tolerance:±0.2mm

Pin Function

1. GND
2. Vcc
3. Vin

PCB Layout For Electrical Circuit

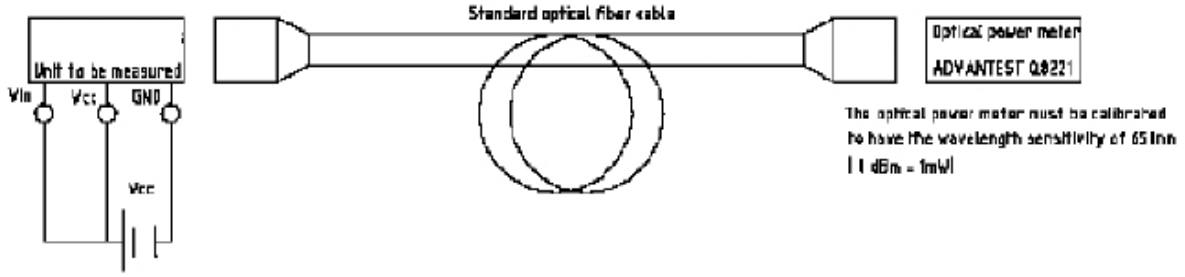


Notes:
1. Unit:mm
2. Unspecified tolerance: ±0.3mm
3. Substrate Thickness:1.6mm

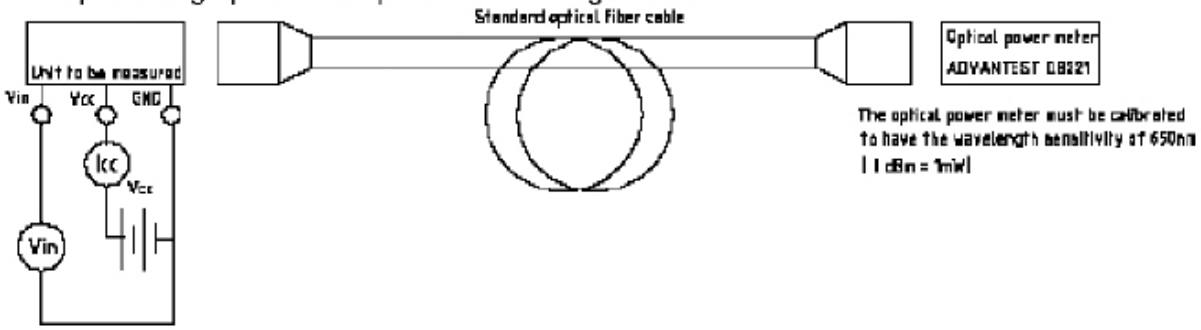
Tf (fall time): TIME DIFFERENCE < 20%

Measuring Method

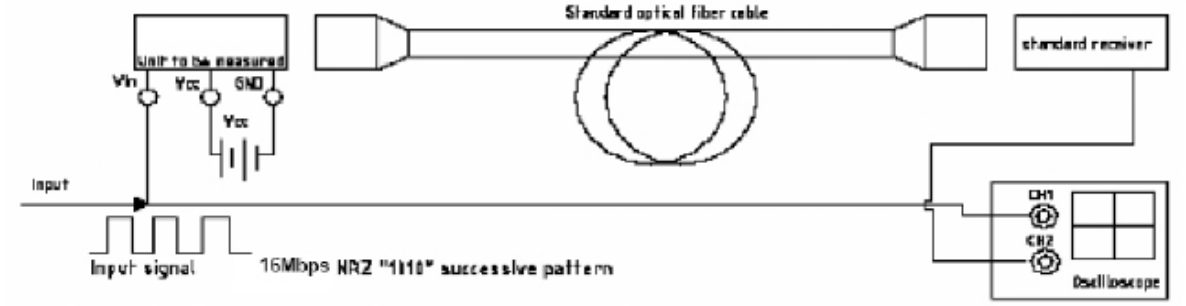
*1 Measuring method of optical output coupling fiber



*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.