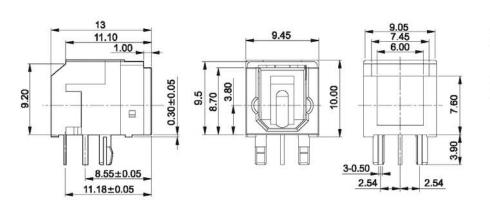


ISS.	AMEND	DATE





	PART NUMBER	TYPE		PIN OUT	
			1	2	3
Receiver	FC684208R	ORJ-8	V cc	GND	V out
Transmitter	FC684208T	OTJ-8	V in	V cc	GND

BOTTOM VIEW

## RoHS\_ COMPLIANT

TOLERANCE

NO DEC. PLACE ±

1 DEC. PLACE ±

2 DEC. PLACE ±

HOLE Ø ±

ANGLES ±

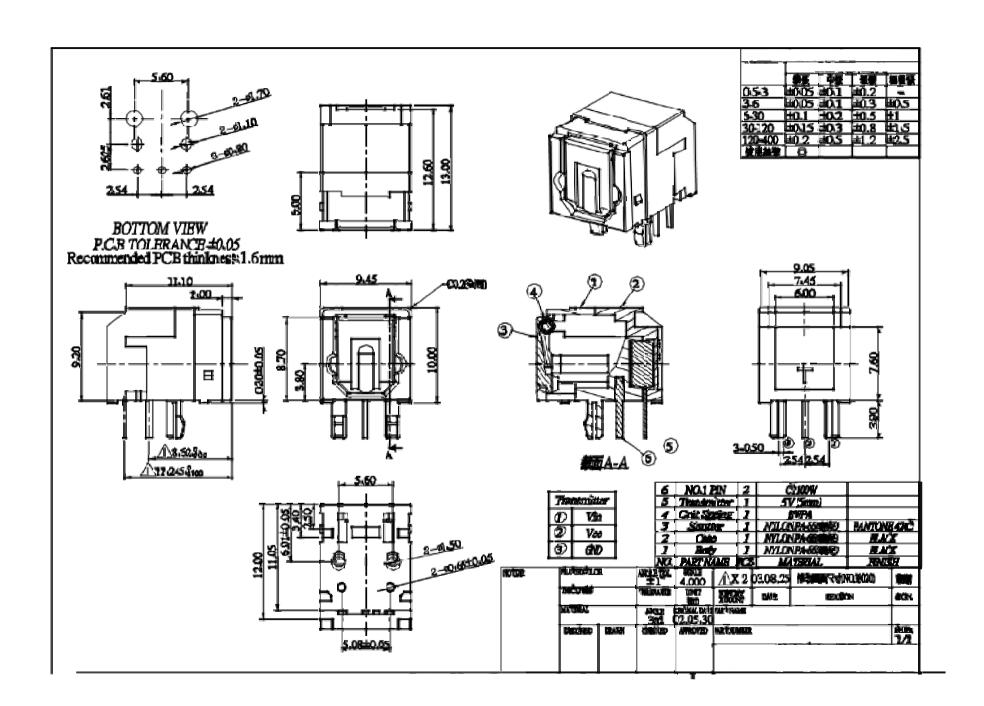
UNLESS

OTHERWISE STATED

Cliff Electronic Components Ltd.
76 Holmethorpe Avenue, Holmethorpe Industrial Estate,
Redhill, Surrey, RH1 2PF, England, UK
Tel: 01737-771375 Fax: 01737-766012 Website: www.diffuk.co.uk

THE CONTENTS OF THIS DOCUMENT MUST NOT BE COPIED OR DISCLOSED
TO A 3rd PARTY WITHOUT WRITTEN PERMISSION OF CLIFF UK. (C)

d.	DIMENSIONS IN MILLIMETERS UNLESS OTHERWISE S	STATED, WORK TO DIMENSIONS, REMOVE ALL BUR	RS. IF IN DOUBT ASK.	3rd ANGLE PROJECTION: (⊕) {}	DO NOT SCALE
	MATERIAL:		TITLE: OPTICAL	_ JACK	
050	FINISH:				
SED	DRAWN:	APPROVED.	DRWG. No.		FORM: A4DRWGH



### CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK

SPECIFICATION NO. PAGE: 1 OF 5

FC684208T

DATE: OCT,16,2006

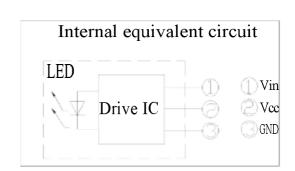
### OPTICAL CONNECTOR

### 1. Features

- (1) Uni-directional data transmission using plastic fiber.
- (2) Signal transmission speed: MAX. 12.5Mbps
- (3) Low voltage drive

Operating voltage: 2.75 to 5.25V

- (4) Minimum input optical power: MIN. -21dBm (EIAJ)
- (5) TTL and high speed C-MOS LOGIC IC compatible.



### 2. Applications

- (1) CD players
- (2) MD players
- (3) DVD players

### 3. Absolute Maximum Ratings

(Ta=25°C)

(10 25 4)						
Parameter	Symbol	Rating		Unit		
Supply voltage	Vcc	-0.5 to +7.0		V		
Input voltage	Vin	-0.5 to Vcc +0.	5	V		
Operating temperatur	e Topr	•20 to +70 °C				
Storage temperature	Tstg	-30 to +80 °C				
Soldering temperature	- Tsol	Solder Pool		0 +3°C 5s <sup>+1s</sup>		
Boldering temperature	- 1301			0 ±10°C 3s <sup>+1s</sup> -0s		

	Α	С	С	W
	Р	Н	Н	R
	V	K	K	T
REV. NAME DATE REMARK	D	D	D	N

CLIFF ELECTRONIC COMPONENTS LTD

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK

SPECIFICATION NO PAGE: 2 OF 5
FC684208T DATE: OCT,16,2006

### 4. Recommended Operating Conditions

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Operating supply voltage	Vcc	2.75	3.0	5.25	V
Operating transfer rate	Т	-	-	12.5	Mbps

### 5. Electro-optical Characteristics

Parameter Sym	bol Cond	tions MIN	TYP	MA	ζ. Un	nt.
Peak emission wavelengt	ի λթ		630	660	690 ı	n <b>m</b>
Optical power output coupling with fiber	Pc	Refer to Fig.1	<b>-</b> 21	-18	-15	∄Bm
Dissipation current	Icc	Refer to Fig.2	-	8	13	mΑ
High level input voltage	$\mathbf{V}_{i H}$	Refer to Fig.2	2.1	-	-	V
Low level input voltage	Vij.	Refer to Fig.2	-	-	0.8	V
Low → High delay time	tрLН	Refer to Fig.3	-	-	180	ns
High → Low delay time	tрнг	Refer to Fig.3	_	_	180	ns
Pulse width distortion	∆tw	Refer to Fig.3	-15	-	+15	ns
Jitter	Δtj	Refer to Fig.3	_	1	15	ns

### 6. Mechanical Characteristics

6-1.

Parameter	Symbo	l MIN.	TYP. I	MAX. U	<u> Init</u>
Insertion force.	-	3	_	40	N
Withdrawal force.	-	6	-	40	N

### 6-2. Repeated operation

Inserting and withdrawing shall be made at a speed of 20 times or less/min using mating plug 500 times.

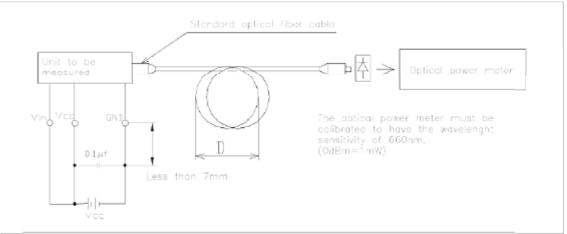
### 6-3. Strength of tapping part

The tapping part shall be capable of a torque of 8kgf-cm for 5 seconds by TP3 ×8 tapping tight screw and panel (t=0.8), the jack shall not be broken.

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK

SPECIFICATION NO PAGE: 3 OF 5 FC684208T DATE: OCT,16,2006

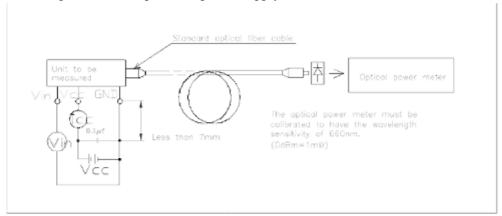
Fig.1 Measuring Method of Optical Output Coupling with Fiber.



Notes: (1) OC-08 Vcc=3.0V (State of operating).

(2) To bundle up the standard fiber optic cable, make it into a loop with the diameter D=10cm or more. (The standard fiber optic cable will be specified elsewhere.)

Fig.2 Measuring Method of Input Voltage and Supply Current.



Input conditions and judgement method.

Condition Judgment method

V<sub>in</sub>=2.1V or more. -2 I ≤Pc≤-15dBm, Icc=13mA or less.

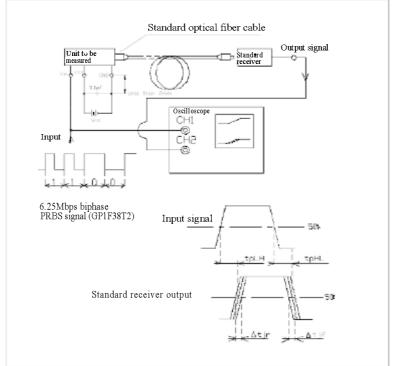
V<sub>in</sub>=0.8V or less. Pc≤-36dBm, Icc=13mA or less.

Note) Vcc=3.0V (State of operating).

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK

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Fig.3 Measuring Method of Pulse Response and Jitter.



Test item

Test item Symbol Tes	t condition	
Low → High pulse delay time	t <u>⊵∟н</u> Refer	o the above prescriptions
High → Low pulse delay time	tрнц Refer	to the above prescriptions
Pulse width distortion $\Delta t$	w ∆tw=	tрнг-tргн
Low → High Jitter	∆tir	Set the trigger on the rise of input signal to measure the jitter of the rise of output
High → Low Jitter	l ∆tif	Set the trigger on the fall of input signal to measure the jitter of the rise of output

Notes (1) The waveform write time shall be 4 seconds. But do not allow the waveform to be distorted by increasing the brightness too much.

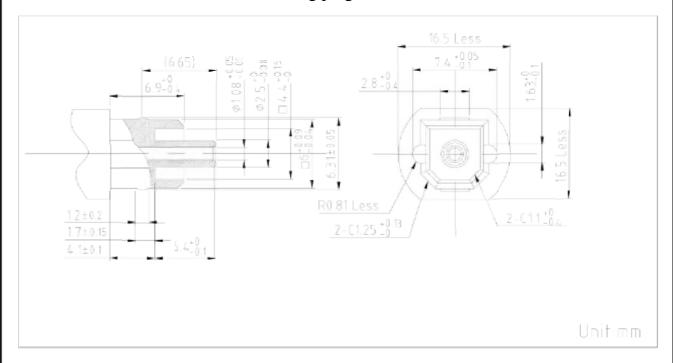
- (2) Vcc=3.0V (State of operating)
- (3) The probe for the oscilloscope must be more than  $1M\Omega$  and less than 10pF.

CUSTOMER MODEL NO. / TITLE OPTICAL TRANSMITTER JACK

SPECIFICATION NO PAGE: 5 OF 5

DATE: OCT,16,2006

# Mating plug



Document No.	Document name	Rev.	DATE
01-E	Management standards for "Environment-related substances to be controlled"	1.6	OCT,26,2006

- 1. This part should not contain any substances which are specified in follow .(Except cadmium is less than 5ppm, Lead is under 90ppm)
- 2. In this case, pre-processing methods and measurement methods shall conform to ROHS.

3. List of "Environment-related Substances to be Controlled ('The Controlled Substances')"

5. List of Environme	Substances Substances	Allowable			
	Cadmium and cadmium compounds	Less 5ppm			
•	Lead and lead compounds	Less 90ppm			
Heavy metals	Lead in the plastic, rubber, paints, ink	Less 50ppm			
•					
	Polychlorinated biphenyls (PCB)				
	Polychlorinated naphthalenes (PCN)				
Chlorinated organic compounds	Chlorinated paraffins (CP)				
Compounds	Mirex (Perchlordecone)				
	Other chlorinated organic compounds				
	Polybrominated biphenyls (PBB)				
Brominated organic	Polybrominated diphenylethers (PBDE)				
compounds	Tetrabromobisphenol-A-bis- (2, 3-dibromopropylether) (	TBBP-A-bis)			
	Other brominated organic compounds				
Organic tin compounds (tributy tin compounds, Triphenyl tin compounds)					
Asbestos					
Azo compounds					
Formaldehyde					
Polyvinyl chloride (P	VC) and PVC blends				

### 4. Allowable concentrations:

Less than 90ppm is determined as an allowable total-concentration of four heavy metals (mercury, cadmium, hexavalent chromium, and lead). Less than 5ppm is determined as an allowable cadmium-concentration in a plastic (including rubber) part.

Α	С	С	W
Р	Н	Н	R
٧	K	K	R T N
D	ח	ח	N

**REV. NAME DATE REMARK** 

Thursday, January 16, 2003

E41938

# E I DUPONT DE NEMOURS & CO INC

QMFZ2 Component - Plastics

ENGINEERING POLYMERS CHESTNUT RUN PLAZA PO BOX 80713 WILMINGTON DE 19880

Material Designation: 70G33L(+)

Product Description: Polyamide 66 (PA66), glass reinforced, designated "Zytel" furnished as pellets.

Color	Min. Thick. (mm)	Flame Class	HWI	HAI F	TI Elec R	tti Imp R'	HAI RTI Elec RTI Imp RTI Str IEC GWIT	IEC GWFI
ALL	0.71	HB	4	0	130	120	130	ı
	1.5	HB	4	0	130	120	130	ı
	3.0	HB	4	0	130	120	130	ı
	<b>CTI:</b> 0		HVTR: 1	<b>:</b> 1	D49	<b>D495:</b> 5	IEC BP: -	

Virgin and Regrind up to 50% by weight inclusive, have the same basic material characteristics. + (1) Material designations that are color pigmented may be followed by suffix letters and numbers. (2) Material designations may be prefixed by "ZYT" or NOTE

324299147 Underwriters Laboratories Inc® Report Date: 08/06/1996

flammability of plastic materials used in components and parts of end-product devices and appliances, where the acceptability of the combination is determined by ULI. UL94 small-scale test data does not pertain to building materials, furnishings and related contents. UL 94 small-scale test data is intended solely for determining the



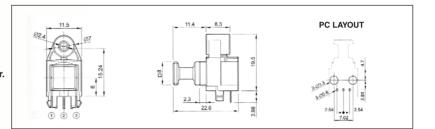
# **Optical Jacks**

The **CLIFF®** range of Optical Transmitter and Receiver jacks feature seven different models that conform to the EIAJ standard CP-1201 for Digital Audio Interfaces including Fibre-Optical interconnections. Optical Jacks are virtually unaffected by noise when transmitting and receiving signals between digital audio equipment, enabling high-quality audio recording and high speed signal receiving. It continues to be adopted as a virtual standard in portable audio equipment. Several models have a self-tapping hole for panel mounting and three models replace the plug-in cover with a convenient hinged shutter to protect against contamination.



OTJ-1/ORJ-1 Single Optical Transmitter and Receiver Jack. Right angle PCB mount with self tapping hole for panel mounting. Removable plug-in cover.

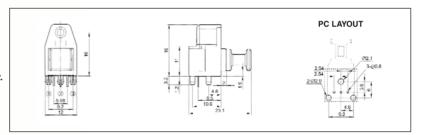
OTJ-1 (FC6842031T) ORJ-1 (FC6842031R)





OTJ-2/ORJ-2 Single Optical Transmitter and Receiver Jack. Right angle PCB mount with self tapping hole for panel mounting. Removable plug-in cover.

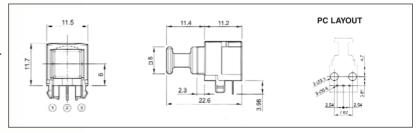
OTJ-2 (FC684202T) ORJ-2 (FC684202R)





OTJ-3/ORJ-3 Single Optical Transmitter and Receiver Jack. Right angle PCB mount. Removable plug-in cover.

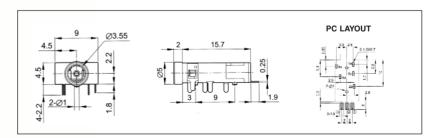
OTJ-3 (FC6842032T) ORJ-3 (FC6842032R)





OTJ-4/ORJ-4 Single Optical Transmitter and Receiver Jack. Low profile right angle PCB mount.

OTJ-4 (FC684204T) ORJ-4 (FC684204R)



### Cliff Electronic Components, Ltd.

76 Holmethorpe Avenue, Holmethorpe Ind. Est. Redhill, Surrey RH1 2PF. England

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Visit us online at:

www.cliffuk.co.uk

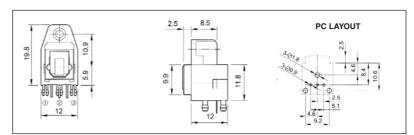


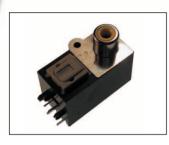
# **Optical Jacks**



OTJ-5/ORJ-5 Single Optical Transmitter and Receiver Jack, Right angle PCB mount with self tapping hole for panel mounting. Hinged shutter.

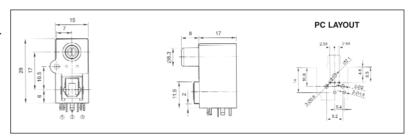
OTJ-5 (FC684205T) ORJ-5 (FC684205R)





OTJ-6/ORJ-6 Dual SPDIF **RCA** and Optical Transmitter and Receiver Jack, Right angle PCB mount with self tapping hole for panel mounting. Hinged shutter. Several different colored inserts available

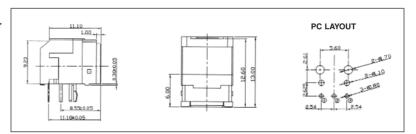
OTJ-6 (FC684206T) ORJ-6 (FC684206R)





OTJ-8/ORJ-8 Optical Transmitter and Receiver Jack. Right angle PCB mount. Hinged shutter.

OTJ-8 (FC684208T) ORJ-8 (FC684208R)



**Electrical Specifications:** 

Supply Voltage: -0.5 to 7.0V Maximum. Input Voltage: -0.5 to +0.5V Maximum.

Operating Temperature: -20 deg. C to +70 deg. C Maximum. Storage Temperature: -30 deg. C to +80 deg. C Maximum.

Soldering Temperature: 260 deg. C Maximum.

**Mechanical Specifications:** Insertion Force: 5.9N Minimum, 39.2N Maximum. Withdrawal Force: 5.9N Minimum, 39.2N Maximum.

**Materials:** 

Body: PBT +30G, ABS 94-V-0 (depends on model)

Shutter: Nylon PA66

Please refer to the individual technical data sheets available for each model for the recommended operating conditions, characteristics, PC layouts and technical information. We also manufacture molded optical lead assemblies for use with our optical jacks. Please contact our sales office for more details.