

# PRODUCT SPECIFICATION

DATE:03/03/2005

|   |                                  |              |      |
|---|----------------------------------|--------------|------|
| <b>cosmo</b><br>ELECTRONICS CORPORATION | Photolink :<br><b>KPLR1320AD</b> | NO.60F01006  | REV. |
|   |                                  | SHEET 1 OF 5 | 1    |

## FIBER OPTIC Receiver Module

### Features

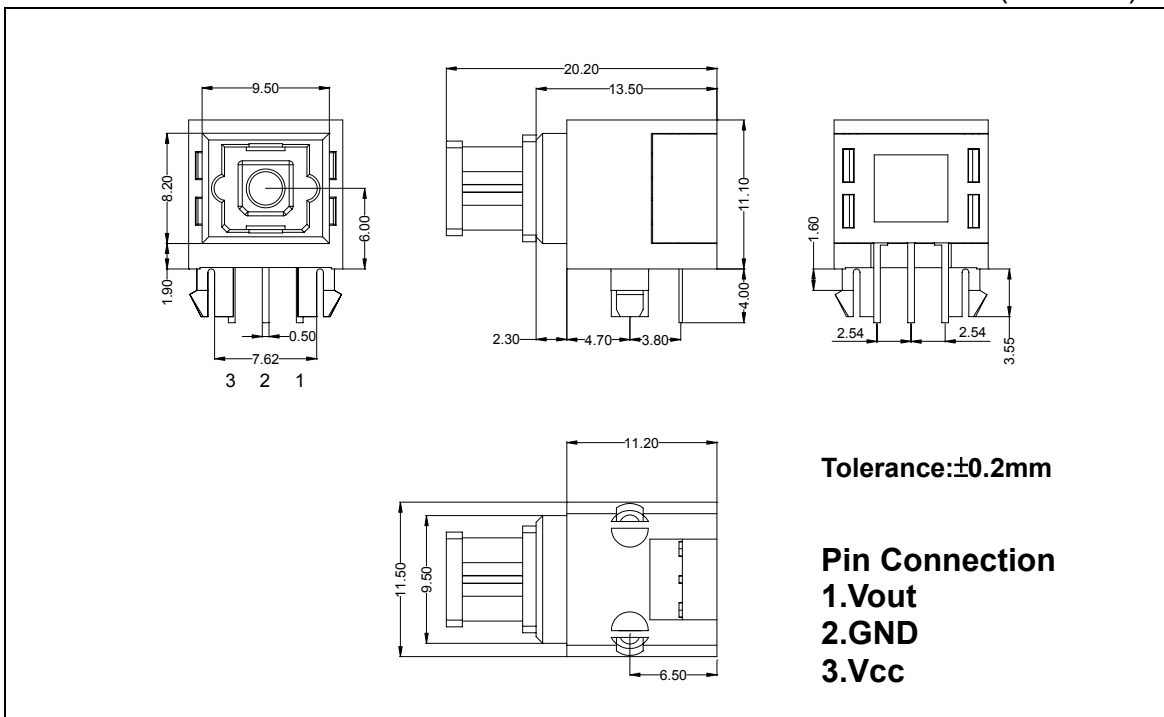
- TTL interface compatible.
- 13.2Mbps data rate(NRZ Signal).
- Directly connectable to demodulation IC.
- Supply voltage 3.3V/ 5V equipment.

### Applications

- Audio equipment .
- DVD,CD,MD player .
- Automobile.
- Sound card.
- Set top box.
- PC,Notebook.

### Outline Dimensions

(Unit:mm)



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## 1. Maximum Ratings (Ta=25°C, Vcc=3.3V/5V)

| Parameter             | Symbol           | Rating                    | Unit |
|-----------------------|------------------|---------------------------|------|
| Storage Temperature   | T <sub>stg</sub> | -40~80                    | °C   |
| Operating Temperature | T <sub>opr</sub> | -20~70                    | °C   |
| Supply Voltage        | V <sub>CC</sub>  | -0.5~7                    | V    |
| Input Voltage         | V <sub>IN</sub>  | -0.5~V <sub>CC</sub> +0.5 | V    |
| Soldering Temperature | T <sub>sol</sub> | 260 <sup>(Note 1)</sup>   | °C   |

Note 1 : Soldering time  $\leq$  10 seconds (At a distance of 1 mm from the package) .

## 2. Recommended Operating Conditions (Ta=25°C, Vcc=3.3V/5V)

| Parameter                 | Symbol          | Min | Typ. | Max   | Unit |
|---------------------------|-----------------|-----|------|-------|------|
| Supply Voltage            | V <sub>CC</sub> | 2.7 | 3.3  | 5.5   | V    |
| Operating transfer rate   | T               | 0.1 | -    | 13.2  | Mbps |
| Input optical power level | PI              | -24 | -    | -14.5 | dBm  |

## 3. Electrical and Optical Characteristics :Receiver (Ta=25°C, Vcc=3.3V/5V)

| Parameter                                     | Symbol           | Condition                      | Min | Typ. | Max   | Unit |
|---|------------------|--------------------------------|-----|------|-------|------|
| Operating transfer rate                       | T                | NRZ Signal <sup>(Note 2)</sup> | 0.1 | -    | 13.2  | Mb/s |
| Operating voltage                             | V <sub>CC</sub>  |                                | 2.7 | 3.3  | 5.5   | V    |
| Optical Input Sensitivity <sup>(Note 3)</sup> | PI               |                                | -24 | -    | -14.5 | dBm  |
| Peak Emission Wavelength                      | $\lambda_p$      |                                | -   | 700  | -     | nm   |
| Dissipation Current                           | I <sub>CC</sub>  | Refer to Fig.(1)               | -   | 8    | 15    | mA   |
| High Level Output Voltage                     | V <sub>OH</sub>  | Refer to Fig.(2)               | 2.4 | -    | -     | V    |
| Low Level Output Voltage                      | V <sub>OL</sub>  | Refer to Fig.(2)               | -   | -    | 0.4   | V    |
| Rise time                                     | t <sub>r</sub>   | Refer to Fig.(2)               | -   | 10   | 15    | ns   |
| Fall time                                     | t <sub>f</sub>   | Refer to Fig.(2)               | -   | 10   | 15    | ns   |
| Low->High Propagation delay time              | t <sub>PLH</sub> | Refer to Fig.(2)               | -   | -    | 180   | ns   |
| High -> Low Propagation delay time            | t <sub>PHL</sub> | Refer to Fig.(2)               | -   | -    | 180   | ns   |
| Pulse Width Distortion                        | $\Delta tw$      | Refer to Fig.(2)               | -20 | -    | 20    | ns   |
| Jitter Time                                   | $\Delta tj$      | Refer to Fig.(3)               | -   | -    | 15    | ns   |

Note 2 : LED is ON when input signal is high, and OFF when it is low.

The duty factor must be maintained between 25 to 75%.

Note 3 : Measure with a standard optical fiber, peak value.

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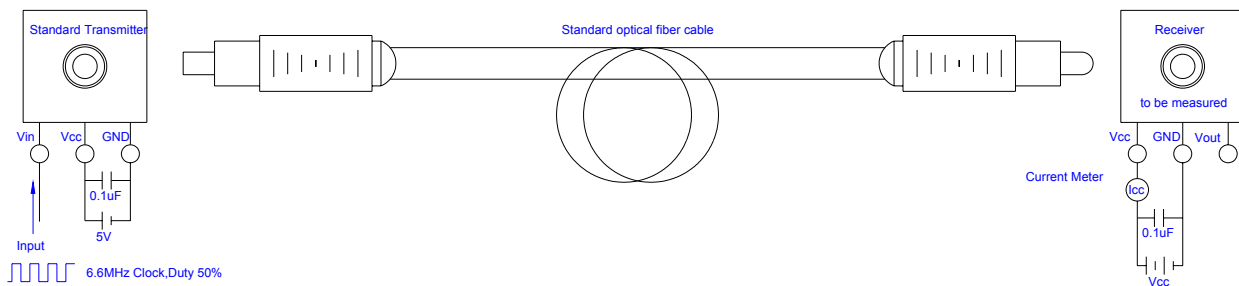
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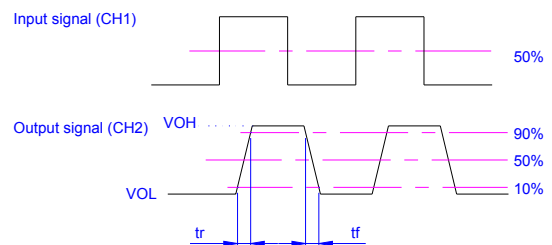
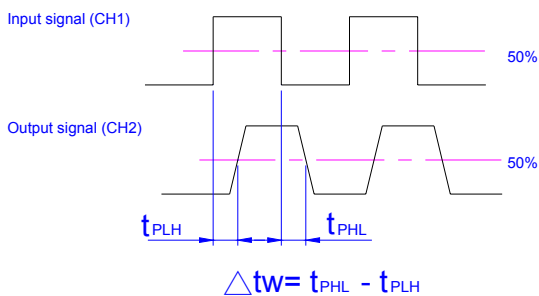
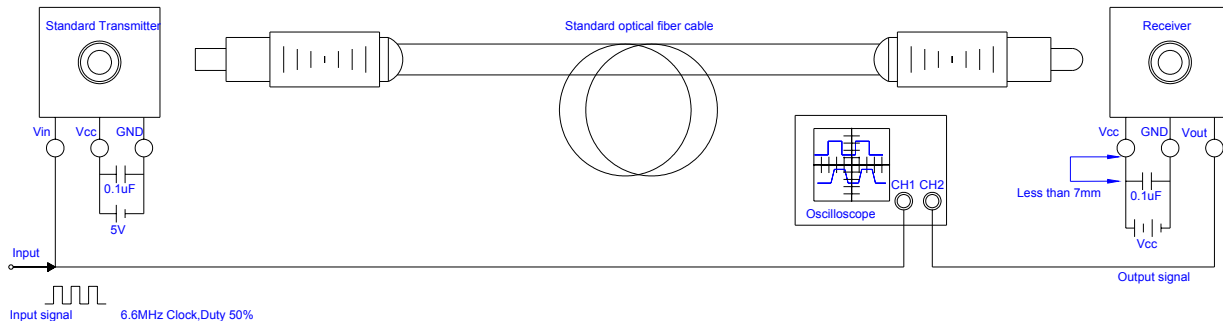
## 4. Measuring method

### (1). Measuring Supply Current

|                                   | Input test Conditions | Measuring method   |
|-----------------------------------|-----------------------|--------------------|
| Supply Voltage                    | Vcc=5.0V              | DC Average current |
| Fiber coupling light output       | Pc=-14.5dBm           |                    |
| Standard transmitter input signal | 13.2Mbps NRZ          |                    |



### (2). Measuring method of Output Voltage and Pulse response

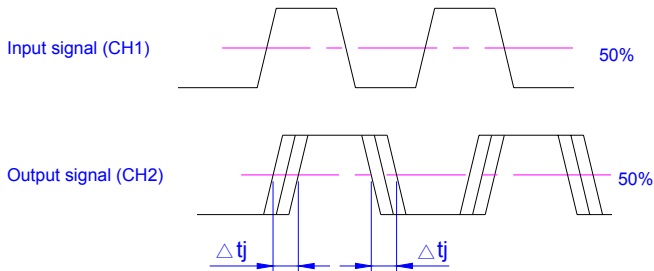
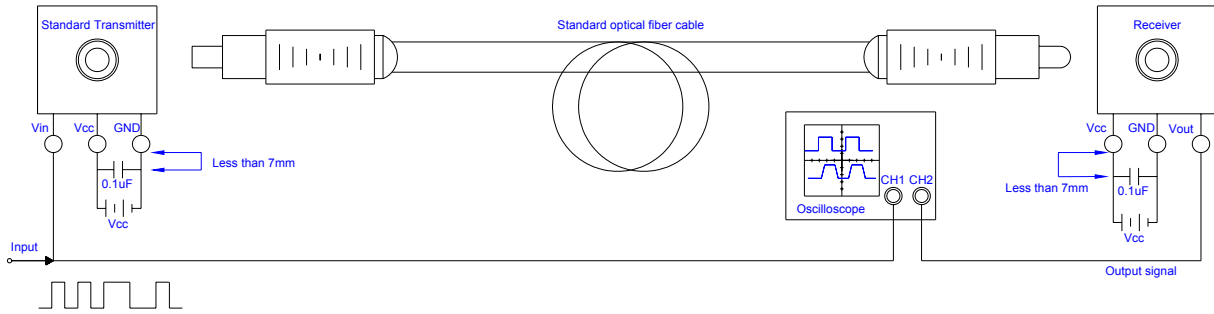


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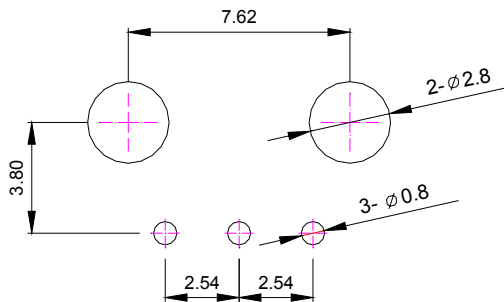
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|   |                                  |                             |           |

## (3).Measuring method of Jitter



## 5.Recommended PCB Layout



Notes:  
 1.Unit:mm  
 2.tolerance:±0.3mm

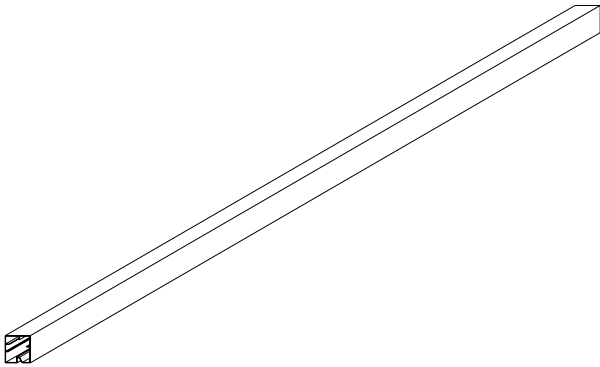
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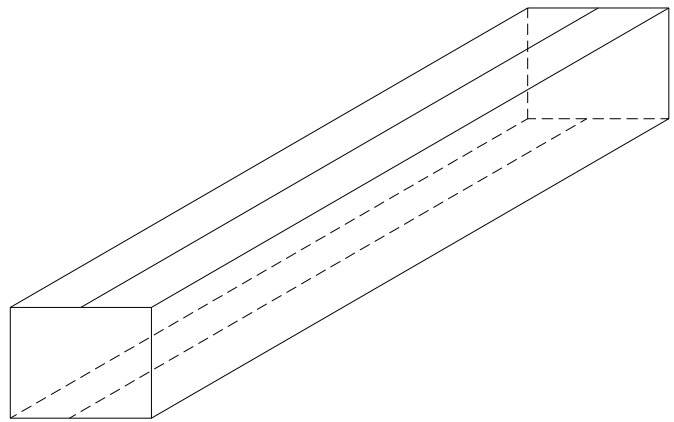
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## 6.Package Information

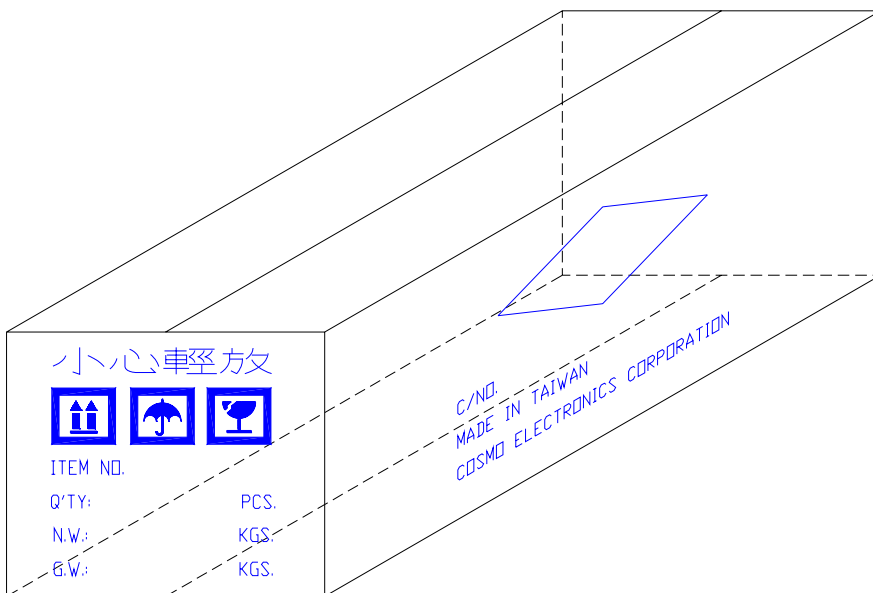
| Item      | Quantity              | Total    | Size(Long*Width*High) |
|-----------|-----------------------|----------|-----------------------|
| Tube      | 50                    | 50 pcs   | 640*24.4*26.4 mm      |
| Inner Box | 20 Tube/Box           | 1000 pcs | 660*156*122 mm        |
| Outer Box | 4 Inner Box/Outer Box | 4000 pcs | 690*342*284 mm        |



50pcs/Tube



1000pcs/Inner Box



4000pcs/Outer Box