



New  Rev

# APPROVAL SHEET

CUSTOMER : \_\_\_\_\_

DEVICE NAME : **Photo Link**

MODEL NO. : **SRX-R179A1**

ISSUED DATE : **DEC. 07. 2012**

|              | ISSUE | REVIEW | REVIEW | APPR'D |
|--------------|-------|--------|--------|--------|
| ISSUED DEPT. |       |        | 邱丽红    |        |

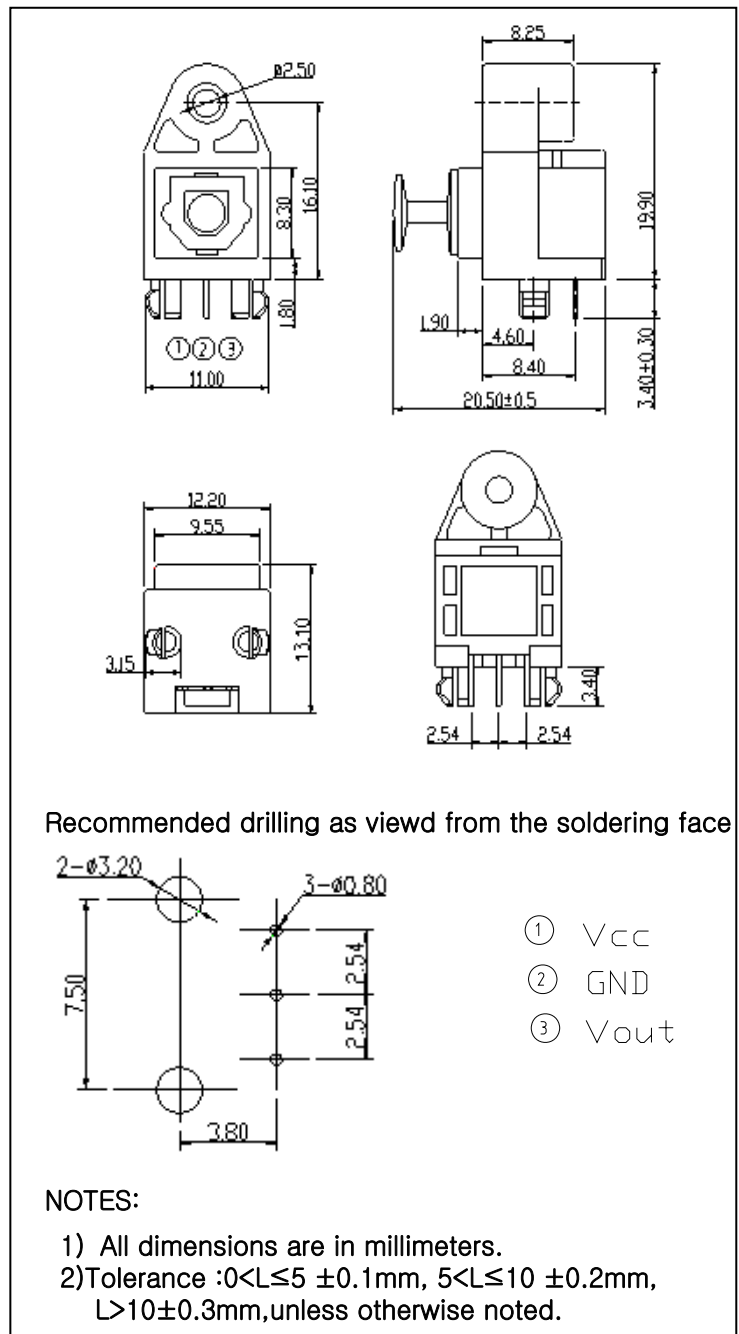


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● **Features:**

- 1.Uni-directional data transmission using plastic fiber
- 2.Signal transmission speed
- 3.Operating voltage:2.4 – 5.5 V
- 4.Low power consumption

● **Outline Dimensions:**



● **Absolute Maximum Ratings(Ta=25°C)**

@ TA=25°C

| Parameter                | Symbol           | Rating        | Unit |
|--------------------------|------------------|---------------|------|
| Supply voltage           | Vcc              | -0.5 to + 5.5 | V    |
| Input voltage            | V <sub>O</sub>   | Vcc+0.3V      | V    |
| Operating temperature    | T <sub>opr</sub> | -20 to +70    | °C   |
| Storage temperature      | T <sub>stg</sub> | -30 to +80    | °C   |
| Soldering temperature *1 | T <sub>sol</sub> | 260*          | °C   |

\*1 1 time For 5s ( $\leq 2$  times) (The temperature of the PCB surface is  $< 90^\circ\text{C}$ )

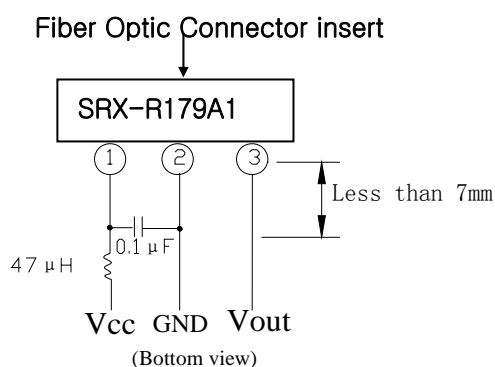
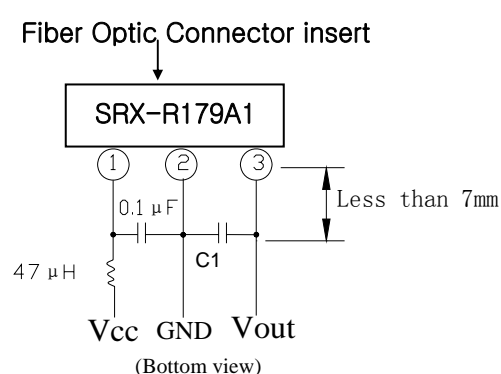
**● Recommended Operating Conditions:**

| Parameter                            | Symbol          | MIN. | TYP. | MAX. | Unit |
|--------------------------------------|-----------------|------|------|------|------|
| Operating supply voltage             | V <sub>CC</sub> | 2.4  | ---  | 5.5  | V    |
| Operating transfer rate (NRZ signal) | T               | 0.1  | ---  | 13.2 | Mbps |

**● Electro-Optical Characteristics:**

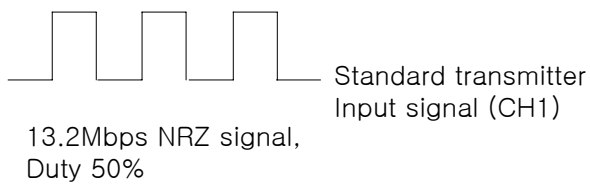
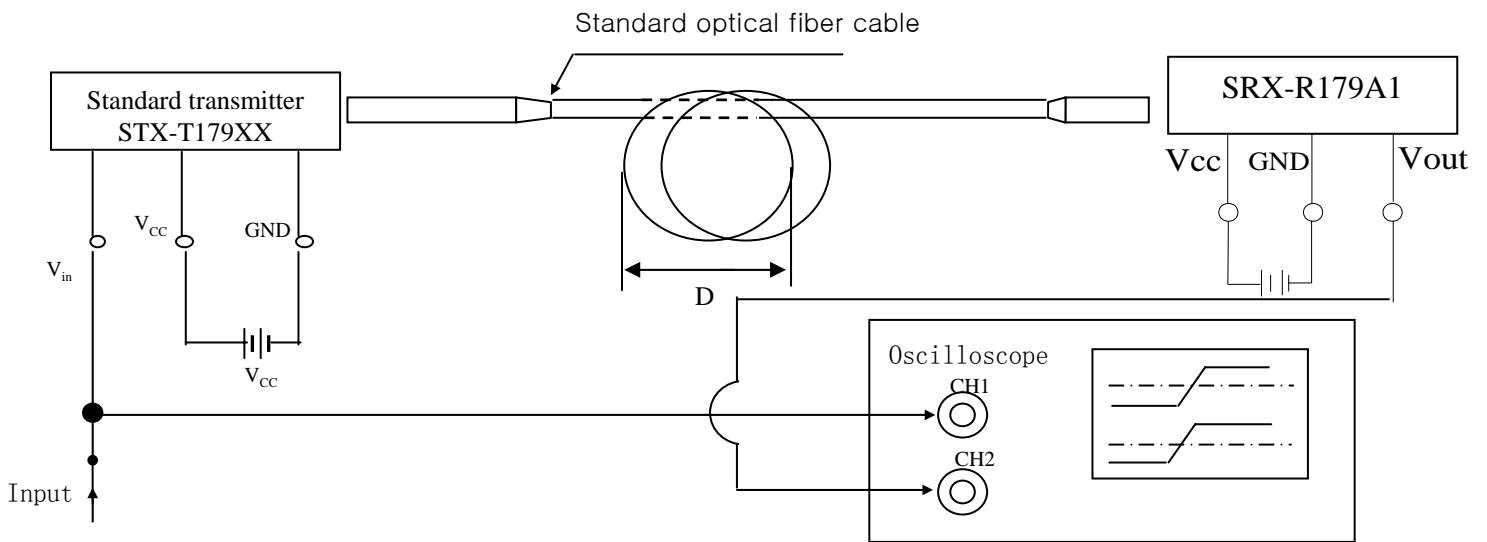
 (T<sub>a</sub>=25°C, V<sub>CC</sub>=3V, CL=5pf, I<sub>p</sub>=660nm)

| NO. | Parameter                          | Symbol           | Conditions      | MIN. | TYP. | MAX.  | Unit |
|-----|------------------------------------|------------------|-----------------|------|------|-------|------|
| 1   | Peak sensitiving wavelength        | λ <sub>p</sub>   |                 | ---  | 660  | ---   | nm   |
| 2   | Receiver input optical power level | P <sub>c</sub>   | Refer to Fig. 3 | -24  | ---  | -13.5 | dBm  |
| 3   | Dissipation current                | I <sub>CC</sub>  | Refer to Fig. 2 | 3    | ---  | 7     | mA   |
| 4   | High level output voltage          | V <sub>oH</sub>  | Refer to Fig. 1 | 2.1  | ---  | ---   | V    |
| 5   | Low level output voltage           | V <sub>oL</sub>  | Refer to Fig. 1 | ---  | 0.2  | 0.4   | V    |
| 6   | Rise time                          | t <sub>r</sub>   | Refer to Fig. 1 | ---  | 8    | 20    | ns   |
| 7   | Fall time                          | t <sub>f</sub>   | Refer to Fig. 1 | ---  | 8    | 20    | ns   |
| 8   | Low → High delay time              | t <sub>pLH</sub> | Refer to Fig. 1 | ---  | ---  | 100   | ns   |
| 9   | High → Low delay time              | t <sub>pHL</sub> | Refer to Fig. 1 | ---  | ---  | 100   | ns   |
| 10  | Pulse width distortion             | Δ <sub>tw</sub>  | Refer to Fig. 1 | -15  | ---  | +15   | ns   |
| 11  | Jitter                             | Δ <sub>ij</sub>  | Refer to Fig. 1 | ---  | ---  | 15    | ns   |

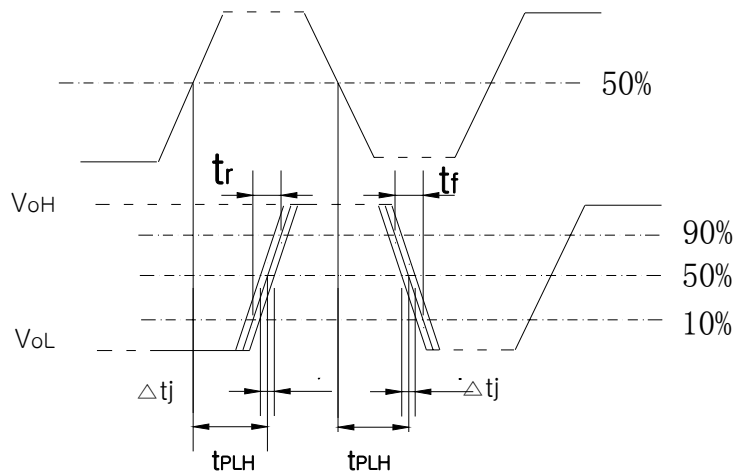
**● Recommended Connection Method**
**1. General application circuit for 3V**

**2. General application circuit for 5V**

**NOTES:**

- For 5V application a minimum of C1=30PF capacitive loading at the Output pin is recommended. If the motherboard PCB board trace loading and the input loading of the next device exceeds 30PF, then extra capacitive loading is not needed. (Example: PCB trace loading +input device loading=10PF, then add 20PF(C1) between the Output to GND)

● Fig.1 Measuring Method of Pulse Response:



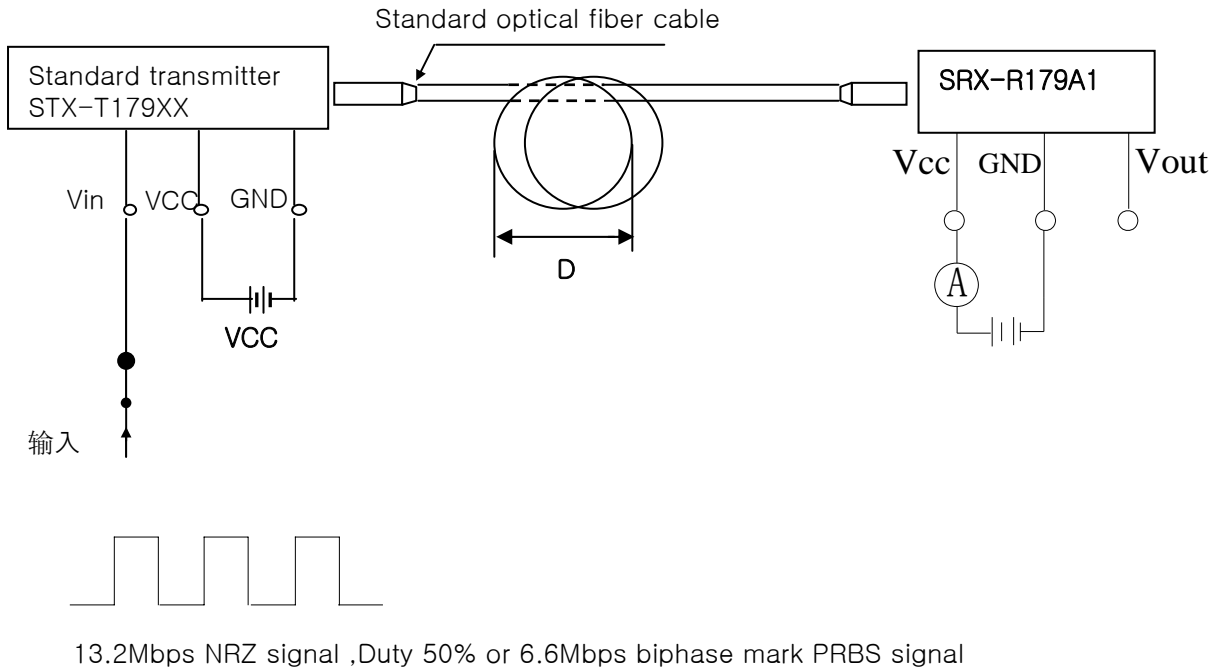
Output signal (CH2)



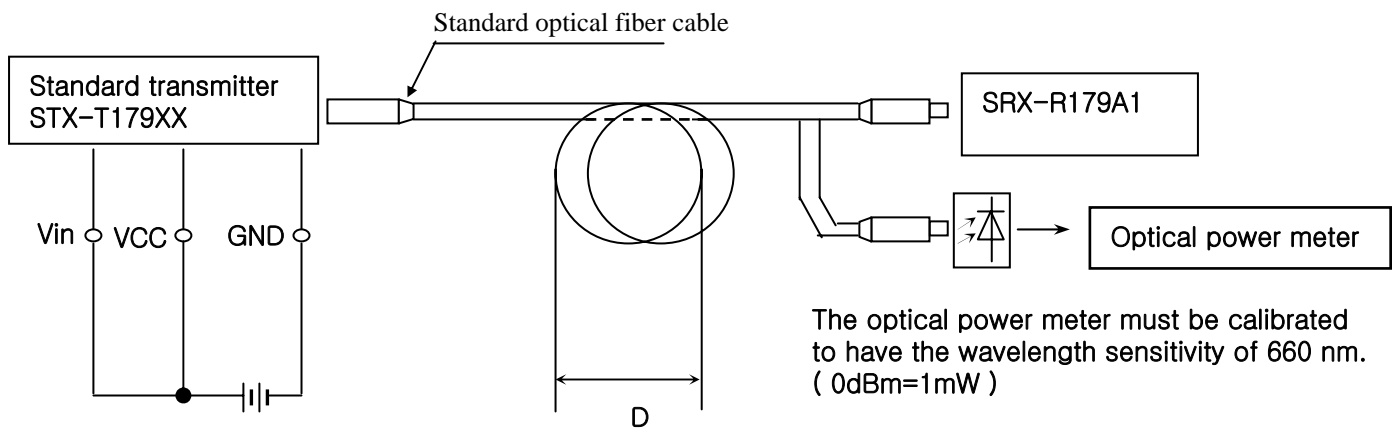
● Test item:

| Test item  | Symbol             |
|--|--------------------|
| Low → High pulse delay time                                      | $t_{PLH}$          |
| High → Low pulse delay time                                      | $t_{PHL}$          |
| Rise time  | $t_r$              |
| Fall time  | $t_f$              |
| High level output voltage  | $V_{oH}$           |
| Low level output voltage   | $V_{oL}$           |
| Jitter   | $\Delta\tau_j$     |
| Pulse width distortion( $\Delta\tau\omega = t_{PHL} - t_{PLH}$ ) | $\Delta\tau\omega$ |

● Fig. 2 Measuring Method of Current Consumption:



● Fig. 3 Measuring Method of Optical Output Coupling with Fiber



Notes :

- (1)Vcc=3.0V
- (2)To bundle up the standard fiber optic cable, make it into a loop with the diameter  $D \geq 10\text{cm}$  .
- (3)Measured on an ammeter.
- (4)The probe for the oscilloscope must be more than 1M and less than 10pF.

**● RELIABILITY:**

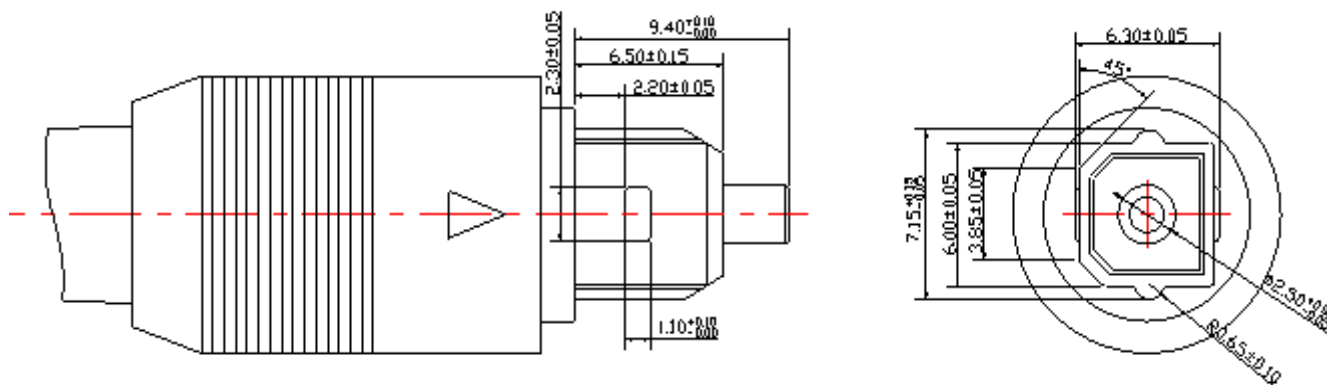
| NO. | TEST ITEMS                       | TEST CONDITIONS   | JUDGEMENT CRITERIA   | SAMPLE NUMBER(n)  |
|-----|----------------------------------|---|--|-------------------|
|     |                                  |   |  | SAMPLE FAILURE(c) |
| 1   | Life Test                        | Vcc=5V , 500H   | Electro-Optical Characteristics NO.2~9 Shall be satisfied  | N=10,c=0          |
| 2   | High Temperature Storage         | Ta=80°C ±5 °C ,<br>RH=85%<br>Time=48Hrs   |  | N=10,c=0          |
| 3   | Low Temperature Storage          | Ta=-30°C ±5 °C ,<br>Time=48Hrs  |  | N=10,c=0          |
| 4   | Temperature Cycling              | Ta=-35 °C ~+85 °C (85%RH)<br>(30min) (30min)<br>20Cycles  |  | N=10,c=0          |
| 5   | Falling off Tset                 | Take the PCB with optical fiber jack to fall-self from 1 meter high ,3cycles                          |  | N=10,c=0          |
| 6   | Soldering Strength Test          | Soldering the optic fiber chip in the PCB, Then converse swing from a object by 1 kg weight , 1minute |  | N=10,c=0          |
| 7   | Low High Temperature Impact Test | Ta=-35 °C ~+85 °C<br>(30min) (30min)<br>8Cycles   |  | N=10,c=0          |
| 8   | Soldering Ability Test           | Ta=260 °C ±5 °C ,5seconds   | 95% or more of the solder area is covered with solder, and Electro-Optical Characteristics NO.2~9 shall be satisfied | N=10,c=0          |
| 9   | Soldering Heat                   | Ta=260 °C ±5 °C ,10seconds  |  | N=10,c=0          |

**● MATERIAL DESCRIPTION**

| No. | Name    | Material |
|-----|---------|----------|
| 1   | HOUSING | ABS      |
| 2   | PLUG    | ABS      |
| 3   | COVER   | ABS      |

**● RECOMMENDED:**

BE SUIT WITH THIS OPTICAL DIGITAL CABLE



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