

POF SOLUTION

Plank Optical Fiber Transmitter Module

Plank Optoelectronics Inc. is a professional developer and manufacturer of fiber optical communication components that deploy high-capacity broadband communications networking with advances in Fiber Optics technologies. Based on our long-term researching and improving on Optoelectronics field, we are capable of providing optical fiber transmitter/receiver modules for a variety of fiber optical applications.

FEATURES

- High speed signal transmission: MAX. 13.2Mbps, (NRZ signal)
- Input TTL compatible
- +3~+5V power source

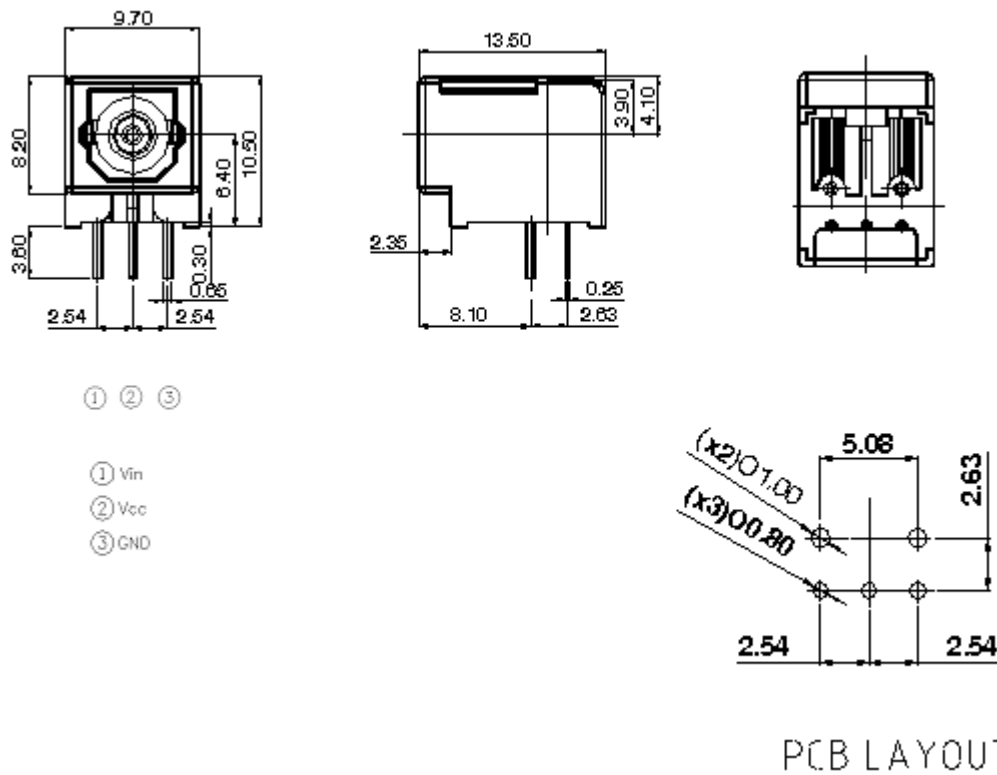
APPLICATIONS

- Audio equipment
- DVD, CD, MD player
- PC, Notebook
- Sound card



PKTX3012

DIMENSIONS (Unit : mm ; Tolerance : ±0.3mm)



ABSOLUTE MAXIMUM RATINGS(Based on room temperature, $T_a=25^{\circ}\text{C}$)

ITEM	SYMBOL	RATING	UNIT
Supply Voltage	Vcc	-0.5 ~ 7.0	V
Input Voltage	Vin	-0.5 ~ Vcc+0.5	V
MAX. power consumption	Pmax	125	mW
Operating Temperature	Topr	-20 to 70	$^{\circ}\text{C}$
Storage Temperature	Tstg	-30 to 80	$^{\circ}\text{C}$
Soldering Temperature	Tsol	260*	$^{\circ}\text{C}$

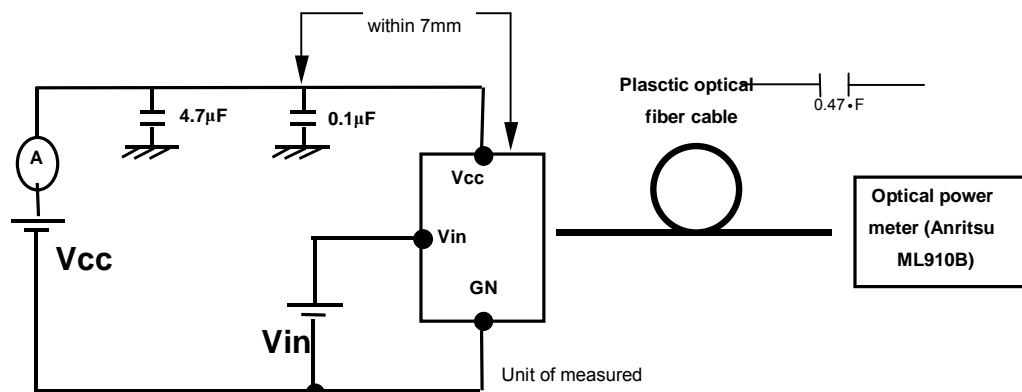
* Soldering time : 5sec/2times.

RECOMMENDED OPERATING CONDITIONS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply voltage	Vcc	--	2.7	5.00	5.5	V

ELECTRO-OPTICAL CHARACTERISTICS (On condition : Vcc=5.0V, Ta=25°C)

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Peak Emission Wavelength	λ_D	Vcc=4.75 ~ 5.25V	630	-	690	nm
Optical power output to fiber	Pc	Ref. to fig.1	-21	-17	-15	dBm
Transmission Speed	T	NRZ	DC	-	13.2	Mbps
Current consumption	Icc	Ref. to method.1	-	-	5	mA
High Level Input Voltage	Vih	Ref. to method.1	2.0	-	-	V
Low Level Input Voltage	Vil	Ref. to method.1	-	-	0.8	V
Low•High propagation delay time	tPLH	Ref. to method 2.3	-	-	100	ns
High•Low propagation delay time	tPHL	Ref. to method 2.3	-	-	100	ns
Pulse Width Distortion	Δw	Ref. to method 2.3	-10	-	10	ns
Jitter	Δt_i	Ref. to method 2.4	-	-	10	ns

MEASURING METHOD 1.

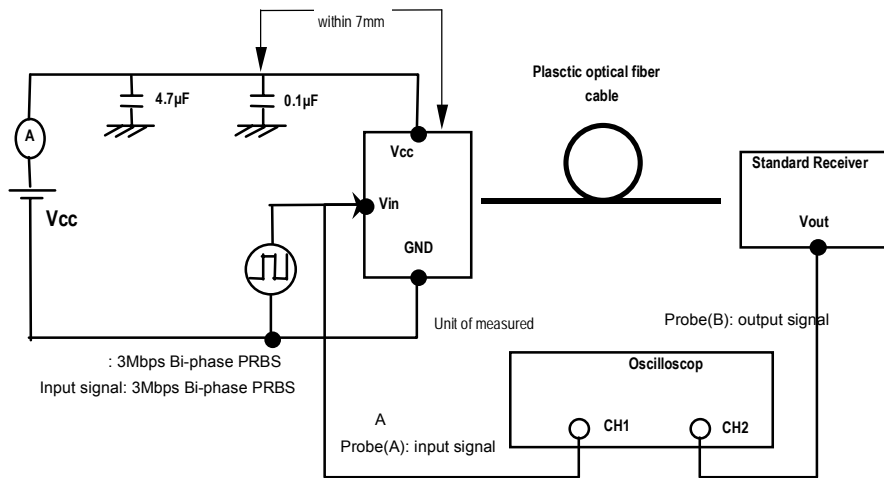
Note 1. Standard fiber optical cable(POF, 1m)

Note 2. The ANRITSU ML910B(receiver MA9802) or its equivalent optical power meter shall be used.

Note 3. The optical power meter must be calibrated to have the wavelength sensitivity of 660nm. (0dBm=1mW)

Note 4. To bundle up the standard fiber cable, make it into a loop with the diameter of 10cm or more.

MEASURING METHOD 2.



Note 1. Status of operating: $V_{cc}=5.00V\pm 0.05V$

Note 2. Input signal: 3Mbps Bi-phase PRBS $V_{ih}>=2.0V$, $V_{il}<=0.8V$, t_r , $t_f <= 6ns$

Note 3. Standard fiber optical cable(POF, 1m)

Note 4. To bundle up the standard fiber cable, make it into a loop with the diameter of 10cm or more.

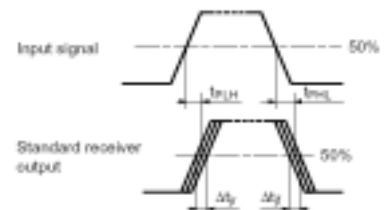
Note 5. Oscilloscope: Tektronix TDS5052 or its equivalent oscilloscope shall be used as standard oscilloscope.

Note 6. When measure delay time, use the probe(A) and probe(B) for the oscilloscope the same type and length.

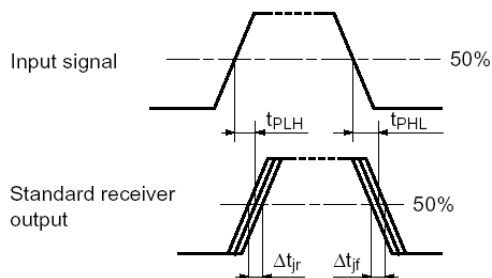
Note 7. At measure jitter, set the oscilloscope to the storage mode and write time to 4 seconds.

MEASURING METHOD 3.

Item	Symbol
Delay time	t_{PHL}
Delay time	t_{PLH}
Pulse width distortion	Δtw $\Delta tw = t_{PHL} - t_{PLH}$



MEASURING METHOD 4.



Item	Symbol	Measuring method
Rise jitter	Δt_{ir}	Set the trigger on the rise of input signal to measure the jitter of the rise of output.
Fall jitter	Δt_{if}	Set the trigger on the fall of input signal to measure the jitter of the fall of output.

RELIABILITY TEST

	ITEM	TEST CONDITION	FAILURE/ SAMPLE
1	High temp. storage	Ta=80°C, 500h	0/22
2	Low Temp. storage	Ta=-30°C, 500h	0/22
3	High temp. operation	Ta=60°C, Vcc=5.0V, 500h	0/22
4	High temp. & Hum. storage	Ta=40°C, 90%RH, 500h	0/22
5	Temp. cycling	Ta=-30°C (30min) ~ (1hr)~ 80°C (30min), 20 cycles	0/22
6	Shock	Acceleration 100G(980m/s ²), pulse width 6ms, X,Y,Z/3 times each direction.	0/11
7	Vibration	10~55Hz sweep 1 min, amplitude: 1.5mm, X,Y,Z/2hours	0/11
8	Terminal strength (Tension)	Weight: 5N, 30s/each terminal.	0/11
9	Terminal strength (Bending)	Weight: 2.5N(In the axial direction), 0°→90°→0°, 2 times/each terminal.	0/11
10	Soldering Heat	Solder bath method, Ta=260°C±10°C, 5s, 2 times. Thickness of print circuit board: 1.6mm. Solder iron method. Ta=350°C, 3s, 1 time. Soldering at the place more than 7mm away from the center a lens.	0/11
11	Solder ability	Soldering at the place more than 3mm away from the foot of the terminal. Used as rosin flux.	0/11

Above testing results are based on ambient temperature : 5°C ~35°C, relative humidity : 45%~85%. The results of item 1 to 5 and 10 was collected at 2 hours normal temperature and humidity after the testing.)

JUDGE CRITERIA

Upper specification limit × 1.2 or less	Upper specification limit × 0.8 or less	Upper specification limit × 1.2 or less
Lower specification limit × 0.8 or more	Lower specification limit × 1.2 or more	Lower specification limit × 1.2 or more
(1) Current consumption	(1)Fiber Coupling Light Output	Pulse Width Distortion
(2) Low • High propagation delay time	(2) High Level Input Voltage	
(3) High • Low propagation delay time	(3)Low Level Input Voltage	
(4) Jitter		

Test No. 8,9 Without cracks to the terminal.

Test No. 11 A new uniform coating of solder shall cover a minimum of 3/4 of the surface being immersed.

In the item 1 to 7 and 10, electro-optical characteristics must meet following table.

Upper limit less than x1.2	Upper limit less than x0.8	Upper limit less than x1.2
Lower limit greater than x0.8	Lower limit greater than x1.2	Lower limit greater than x1.2
(1) Current consumption	(1) High Level Output Voltage	Pulse Width Distortion
(2) Propagation delay time	(2) Low Level Output Voltage	
(3) Jitter		

Item 8, 9 : Without cracks to the terminal.

Item 11 : A new uniform coating of solder shall cover a minimum of 3/4 of the surface being immersed.