

TX3003-H06

6Mbps POF Transmitter Optical Module

■ Feature

- * TTL interface compatible
- * High transfer rate:6Mbps (NRZ Signal)
- * Build-in constant current LED driver
- * Built-in pull-down resistor
- * Low power consumption

■ Applications

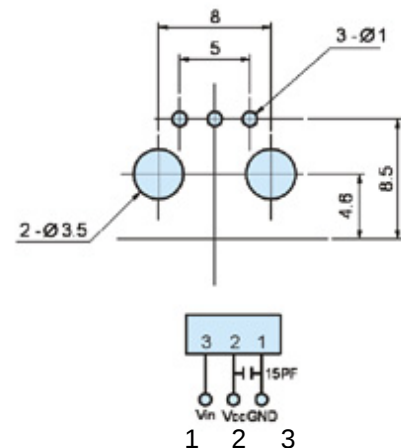
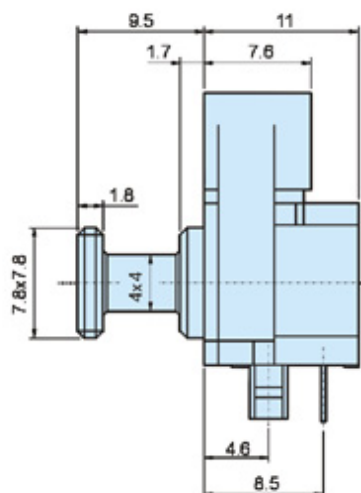
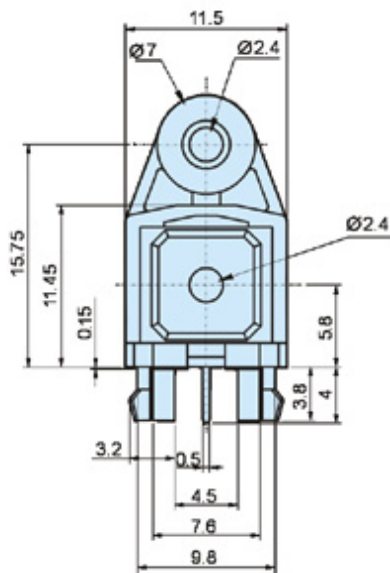
- * DVD, CD, MD player
- * Sound card
- * Audio Equipment
- * PC, notebook

■ Package Dimension

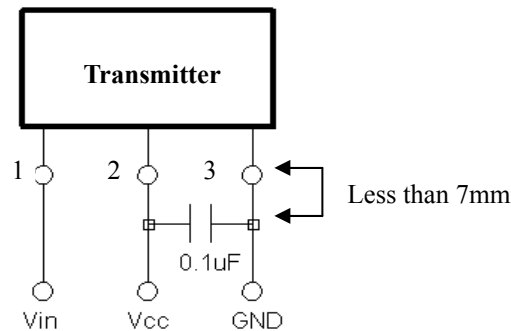
■ Pin Assign

Unit: mm

Pin	Name
1	VIN
2	VCC
3	GND



■ Application Circuit



Note: High-frequency ceramic capacitor is recommended in application circuit

■ Truth Table

V_{cc}	V_{in}	LED
2.7V~5.5V	HIGH	ON
2.7V~5.5V	LOW	OFF
2.7V~5.5V	FLOATING	OFF
FLOATING	0~VCC	OFF

■ Absolute Maximum Ratings ($T_a=25^\circ C$, $V_{cc}=5V$)

Characteristics	Symbol	Rating	Unit
Storage Temperature	T_{stg}	-40 to 70	$^\circ C$
Operating Temperature	T_{opr}	-20 to 70	$^\circ C$
Supply Voltage	V_{cc}	-0.5 to 7	V
Input Voltage	V_{in}	-0.5 to $V_{cc}+0.5$	V
Soldering Temperature	T_{sol}	260 (Note 1)	$^\circ C$

Note 1: Soldering time 10 seconds (At distance of 1 mm from the package)

■ Recommended Operating Conditions ($T_a=25^\circ C$, $V_{cc}=5V$)

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V_{cc}	2.7	5	5.5	V
High-Level input Voltage	V_{IH}	2.0	—	V_{cc}	V
Low-Level input Voltage	V_{IL}	0	—	0.8	V

■ Electro-optical Characteristics: Transmitter (Ta=25°C, Vcc=5V)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating voltage	V _{CC}	-	2.7	5	5.5	V
Peak emission wavelength	λ_p	-	630	660	690	nm
Optical power output coupling with fiber	P _c	Refer to Fig.1	-21		-15	dBm
Dissipation current	I _{CC}	Refer to Fig.2		5	10	mA
High level input voltage	V _{IH}	Refer to Fig.2	2.0			V
Low level input voltage	V _{IL}	Refer to Fig.2			0.8	V
Low , High propagation delay time	t _{PLH}	Refer to Fig.3			100	ns
High , Low propagation delay time	t _{PHL}	Refer to Fig.3			100	ns
Pulse width distortion	Δt_w	Refer to Fig.3	-25		+25	ns
Jitter	Δt_j	Refer to Fig.4			25	ns
Operating transfer rate	T	NRZ Signal	DC		6	Mbps

■ Reliability Test Items

No.	Item	Test Condition	Test Hour/Cycle	Failure/Sample
1	Soldering heat	260 ±5	5 sec./2 times	0/22
2	High temp. & hum. storage	Ta=40 , 90%RH	500	0/22
3	High temp. storage	Ta =80	500	0/22
4	Low temp. storage	Ta =-30	500	0/22
5	Temp. cycling	-30 ~ 80 (30min)(5min)(30min)	20	0/22
6	High temp. operation life time	Ta =90 , V _{CC} =5V, ON	500	0/22
7	Mechanical shock	Acceleration: 1000m/s ² Pulse width: 6ms	3 times/X,Y, Z direction	0/22
8	Vibration	Frequency range: 10~55 Hz/sweep 1 min Overall amplitude: 1.5mm	2 hour/X, Y, Z direction	0/22
9	Repeated operation	500 times	Coupling force < 2kg 0.4kg < Detaching Force < 2kg	0/22
10	Terminal strength (tension)	Weight: 500g 30 sec./each terminal		0/22
11	Terminal strength (bending)	Weight: 500g 2 times/ each terminal		0/22

■ Judgment Criteria

I_{CC} (dissipation current) current difference < 20%

P_f (fiber output power) brightness attenuate difference < 20%

t_{PLH} (propagation L to H delay time): delay time difference < 20%

t_{PHL} (propagation H to L delay time): delay time difference < 20%

t_r (rising time): Time difference < 20%

t_f (falling time): Time difference < 20%

Fig.1 Measuring Method of Optical Output Coupling With Fiber

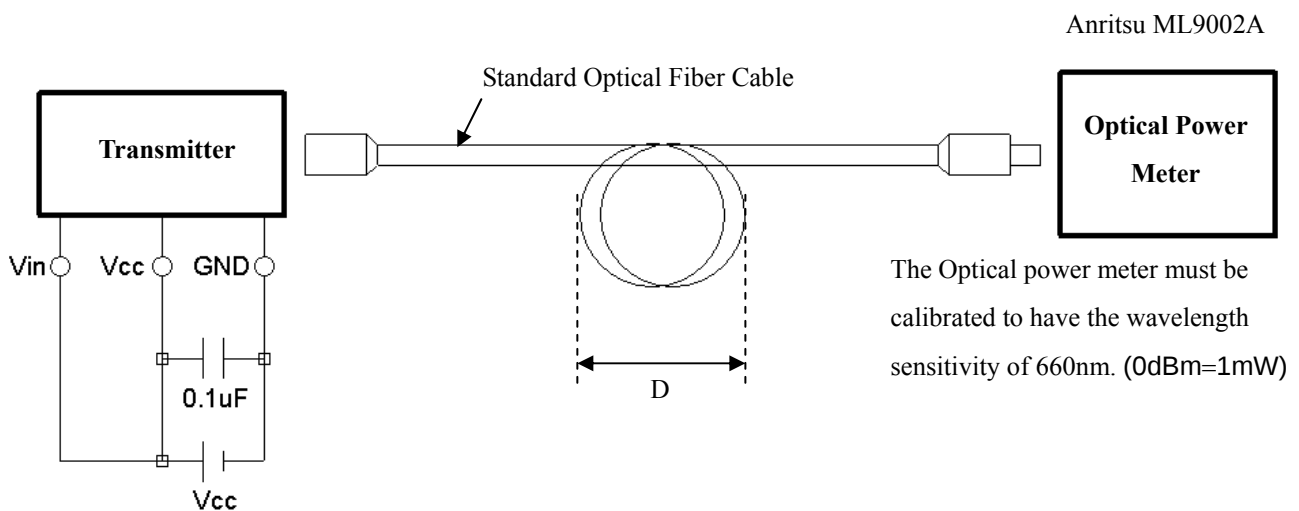
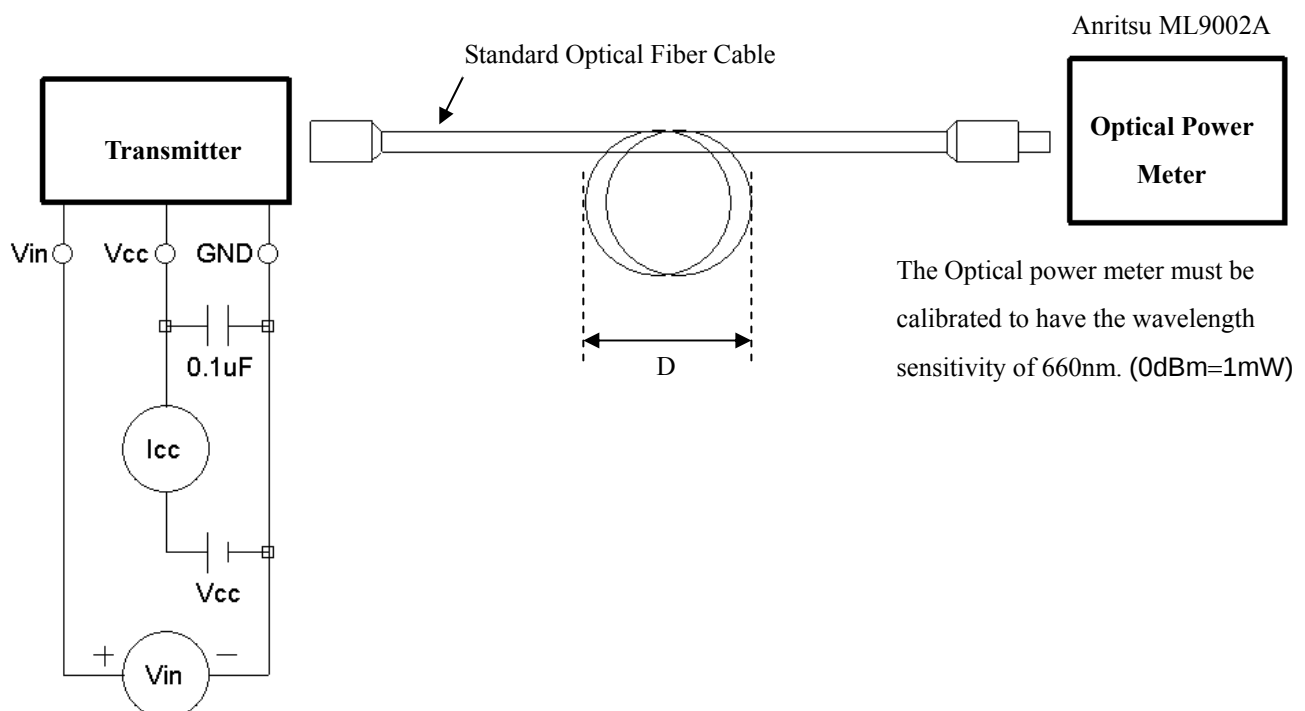


Fig.2 Input Voltage/Power Dissipation Measuring method



Input condition and measuring method

Input condition	Measuring method
$V_{in} = 2.0V$ or more	$-21 \leq P_c \leq -15dBm$ (or $8\mu w \leq P_c \leq 31.6\mu w$)
$V_{in} = 0.8V$ or less	$P_c \leq -36dBm$ (or $P_c \leq 2.5\mu w$)

Fig.3 Pulse Response Measuring Method

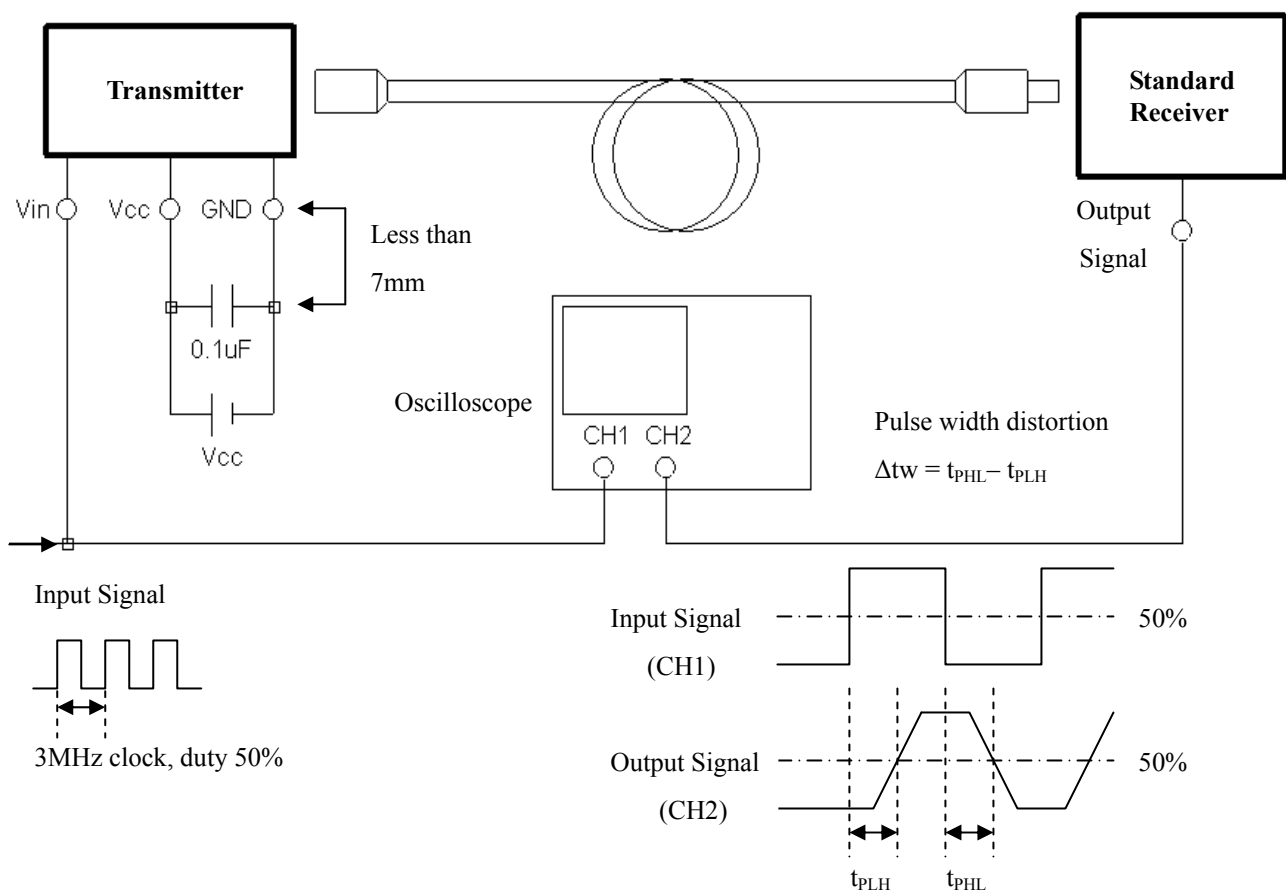


Fig.4 Measuring Method of Jitter

