



BRIGHT LED ELECTRONICS CORP.

FIBER OPTIC TRANSMITTER SPECIFICATION

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● COMMODITY : SIGNAL TRANSMISSION SPEED : MAX 12 Mbps

● DEVICE NUMBER : BFTX-1000/H1

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佰鴻工業股份有限公司

BRIGHT LED ELECTRONICS CORP.

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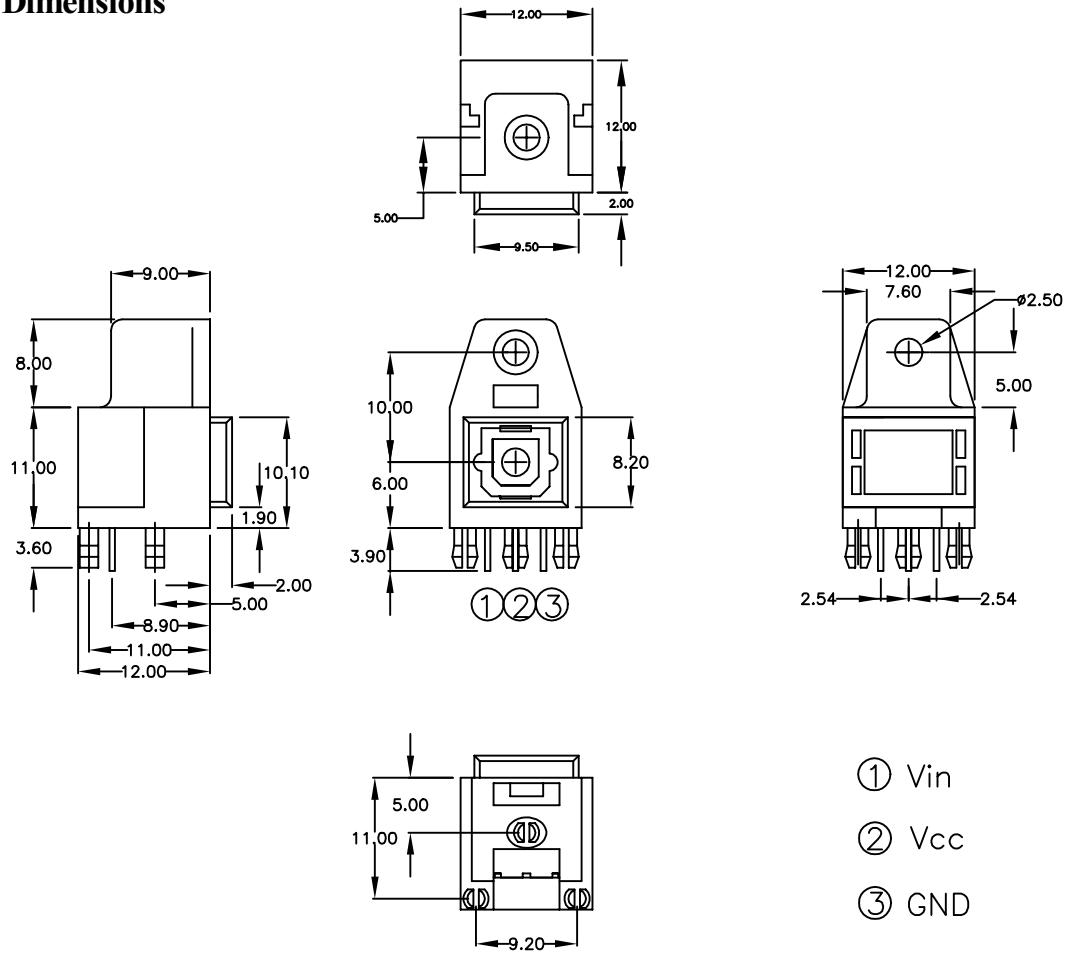
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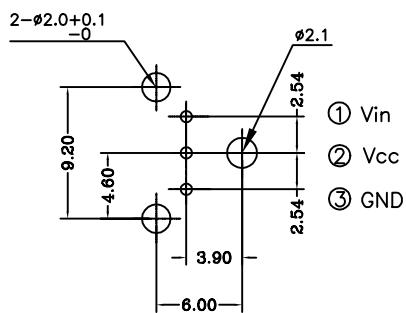
● Features:

1. Uni-directional data transmission using plastic fiber.
 2. Signal transmission speed: MAX. 12 Mbps (NRZ signal).
 3. Operating voltage: 4.75 to 5.25 V.
 4. TTL and high speed C-MOS LOGIC compatible.

● Outline Dimensions



● Recommended drilling as viewed from the soldering face



NOTES: Tolerance is ± 0.3 mm unless otherwise noted.

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● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	100	mw
Supply voltage	Vcc	-0.5 to + 7	V
Input voltage	Vin	-0.5 to Vcc + 0.5	
Operating temperature	Topr	-20 to + 70	°C
Storage temperature	Tstg	-30 to + 80	
Soldering temperature	Tsol	260 For 5sec	

● Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Peak wavelength	λ_p		---	660	---	nm
Operating supply voltage	Vcc		4.75	5.0	5.25	V
Data rate	T	NRZ code	---	---	12.0	Mbps
Optical power output	Pc	Refer to Fig. 1	-21	-17	-15	dBm
Dissipation current	Icc	Refer to Fig. 2	---	10	13	mA
High level input voltage	V_{iH}	Refer to Fig. 2	2.1	---	Vcc	V
Low level input voltage	V_{iL}	Refer to Fig. 2	0	---	0.8	
Low→High delay time	t_{PLH}	Refer to Fig. 3	---	---	150	ns
High→Low delay time	t_{PHL}	Refer to Fig. 3	---	---	150	
Pulse width distortion	Δ_{tw}	Refer to Fig. 3	-15	---	+15	
Jitter	Δ_{tjr}	Refer to Fig. 3	---	1	15	

● Mechanical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Insertion Force		* 1	---	---	40	N
Withdrawal Force		* 1	6	---	40	
Torque for Self-Tap		Using self-tapping screw (M3 x 8)	60	---	100	N-cm

* 1 : Using standard optical fiber cable (970/1000 μ m)

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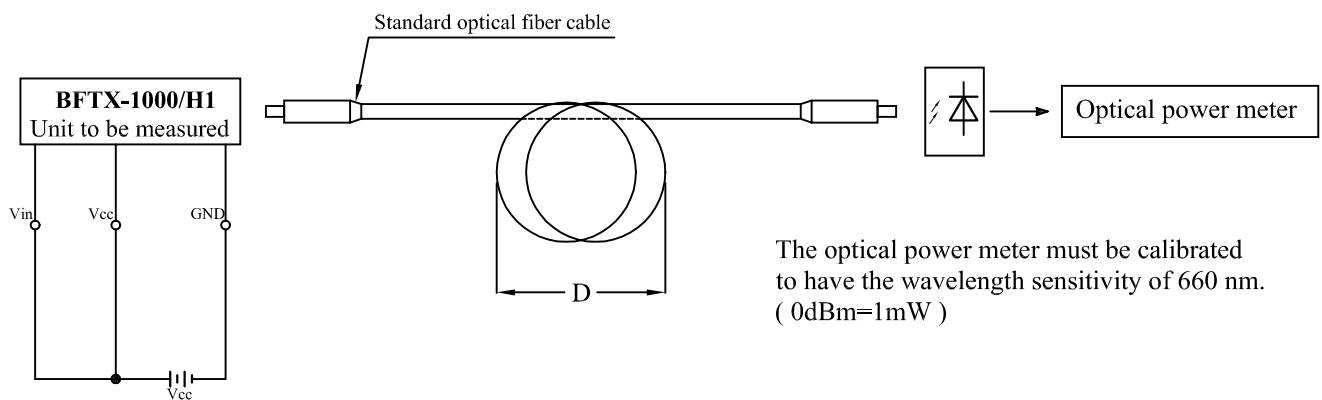
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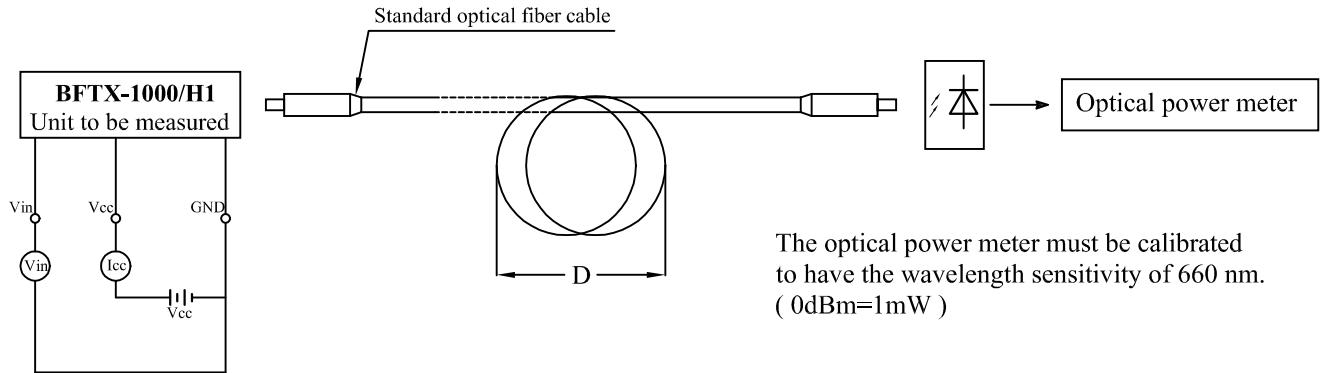
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● Fig.1 Measuring Method of Optical Output Coupling with Fiber.



Notes: (1) $V_{cc}=5.0V$ (State of operating)
(2) To bundle up the standard fiber optic cable, make it into a loop with the diameter $D=10cm$ or more.

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



Input conditions and judgment method Supply Current.

Conditions	Judgment method
$V_{in}=2.1V$ or more	$-21 \text{ dBm} \leq P_c \leq -15 \text{ dBm}$, $I_{cc}=13\text{mA}$ or less
$V_{in}=0.8 \text{ V}$ or less	$P_c \leq -36 \text{ dBm}$, $I_{cc}=13\text{mA}$ or less

Notes: $V_{cc}=5.0V$ (State of operating).

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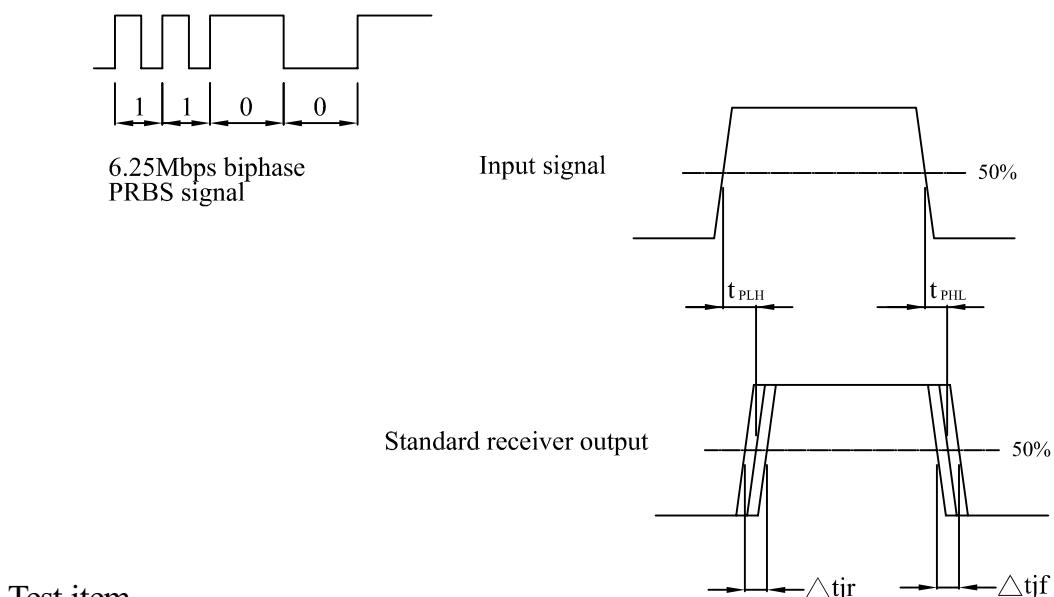
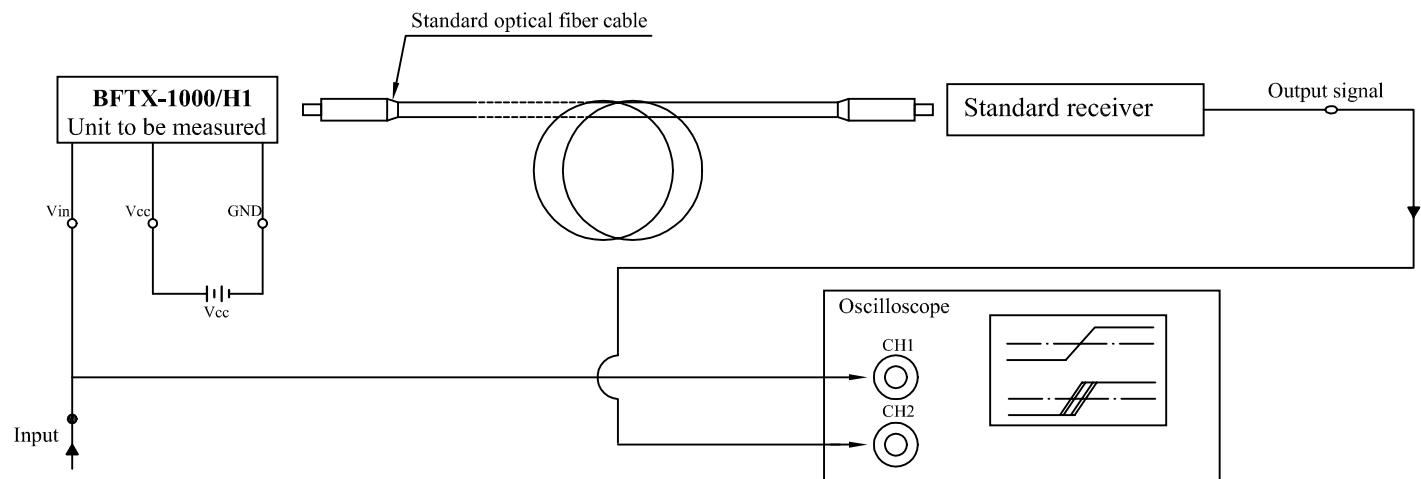
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● Fig.3 Measuring Method of Pulse Response and Jitter.



Test item

Test item	Symbol	Test item
Low→High pulse delay time	t_{PLH}	Refer to the above prescriptions.
High→Low pulse delay time	t_{PHL}	Refer to the above prescriptions.
Pulse width distortion	Δtw	$\Delta tw = t_{PHL} - t_{PLH}$
Low→High Jitter	Δtjr	Set the trigger on the rise of input signal to measure the jitter of the rise of output.
High→Low Jitter	Δtjf	Set the trigger on the fall of input signal to measure the jitter of the fall 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) $V_{cc}=5.0V$ (State of operating)
- (3) To probe for the oscilloscope must be more than $1M\Omega$ and less than $10pF$.

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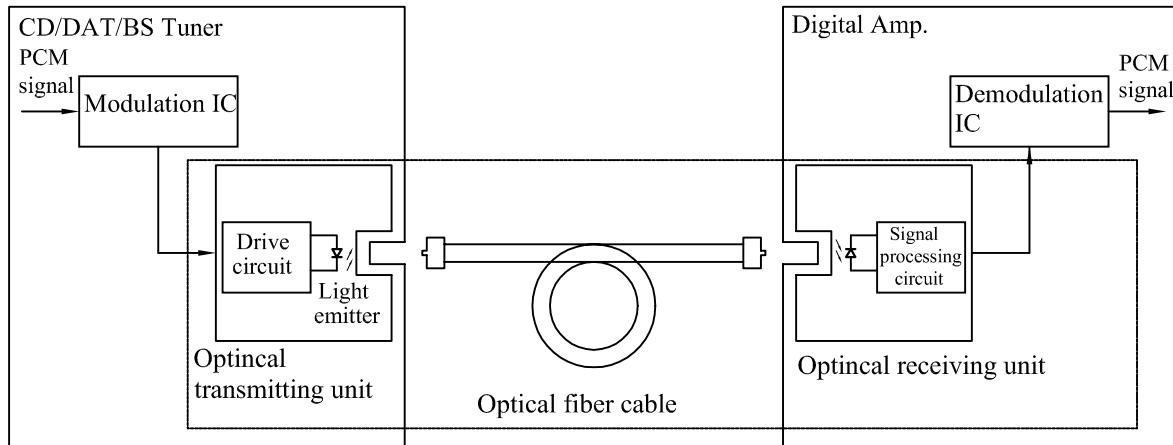
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● System Configuration Example:



● Application Circuit:

