

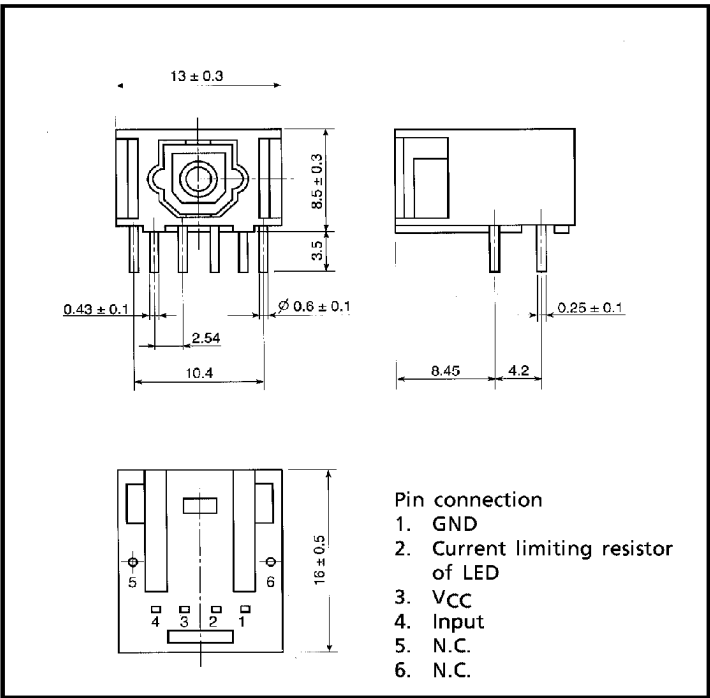
FIBER OPTIC TRANSMITTING MODULE

TOTX180

FIBER OPTIC TRANSMITTING MODULE FOR
SIMPLEX DIGITAL SIGNAL TRANSMISSION

Unit in mm

- Data rate : DC to 6Mb/s (NRZ code)
- Transmission distance : Up to 1000m
- Ceramic Package Type
- TTL interface
- LED is driven by Differential cuicuit



1. Maximum Ratings (Ta = 25°C)

ITEM	SYMBOL	RATING	UNIT
Storage Temperature	T _{stg}	-40 to 85	°C
Operating Temperature	T _{opr}	-40 to 85	°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 ⁽¹⁾	°C

Note ⁽¹⁾ Soldering time ≤ 3 seconds (More than 1mm apart from package).

Handling precaution : The LEDs used in this product contain GaAs (Gallium Arsenide). Care must be taken to protect the safety of people and the environment when scrapping or terminal processing.

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
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2. Recommended Operating Conditions

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{CC}	4.75	5.0	5.25	V
High Level Input Voltage	V_{IH}	2.0	—	V_{CC}	V
Low Level Input Voltage	V_{IL}	0	—	0.8	V

3. Electrical and Optical Characteristics (Ta = 25°C, V_{CC} = 5V)

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Data Rate		NRZ Code ⁽²⁾	DC	—	6	Mb/s
Transmission Distance		Using PCF ⁽³⁾ , TORX180	0.2	—	1000	m
		Using PCF ⁽⁴⁾ , TORX180	0.2	—	800	m
		Using PCF ⁽⁵⁾ , TORX180	0.2	—	500	m
Pulse Width Distortion ⁽⁶⁾	Δtw	Using TORX180 Pulse width 165ns Pulse cycle 330ns, $C_L=10pF$	—55	—	55	ns
Fiber Output Power	P_f	PCF 2m, $R=0\Omega$ ⁽⁷⁾	—20	—	—14	dBm
Peak Emission Wavelength	λ_p		—	800	—	nm
Current Consumption	I_{CC}	$R=0\Omega$	—	67	85	mA
High Level Input Voltage	V_{IH}		2.0	—	—	V
Low Level Input Voltage	V_{IL}		—	—	0.8	V
High Level Input Current	I_{IH}	$V_I=2.7V$	—	—	20	μA
Low Level Input Current	I_{IL}	$V_I=0.4V$	—	—	—0.4	mA

⁽²⁾ LED is on when input signal is high level, it is off when low level.

For data rate > 3Mb/s, the duty factor must be kept 25 to 75%.

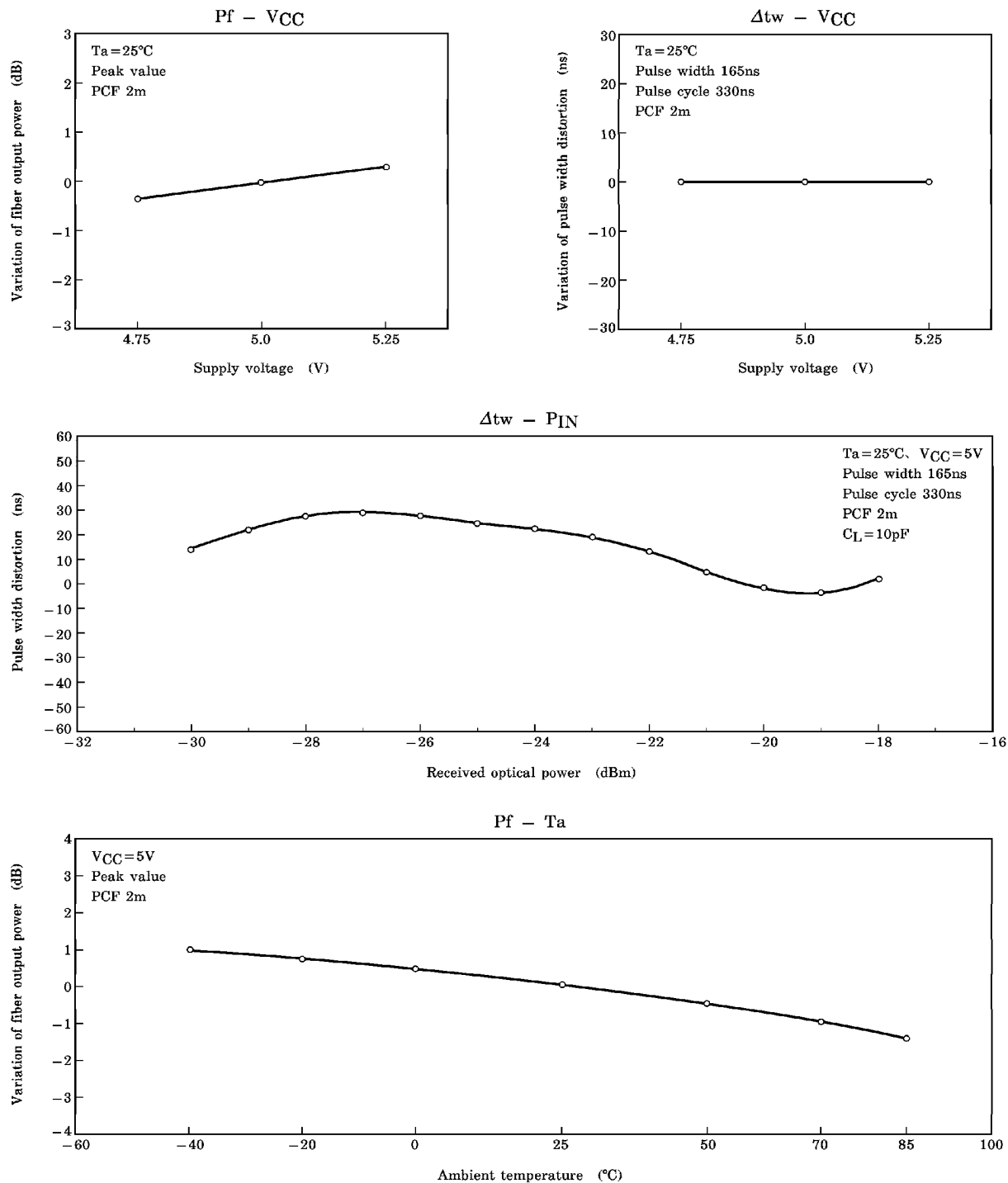
⁽³⁾ TOCP100Q-□□B, TOCP150Q-□□B, TOCP100X-□□B, TOCP150X-□□B

⁽⁴⁾ TOCP101Q-□□B, TOCP151Q-□□B, TOCP101X-□□B, TOCP151X-□□B

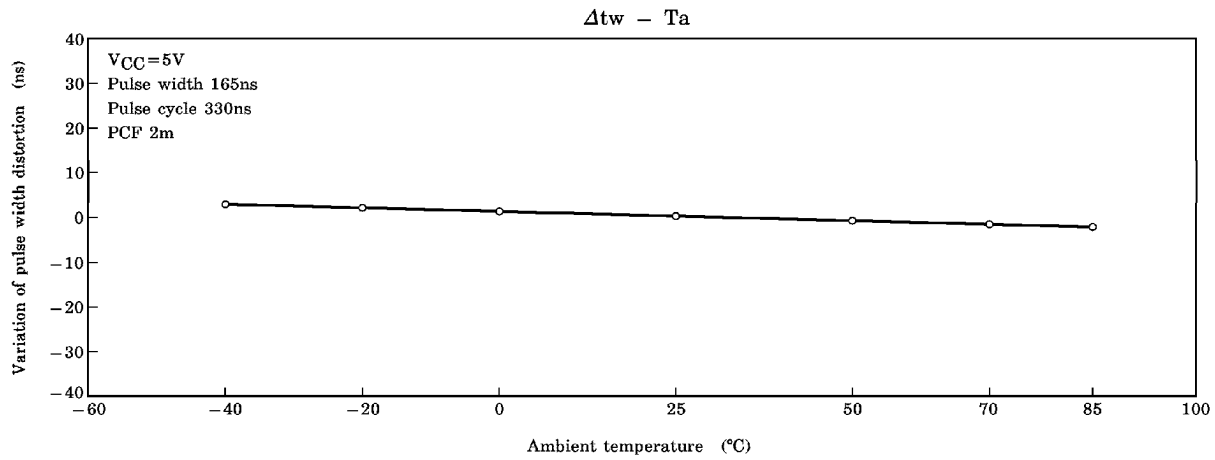
⁽⁵⁾ TOCP156Q-□□B, TOCP156X-□□B

⁽⁶⁾ Between input of TOTX180 and output of TORX180.

⁽⁷⁾ Measure with a standard optical fiber with fiber optic connectors. Valued by peak.

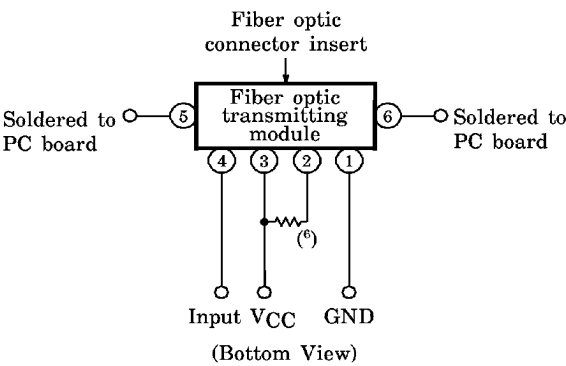
4. Example of Typical Characteristics ⁽⁸⁾

Note. ⁽⁸⁾ There give characteristic examples, and its values are not guaranteed.



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5. Connection Method



Note ⁽⁶⁾ Select a resistor value as follows :

FIBER OPTIC CONNECTOR TYPE NAME	TRANSMISSION DISTANCE (m)	RESISTOR (Ω)
TOCP100Q-□□B / 150Q-□□B TOCP100X-□□B / 150X-□□B	0.2 to 350	5.1k
	350 to 700	2.2k
	700 to 1000	510
TOCP101Q-□□B / 151Q-□□B TOCP101X-□□B / 151X-□□B	0.2 to 200	5.1k
	200 to 500	2.4k
	500 to 800	1.0k
TOCP156Q-□□B TOCP156X-□□B	0.2 to 120	7.5k
	120 to 300	3.6k
	300 to 500	1.5k

6. Applicable Optical Fiber with Fiber Optic Connectors

TOCP100Q-□□B, TOCP150Q-□□B, TOCP101Q-□□B, TOCP151Q-□□B, TOCP156Q-□□B
TOCP100X-□□B, TOCP150X-□□B, TOCP101X-□□B, TOCP151X-□□B, TOCP156X-□□B