GP1F40T1/GP1F40R1/ GP1C251

High Speed Type Plastic Fiber Optics with Built-in Amp.

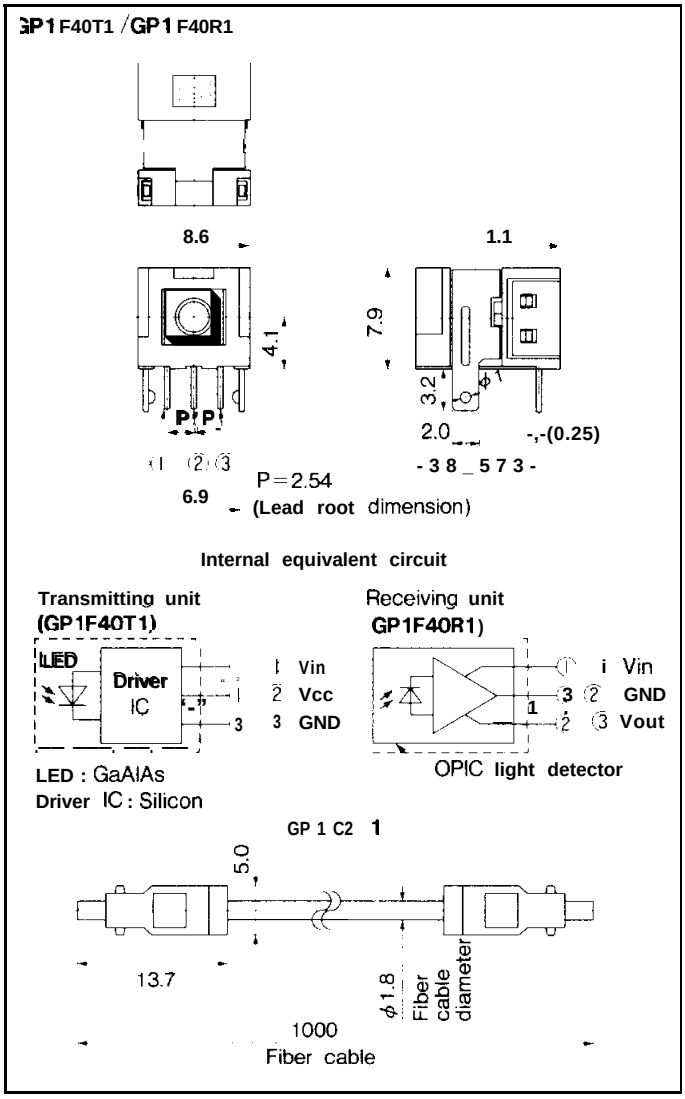
■ Features

1. High speed optical data transmission
   Signal transmission speed : DC to 25M bps
   (NRZ signal)
2. Uni-directional fiber optics using APF*
   *APF : All plastic Fiber
3. High resistance to noise
4. **GP1 F40T1** : Transmitting unit
   GP1 F40R1: Receiving unit
   GP1C251 : Plastic fiber cable (1m)

■ Applications

1. Copiers
2. Laser beam printers
3. Equipments with microcomputer

■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings (GP1F40T1/GP1F40R1)

Parameter		Symbol	Rating	Unit
Supply voltage		V_{CC}	−0.5 to +7.0	V
Output current	GP1 F40R1	101.	6(V_{CC}=5V)	mA
Input voltage		V_{in}	−0.5 to V_{CC}+0.3	V
Storage temperature		T.,.	−30 to +80	℃
Operating temperature		T_{opr}	o to +70	‘c

■ Recommended Operating Conditions (GP1F40T1/GP1F40R1)

Parameter		Symbol	Remarks	MIN.	MAX.	Unit
Supply voltage		V_{CC}		4.75	5.25	V
High level input voltage	GP1F40T1	V_{INH}		2.0	V_{CC}	v
Low level input voltage	GP1F40T1	V_{INL}		0	0.4	V
Operating transfer rate		To	NRZ signal duty raito 50%	0.1	25	Mbps

■ Electro-optical Characteristics (GP1F40T1/GP1F40R1) (Ta=25℃, V_{CC}=5V)

	Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
	Peak emission wavelength		λ_P		–	660		nm
	Supply current	GP1F40T1	I_{CC}	*1 Refer to Fig. 1	–	–	25	mA
		GP1F40R1		Refer to Fig. 2			30	
	Low →High delay time		t_{PLH}	Refer to Fig. 3	–		80	ns
	High→ Low delay time		t_{PHL}		–	–	80	ns
Transmitter	Optical power output couping with fiber		P_C	Refer to Fig. 1	– 12	– 9	– 6	dBm
	High level input current		I_{IH}	V_{IN}=2.0V	–		0.4	v
	Low level input current		I_{IL}	V_{IN}=0.8V	–		–1.6	v
	Pulse width distortion		tw	Refer to Fig. 3	30		70	%
Receiver	Minimum receiver input optical power level		P_{CMIN}	Refer to Fig. 2	–	–	–15	dBm
	Maximum receiver input optical power level		P_{CMAX}		–5.5	–	–	dBm
	High level output voltage		V_{OH}		2.7	–	–	v
	Low level output voltage		V_{OL}			–	0.4	v
	output rise time		tr		–	–	20	ns
	Output fall time		tf			–	10	ns
	Pulse width distortion		tw	Refer to Fig. 3	30		70	%

*1 When input is low level (V_{IN}=0.8V)

■ @tical Characteriab (GP1C251) (Ta=25℃)

Parameter	Symbol	MIN.	TYP.	MAX	Unit
Output coupling with fiber	P_f	–17	–	–	dBm
Refraction ratio	-	Steo index			

Note) 1. Standard light transmitter : Light transmitter that provides the fiber end light output of – 15dBm±0.3dBm when the standard optical fiber cable is connected.
2. Measuring system block diagram : Shown in Fig. 4.

■ Mechanical Characteristics (GP1C251)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Insertion force, withdrawal force	–	*2	6	–	40	N

*2 Initial value when GP1F40T1/GP1F40R1 is used

Fig. 1 Measuring Method (Transmitting Unit)

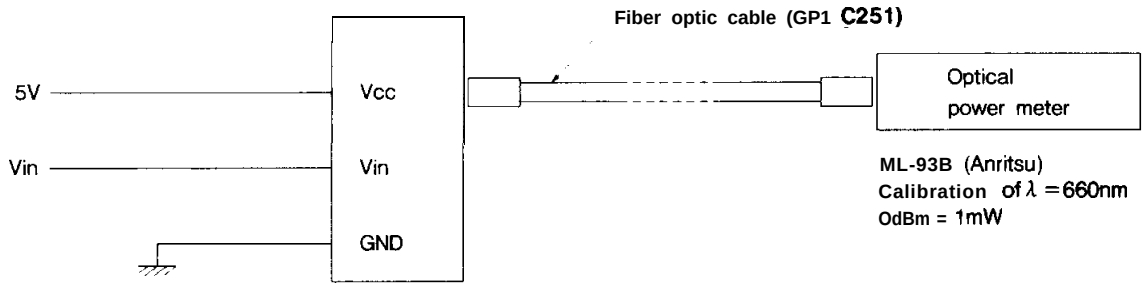
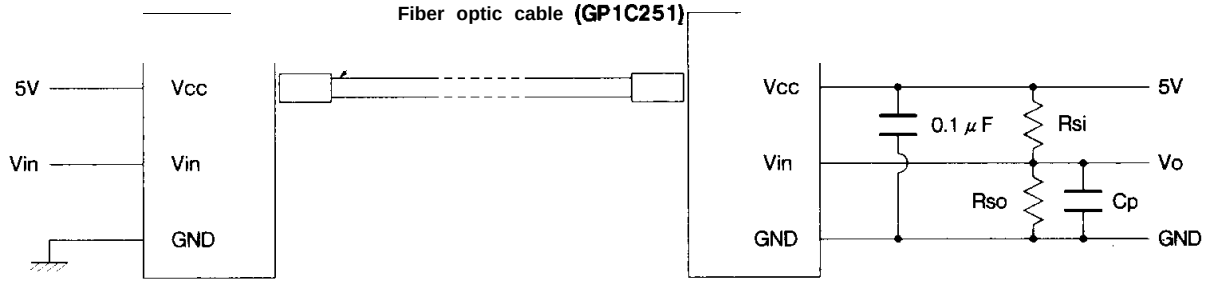


Fig. 2 Measuring Method (Receiver Unit)



Input signal : 0.1Mbps (NRZ, Duty50%)
Rsi = 2kΩ, Rso = 10kΩ, Cp = 2pF
(Rso, Cp : Including probe load)

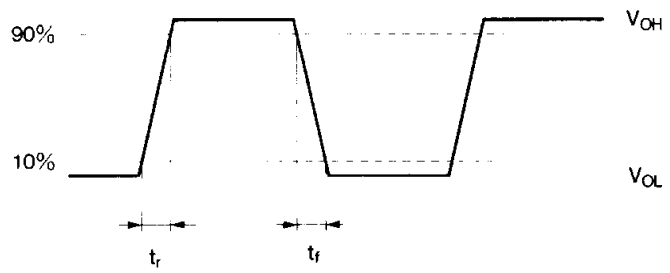
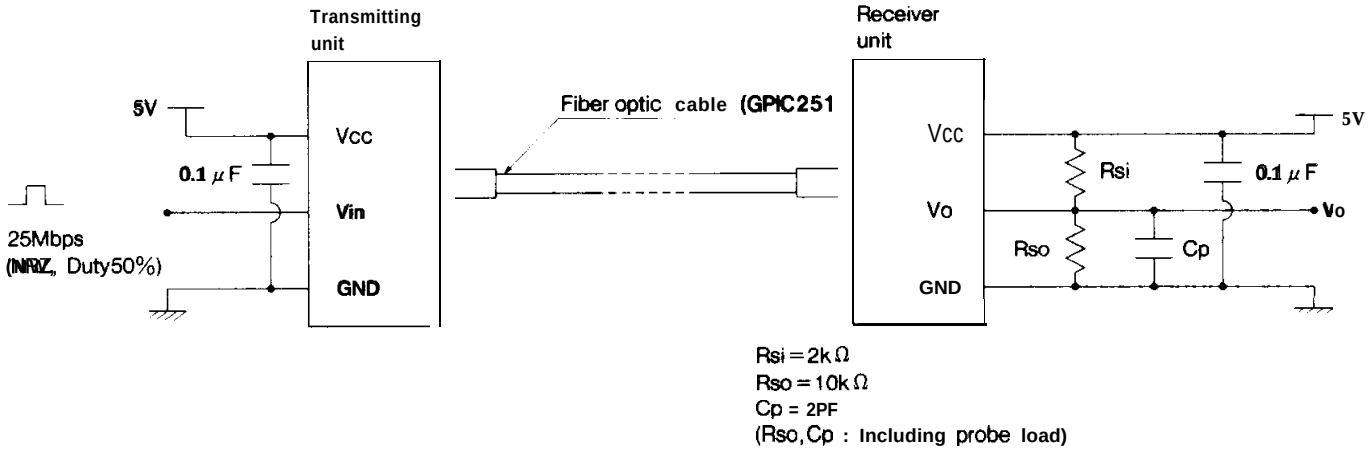
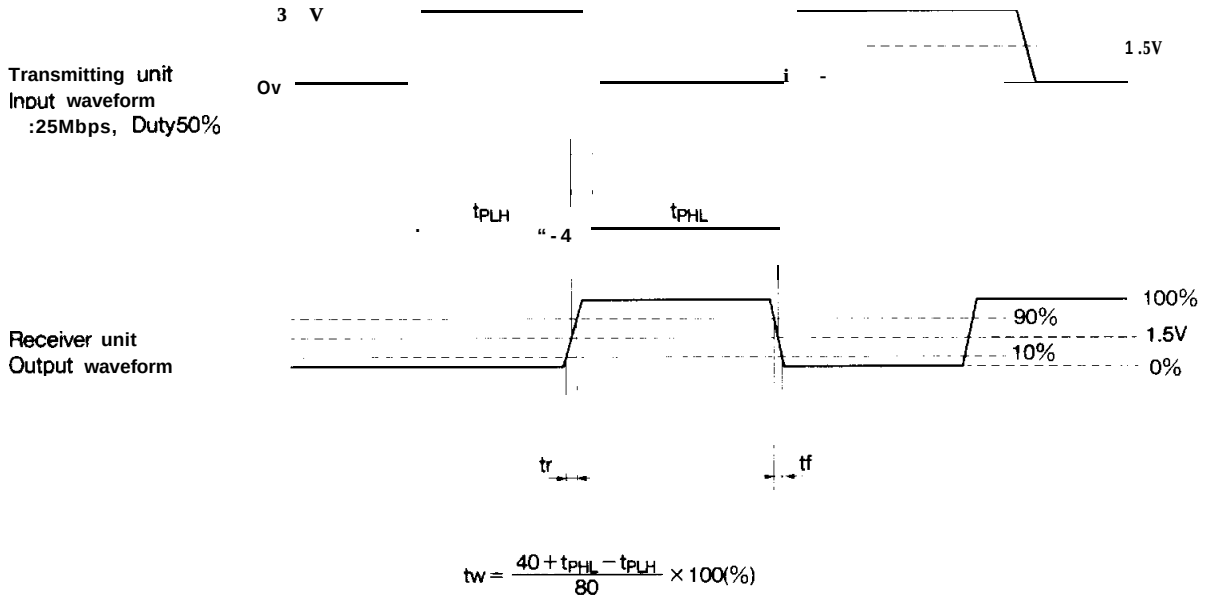


Fig. 3 Transfer Characteristics

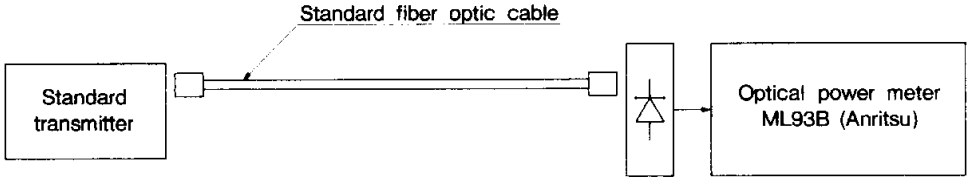


Rsi = 2kΩ
Rso = 10kΩ
Cp = 2PF
(Rso, Cp : Including probe load)



$$tw = \frac{40 + t_{PHL} - t_{PLH}}{80} \times 100(\%)$$

Fig. 4 Measuring Method (Optical Power Output Coupling with Fiber)



● Please refer to the chapter "Precautions for Use" (Page 78 to 93)