GP1U90X Series

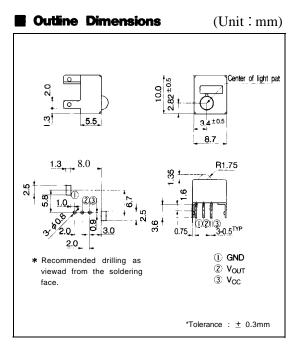
IR Detecting Unit for Remote Control

Features

- Compact package (Mounting area : Approx. 1/2 or less compared with other models)
- 2. Less sensitive to fluorescent lamp driven by inverter (Reception distance under fluorescent lamp : 2 times longer than **GP1 U56**)
- 3. Various B.P.F (Band Pass Filter) frequency
- 4. Built-in voltage regulator circuit

Applications

- 1. VCRs
- 2. Audio equipment



Absolute Maximum Ratings $(Ta=25^{\circ}C)$				
Parameter	Symbol	Rating	1 Jnit	
Operating supply voltage	Vcc	0 to 6.3	V	
*1Operating temperature	Topr	-10 to +70	°C	
Storage temperature	T _{stg}	-20 to $+70$	°C	
*2Soldering temperature	T _{sol}	260	°C	

*1 No dew formation

*2 Thickness:1.6mm at PWB mounting, For 5 seconds

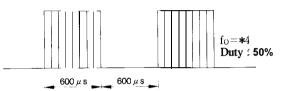
Recommended Operating Conditions

Parameter	Symbol Value	Unit
Supply voltage	V _{CC} 4.7 to 5.3	ΙV

Electrical Characteristics				(Ta = 25° C, V _{cc} =+5V)			
Parameter	Symbol	Conditions	MIN.	TYP.	MAX	Unit	
Dissipation current	Icc	No input light	-	—	5.0	mA	
High level output voltage	Voh		Vcc-0.5	-	-	v	
Low level output voltage	Vol	*3	-	—	0.45	v	
High level pulse width	T_1	5	400		800	μs	
Low level pulse width	T_2		400	_	800	μs	
B.P. F. center frequency	fo	-	-	* 4		kHz	

*3 The burst wave as shown in the following figure shall be transmitted by the transmitter shown in Fig. 1. *4 Diversified models with a different B.P.F frequency, as shown in a separate table, are also available

Burst Wave

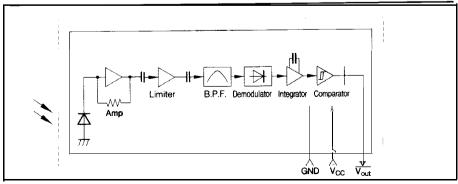


Model Line-ups

Model No. B.P.F. frequency Unit GP1U90X 40 40 * 36 38 36 38 36 37 37 37 37 38 39 35 35 35 35 36 36 36 35 36 36 36 37 35 35 36 37 37 36 37 37 35 35 35 36 36 36 36 35 35 35 35 36 36 36 35 35 36 <t< th=""><th></th><th></th><th></th></t<>						
* 36 GP1U901X 38 GP1U902X 36.7 * 32.75 * 41.7 * 48 GP1U907X 56.8 * 39	Model No.	B.P.F. frequency	Unit			
GP1U901X 38 GP1U902X 36.7 * 32.75 * 41.7 * 48 GP1U907X 56.8 * 39	GP1U90X	40				
GP1U902X 36.7 * 32.75 * 41.7 * 48 GP1U907X 56.8 * 39	*	36				
* 32.75 * 41.7 * 48 GP1U907X 56.8 * 39	GP1U901X	38				
* 41.7 KHz * 48 GP1U907X 56.8 * 39	GP1U902X	36.7				
* 41.7 * 48 GP1U907X 56.8 * 39	*	32.75	kHz			
GP1U907X 56.8 * 39	*	41.7	K112			
* 39	*	48				
	GP1U907X	56.8				
* 35	*	39				
	*	35				

*Also available on request

Internal Block Diagram



Units

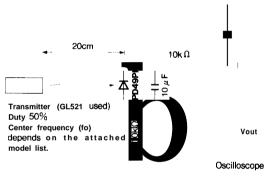
Performance

Using the transmitter shown in Fig. 1, the output signal of the light detecting unit is good enough to meet the following items in the standard optical system in Fig. 2.

- Linear reception distance characteristics
 When L = 0.2 to 8m, *Ee <1 lx and \$\phi = 0^{\circ}\$ in Fig. 2, the output signal shall meet the electrical characteristics in the attached list.
- (2) Sensitivity angle reception distance characteristics When L =0.2 to 6m, *Ee <10 lx and $\phi \leq 30^{\circ}$ in Fig. 2, the output signal shall meet the electrical characteristics in the attached list.

(3) Anti outer peripheral light reception distance characteristics When L = 0.2 to 4m, *Ee ≤ 300 lx and $\phi = 0^{\circ}$ in Fig. 2, the output signal shall meet the electrical characteristics in the attached list.

- *5 It refers to detector face illuminance.
- ***6** Outer peripheral light source :CIE standard light source A shall be used and placed at 45" from the perpendicular axis at the detector face center.





In the above figure, the transmitter should be set so that the output V out can be 40mV_{PP} . However, the **PD49PI** to be used here should be of the short-circuit current I sc = 2.6 μ A at $E_v = 100$ lx.

(E_v is an illuminance by CIE standard light source A (tungsten lamp).)

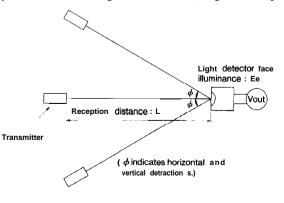


Fig. 2. Standard optical system

Precautions for Use

- Use the light emitting unit (remote control transmitter), in consideration of performance, characteristics and operating condition of light emitting device and the characteristics of the light detecting unit.
- (2) Pay attention to a malfunction of the light detecting unit when the surface is stained with dust and refuse. Care must be taken not to touch the light detector surface. If it should be dirty, wipe off with soft cloth so as to prevent scratch In case some solvents are required, use metyl alcohol, ethyl alcohol or isopropyl alcohol. Also, protect the light detecting unit against flux and others.
- (3) The shield case shall be grounded on PWB pattern.
- (4) Do not apply unnecessary force to the terminals and case form outside.
- (5) Do not push the light detector surface (photodiode) from outside.
- (6) To avoid the electorstatic breakdown of IC, handle the unit under the condition of grounding with human body, soldering iron, etc.
- (7) In case of adopting the infrared light detecting unit for the wireless remote control, use it in accordance with the transmission scheme and the signal format recommended in "Countermeasures for malfunction prevention of home appliances with infrared remote control " issued form Japan Association of Electrical Home Appliances (AEHA) in July 1987.
- (8) As for other general cautions, refer to the chapter "Precautions for Use" (page 78 to 93).