IS1U621/IS1U621L

IR Sensor for Remote Control

■ Features

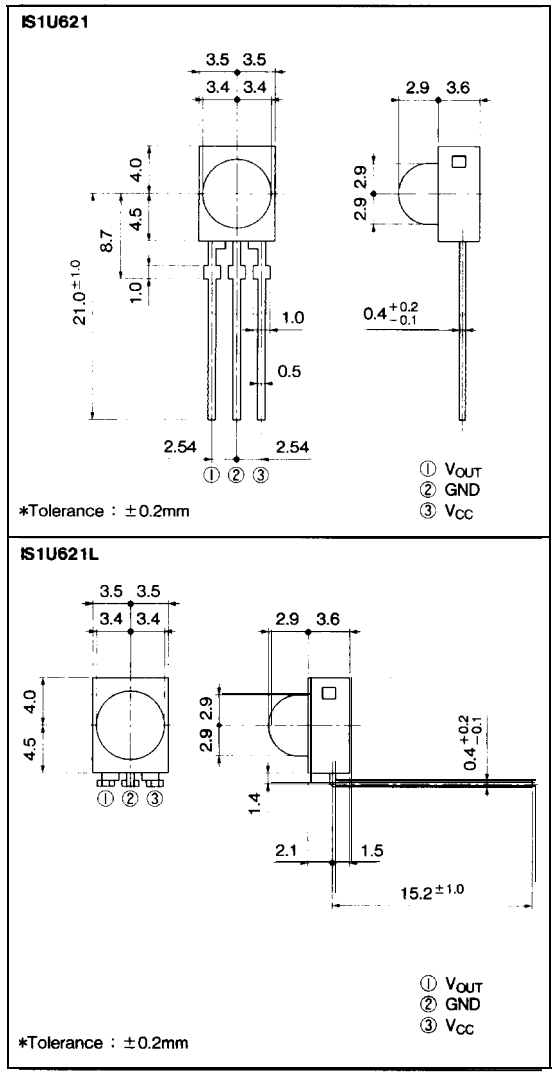
1. Compact (Approx. 1/10 in volume, as compared with the current model **GP1 U58X**)
2. High sensitivity (Reception distance : MIN. 8m)
3. B. P. F. center frequency (fixed at 38kHz)
4. Special lens design

■ Applications

o Light detecting portion for remote control
1. Audio equipment
2. Compact AV equipments

o optical switch

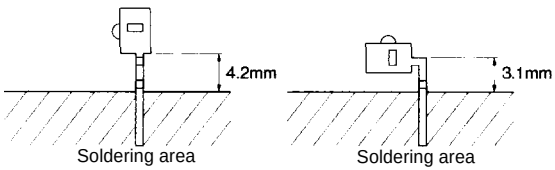
■ Outline Dimensions (Unit : mm)



■ Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Supply voltage	V_{CC}	0 to 6.0	V
*1Operating temperature	T_{opr}	−10 to +60	℃
Storage temperature	T_{stg}	−20 to +70	℃
*2Soldering temperature	T_{sol}	260	℃

*1 No dew formation
*2 For 5 wends at the position of below from the resin edge.



■ Recommenced Operating Conditions

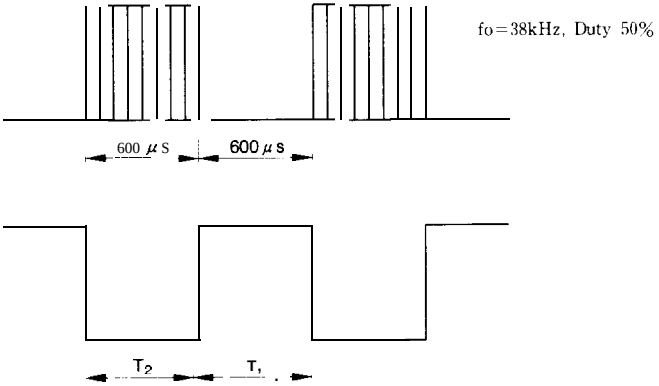
Parameter	Symbol	Value	Unit
Operating supply voltage	V_{CC}	4.7 to 5.3	V

■ Electrical Characteristics

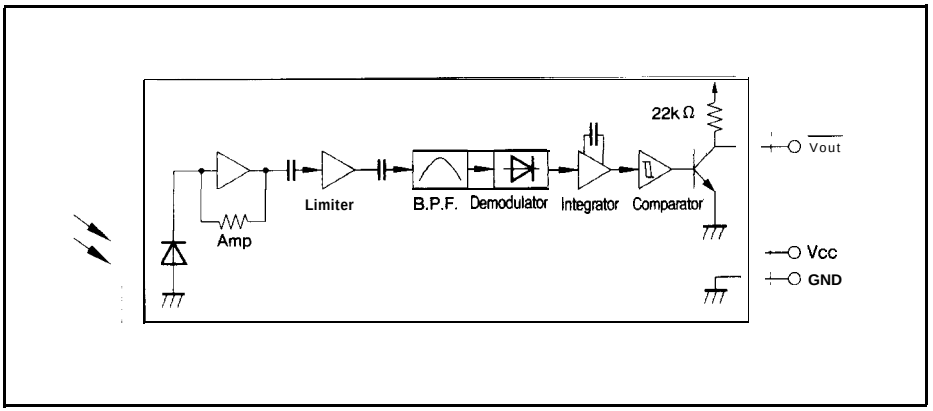
(Ta = 25°C, V_{CC} = +5V)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX	Unit
Dissipation current	I_{CC}	No incident light, Output terminal OPEN	–	2.8	4.5	mA
High level output voltage	V_{OH}	*3, Output terminal : OPEN	V_{CC}−0.2	–	—	v
Low level output voltage	V_{OL}	*3, Pull-up resistance : 2.2kΩ	–	0.45	0.6	v
High level pulse width	T_1	*3	400	—	800	μs
Low level pulse width	T_2		400	—	800	μs
B.P.F. center frequency	f_O		—	38	—	kHz
Reception distance	L	Ee < 10 lx	8.0		—	m

*3 Transmit the burst wave shown below



■ Internal Block Diagram



■ Performance

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

(1) Linear reception distance characteristics
When L= 0.2 to 8m, *4Ee <10 lx and ϕ = O' in Fig. 2, the output signal shall meet the electrical characteristics in the attached list.

(2) Sensitivity angle reception distance characteristics
When L=O.2 to 5m, *4Ee< 10 1x and X direction $\phi \leqq 30°$, Y direction $\theta = 0°$ in Fig. 2, the output signal shall meet the electrical characteristics in the attached list.

*4 It refers to detector face illuminance.

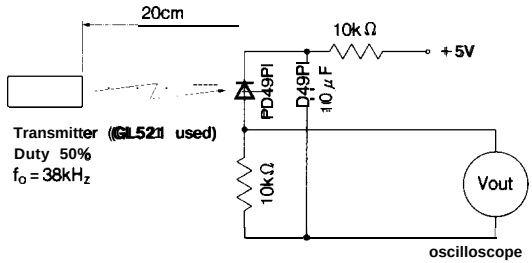


Fig. 1. Transmitter

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 $I_{SC} = 2{,}6\ \mu A$ at E_V = 100 lx.
(E_V is an illuminance by CIE standard light source A (tungsten lamp).)

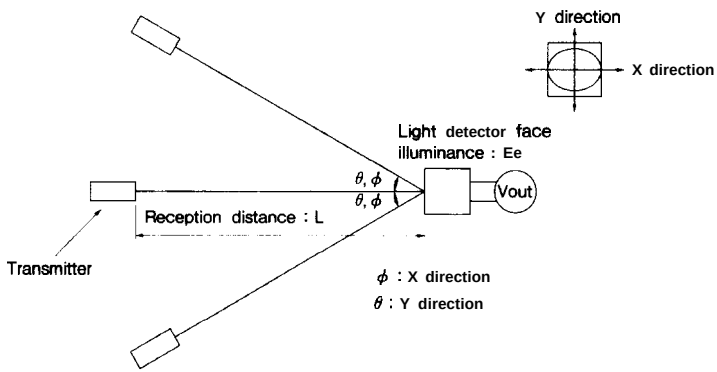


Fig. Z Standard optical system