

■Features

- Miniature size
- Built-in exclusive IC
- Wide half angle & long reception distance
- Good noise-proof capability
- High immunity against ambient light
- Top view

■Applications

- AV instruments (Audio, TV, VCR, CD player)
- Home appliances (Air-conditioner, Fan, Light.)
- Remote control for wireless devices

■Absolute Maximum Rating

(Ta=25°C)

Parameter	Symbol	Ratings	Unit
Supply Voltage	V _{cc}	6.0	V
Operating Temperature	T _{opr}	-10 ~ +60	°C
Storage Temperature	T _{stg}	-20 ~ +75	°C
Lead Soldering Temperature *1	T _{sol}	260°C	-

*1 At the position of 2mm from the bottom of the package within 5 seconds

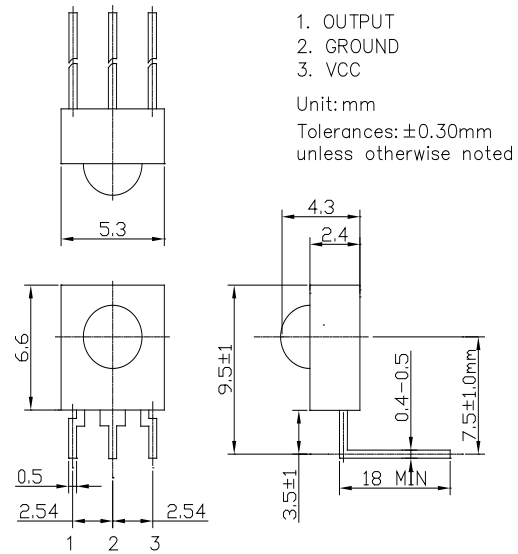
■Electrical -Optical Characteristics

(Ta=25°C)

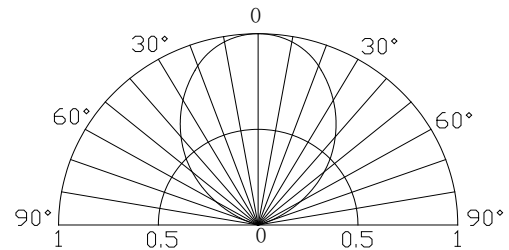
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	V _{cc}		2.7	3.0	5.5	V
Current Consumption	I _{cc}	Input Signal=0	-	0.9	1.5	mA
Reception Distance	d	200±5Lux, V _{cc} =3V	-	20	-	m
B.P.F. Center Frequency	F _o		-	37.9	-	KHZ
Peak Wavelength	λ _p		-	940	-	nm
Signal Output	S _o		--Active Low--			
High Level Output Voltage	V _{oh}	V _{cc} =3V	2.7	3.0	-	V
		V _{cc} =5V	4.7	5.0	-	V
Low Level Output Voltage	V _{ol}	V _{in} =0V I _{sink} =2.0mA	-	0.2	0.4	V
Burst Width Tolerance *2	B _w	Burst Wave=600μs	400	600	800	μs
Half Angle	Δθ		-	90	-	deg

*2 The output tolerance of burst width received when transmitter sends the burst wave.

■Outline Dimension

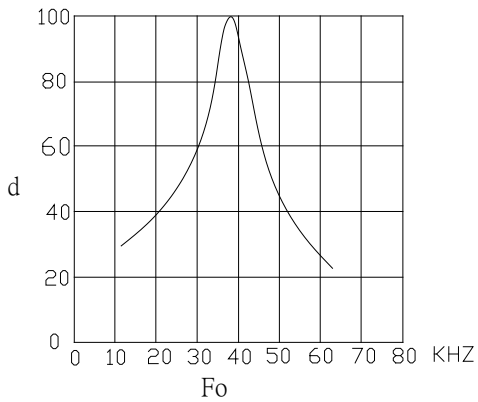


■Directivity



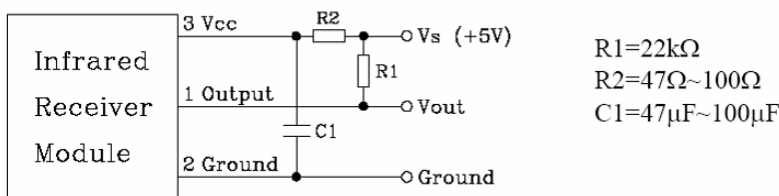
■ Carrier Frequency

Relative Reception Distance vs Transmitter Carrier Frequency

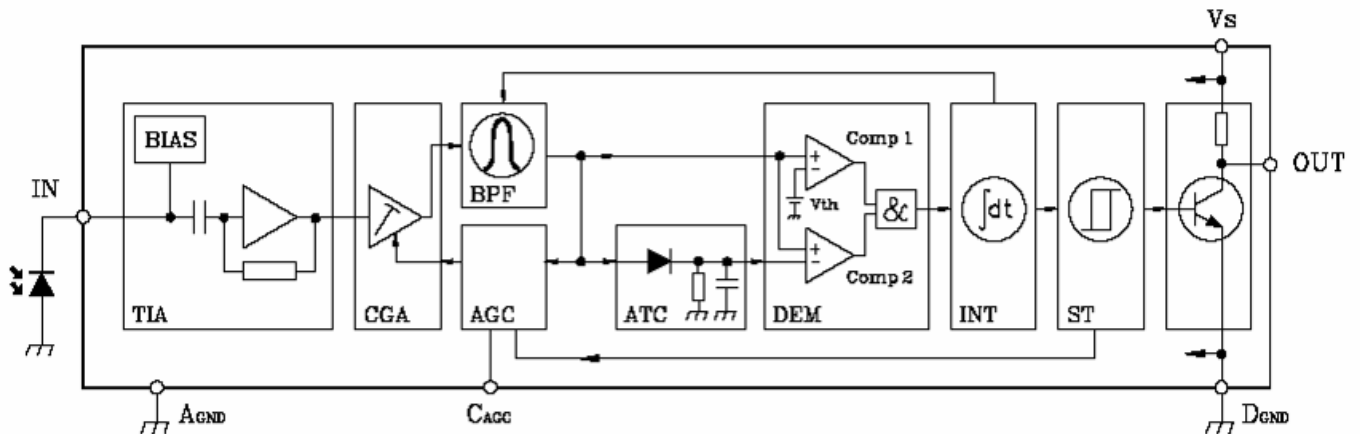


■ For Noisy Power Supply

In case of noisy power supply, please serially insert 100Ω resistor and about 47μF electrolytic capacitor in Vcc line and ground as follows:



■ Block Diagram



- | | | | |
|-----|---------------------------|-----|-----------------------------|
| TIA | Transimpedance amplifier | ATC | Automatic threshold control |
| CGA | Controlled gain amplifier | DEM | Demodulator |
| BPF | Bandpass filter | INT | Integrator |
| AGC | Automatic gain control | ST | Schmitt trigger |

■ Testing Method

Distance between emitter and detector specifies maximum distance that output waveform satisfies the standard (FIG-3) under the standard transmitter.

a. Measuring place

Indoor Without extreme reflection of light.

b. Ambient light source

Detecting surface illumination is 200 ± 5 Lux under ordinary white fluorescence lamp of no high frequency lightning.

c. Standard transmitter

Transmitter wave indicated in FIG-2 of standard transmitter is arranged to satisfy $V_O \geq 50mV_{p-p}$ under the measuring circuit specified in FIG-3

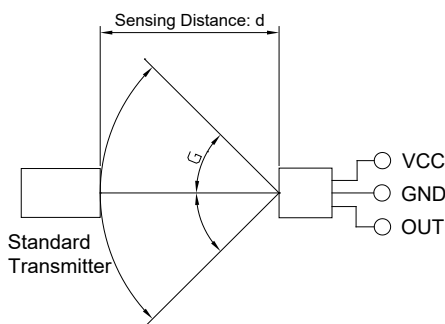
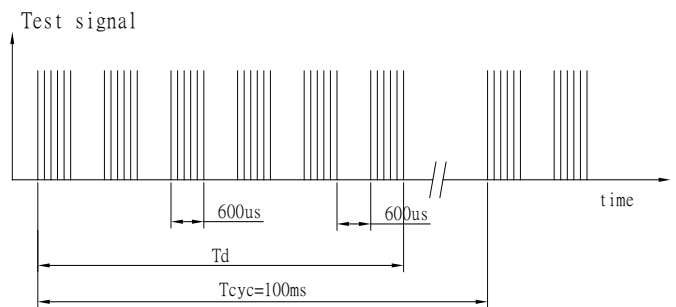


FIG-1



Output signal

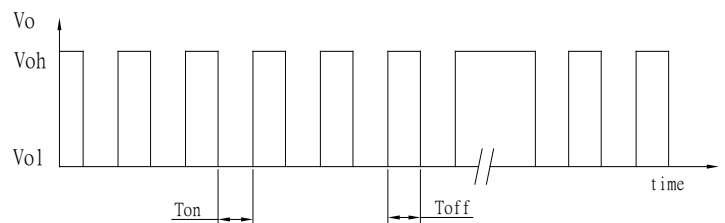


FIG-2

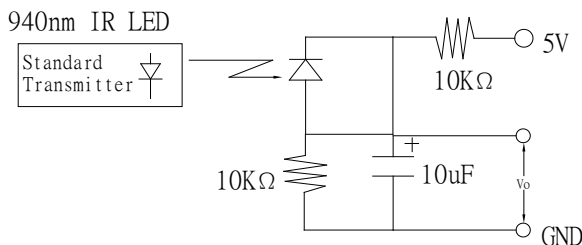


FIG-3 Power Output Measurement Circuit

■ Precautions for Use

a. Store and use where there is no force causing transformation or change in quality.

b. Store and use where there is no corrosive gas or sea(salt) breeze.

c. Store and use where there is no extreme humidity.

d. Solder the lead pin within the condition of ratings. After soldering, do not add exterior force.

e. Do not wash this device. Wipe the stains of diode side with a soft cloth. You can use the solvent, ethyl alcohol, or methyl alcohol only.

f. To prevent static electricity damage to the pre-amp, make sure that the human body, the soldering iron are connected to ground before using.