INFRARED REMOTE CONTROL RECEIVER

■ GENERAL DESCRIPTION

The NJL20H/V000A series are small and high performance receiving devices for infrared remote control system.
They can operate under low and wide supply voltage (2.7V to 5.5V) with enhanced immunity against all kinds of disturbance light

■ FEATURES

1. Wide and low supply voltage 2.7V to 5.5V
2. Low supply current 0.56mA max.
3. Mold type and metal case type to meet the design of front panel.
4. Line-up for various center carrier frequencies.

■APPLICATIONS

1. AV instruments such as Audio, TV, VCR, CD, MD,DVD etc.
2. Home application such as Air-conditioner, Fan etc.
3. Battery operated instruments such as Toy, Camera etc.

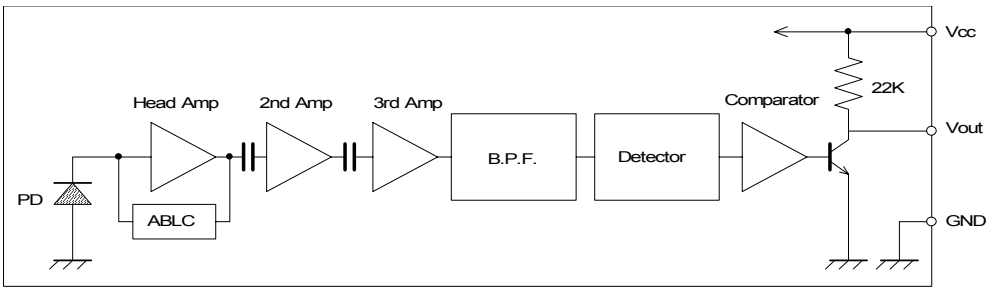
■ LINE-UP

Mold/Metal case	Mold type		
View	Side	Top	
Hight / Carrier Frequency	6.3mm	5.4mm	5.4mm
fo= 36 kHz	NJL21V360A	NJL21H360A	NJL21H360AF3
36.7 kHz	NJL21V367A	NJL21H367A	NJL21H367AF3
38 kHz	NJL21V380A	NJL21H380A	NJL21H380AF3
40 kHz	NJL21V400A	NJL21H400A	NJL21H400AF3

Mold/Metal case	Metal Case type				
View	Side	Top			
Hight / Carrier Frequency	6.3mm	5.7mm	8mm	11mm	15mm
fo= 36 kHz	NJL21V360A-M	NJL21H360A-M	NJL22H360A	NJL23H360A	NJL24H360A
36.7 kHz	NJL21V367A-M	NJL21H367A-M	NJL22H367A	NJL23H367A	NJL24H367A
38 kHz	NJL21V380A-M	NJL21H380A-M	NJL22H380A	NJL23H380A	NJL24H380A
40 kHz	NJL21V400A-M	NJL21H400A-M	NJL22H400A	NJL23H400A	NJL24H400A

Regarding other frequency or packages, please contact to New JRC individually.

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	Vcc	6.3	V
Operating Temperature Range	Topr	-30 to +85	°C
Storage Temperature Range	Tstg	-40 to +85	°C
Soldering Temperature	Tsol	260 (5sec. 4.0mm from mold body)	°C

■ RECOMMENDED OPERATING CONDITION

Supply Voltage Range Vcc 2.7 V to 5.5V

■ ELECTRO-OPTICAL CHARACTERISTICS (Vcc=3.3V,Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Current	Icc	No Signal Input	—	—	0.56	mA
Transmission Distance	Lc	Direction of Ray Axis *1	13	18	—	m
Directivity	θL	Angle of half Lc, Horizontal *2	—	45	—	deg
	θV	Angle of half Lc, Vertical *2	—	30	—	deg
Output Voltage Low	VL	No Load	—	0.2	0.5	V
Output Voltage High	VH	No Load	2.8	—	—	V
Low Level Pulse Width	TwL	See Test Circuit	400	—	850	μs
High Level Pulse Width	TwH	See Test Circuit	350	—	800	μs
Center Frequency	fo	See Line-up	36.0	—	40.0	kHz

Note *1:Test with each center carrier frequency under the test condition shown below.
*2:Place major axis of elliptic lens in horizontal direction and minor vertical.

■TEST METHOD

Test condition in as follows:

(1) Standard transmitter:
Transmitting waveform is shown in Fig.1
Transmitting power should be adjusted so that output voltage Vout will be 400mVp-p.(Test circuit is shown in Fig.2)
Regarding IR LED used for transmitter,
λp=940nm, Δλ=50nm.
Regarding photo diode,
Sensitivity S=26nA/Lx
in case light source temperature2856°K,
Ee=100Lx, VR=5V

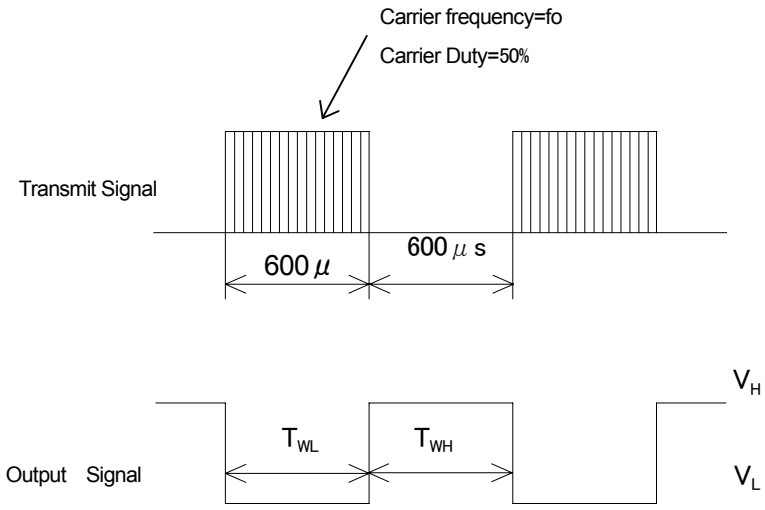


Fig.1 TRANSMITTER WAVE FORM

(2) Test system: Shown in Fig.3.

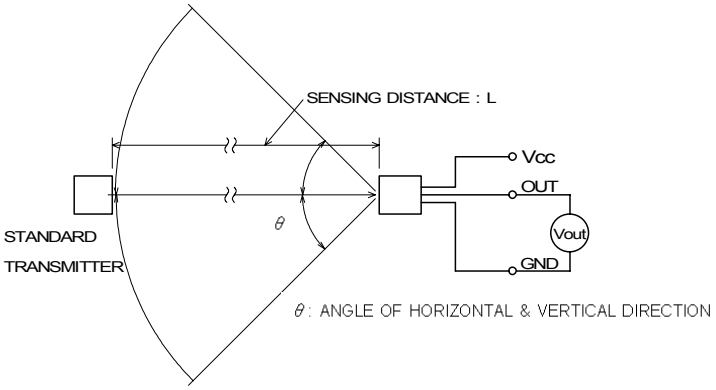


Fig.3 TEST SYSTEM

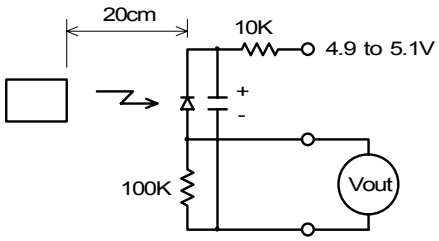


Fig.2 STD.TRANSMITTER TEST CIRCUIT

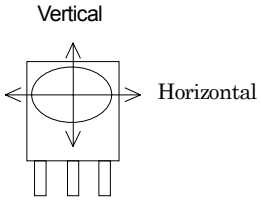
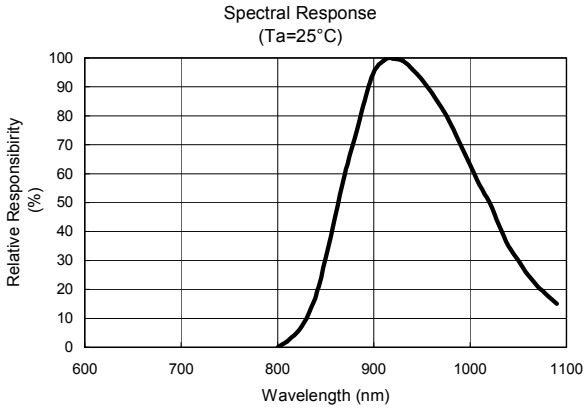
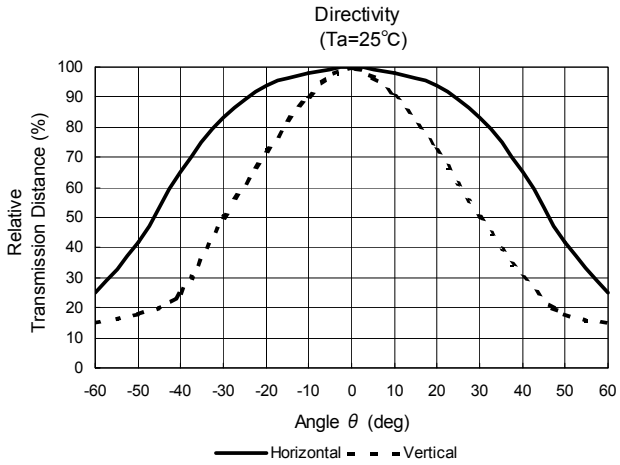


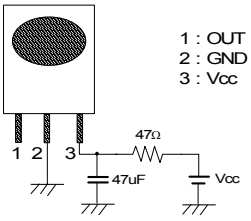
Fig.4 DIRECTIVITY

■ TYPICAL CHARACTRISTICS



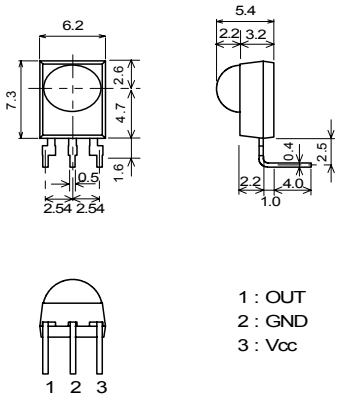


■ RECOMMENDED APPLICATION CIRCUIT

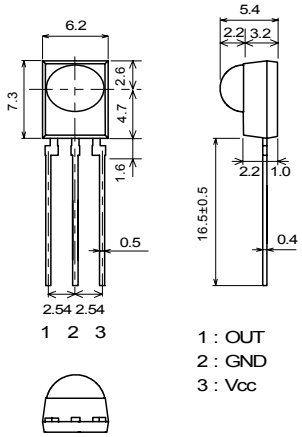


RC Filter should be connected closely between Vcc pin and GND pin.

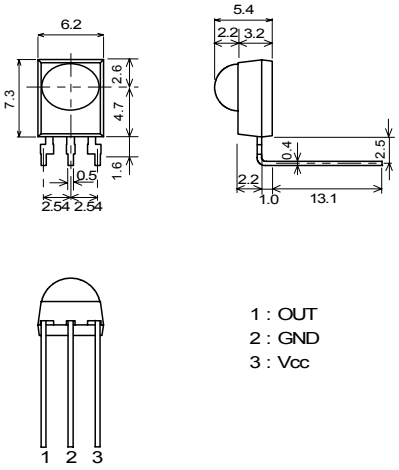
■ OUTLINE



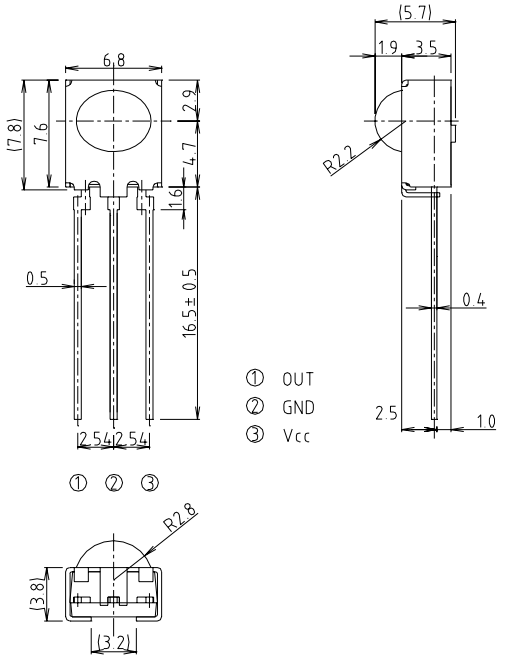
NJL21H000A
UNIT:mm



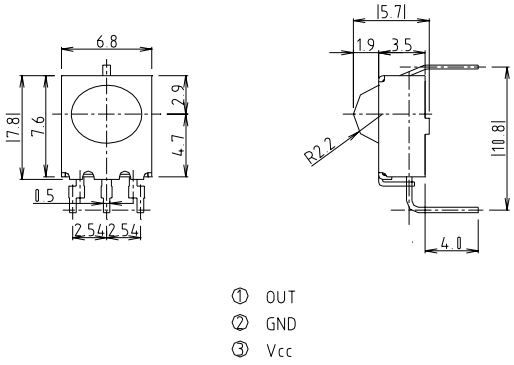
NJL21V000A
UNIT:mm

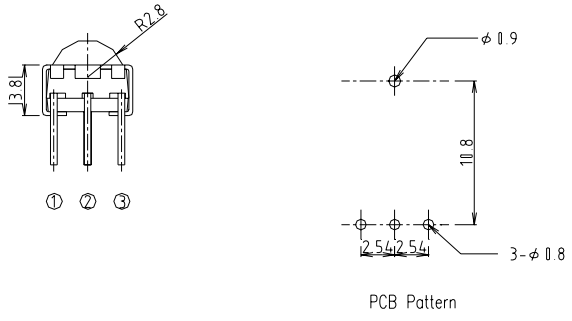


NJL21H000AF3
UNIT:mm

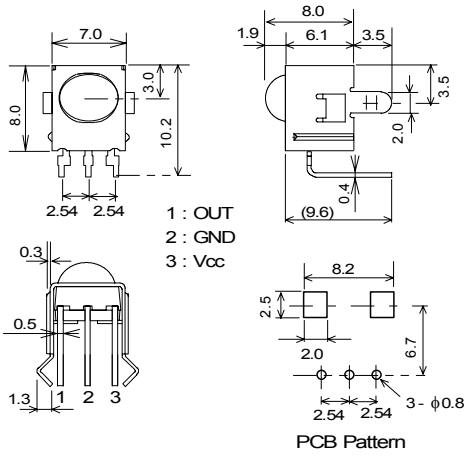


NJL21V000A－M
UNIT:mm

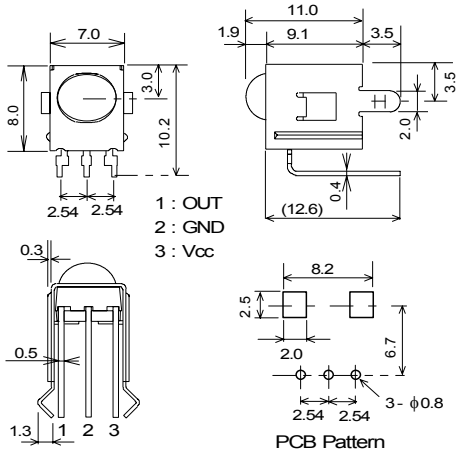




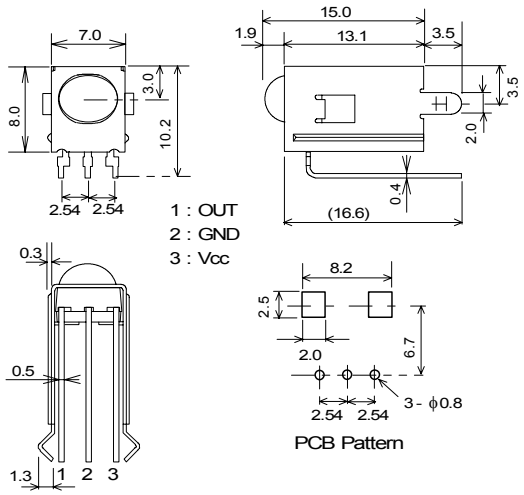
NJL21H000A－M
UNIT:mm



NJL22H000A
UNIT:mm



NJL23H000A
UNIT:mm



NJL24H000A
UNIT:mm

1. Tolerance is ±0.3mm unless otherwise noted.
2. Ground metal case on PCB. Metal case is not connected to GND pin inside.Tolerance is ±0.3mm unless otherwise noted.