



INFRARED REMOTE CONTROL RECEIVER

■ GENERAL DESCRIPTION

NJL50H/V000A series are small and high performance receiving devices for infrared remote control system. Regarding the transmission distance, NJL50H/V000A is longer than NJL50H/V000. The pulse width of NJL50H/V000A series are stable relating to commander's power or distance between transmitter and receiver. NJL50H/V000A series have five kinds of package including three types of metal case to meet the various applications.

■ FEATURES

1. Mold type and metal case type to meet the design of front panel.
2. Elliptic lens to improve the characteristic against light noise from the upper and lower side.
3. Line-up for various center carrier frequencies.

■ APPLICATIONS

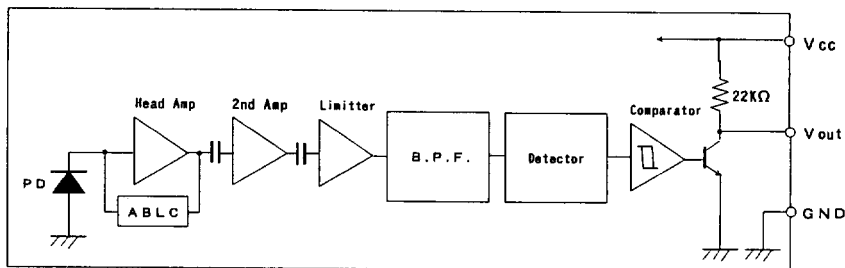
1. AV instruments such as Audio, TV, VCR, CD, MD, etc.
2. Home appliances such as Air-conditioner, Fan, etc.
3. The other equipments with wireless remote control.

■ LINE-UP

Mold/ Metal Case	Mold Type		Metal Case Type		
View	Top	Side	Top		
Height Carrier Frequency	5.4 mm	6.3 mm	8 mm	11 mm	15 mm
fo=30 KHz	NJL51H300A	NJL51V300A	NJL57H300A	NJL55H300A	NJL56H300A
32.75KHz	NJL51H328A	NJL51V328A	NJL57H328A	NJL55H328A	NJL56H328A
36 KHz	NJL51H360A	NJL51V360A	NJL57H360A	NJL55H360A	NJL56H360A
36.7 KHz	NJL51H367A	NJL51V367A	NJL57H367A	NJL55H367A	NJL56H367A
38 KHz	NJL51H380A	NJL51V380A	NJL57H380A	NJL55H380A	NJL56H380A
40 KHz	NJL51H400A	NJL51V400A	NJL57H400A	NJL55H400A	NJL56H400A
56.8 KHz	NJL51H568A	NJL51V568A	NJL57H568A	NJL55H568A	NJL56H568A

※ Regarding the other frequencies or packages, please contact to NJRC individually.

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta= 25 °C)

Supply Voltage	V _{cc}	6.3V
Operating Temperature Range	T _{opr}	-30 °C — +85 °C
Storage Temperature Range	T _{stg}	-40 °C — +85 °C
Soldering Temperature	T _{sol}	260 °C 5sec 4.0mm from mold body



RECOMMENDED OPERATING CONDITION

Supply Voltage Range V_{cc} 4.5V – 5.5V

ELECTRO-OPTICAL CHARACTERISTICS ($V_{cc} = 5.0V$, $T_a = 25^\circ C$)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Current	I_{cc}	No Signal Input	—	—	3	mA
Transmission Distance	L_c	Direction of Ray Axis *1	13	18	—	m
Directivity	θ_L	Angle of half L_c , Horizontal *2	—	50	—	deg
	θ_V	Angle of half L_c , Vertical *2	—	35	—	deg
Output Voltage Low	V_L	No Load	—	0.2	0.5	V
Output Voltage High	V_H	No Load	4.5	—	—	V
Low Level Pulse Width	T_{WL}	See Test Circuit	400	—	800	μs
High Level Pulse Width	T_{WH}	See Test Circuit	400	—	800	μs
Center Frequency	f_o	See Line-up	30.0	—	56.8	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 in vertical.

TEST METHOD

Test condition is as follows:

(1) Standard Transmitter:

Transmitting waveform is shown in Fig.1. Transmitting power should be adjusted so that output voltage V_{out} will be 400 mVp-p.

Regarding IR LED used for transmitter,

$\lambda_p = 940nm$, $\Delta\lambda = 50nm$.

Regarding photo diode, Sensitivity

$S = 26nA/Lx$, in case light source

temperature 2856°K, $E_e = 100Lx$, $VR = 5V$

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

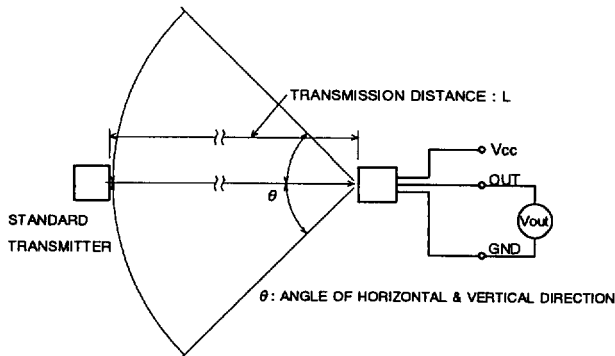


Fig. 3 TEST SYSTEM

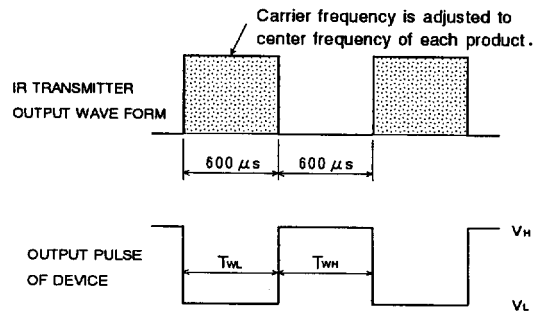


Fig. 1 TRANSMITTER WAVE FORM

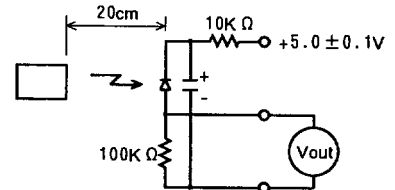
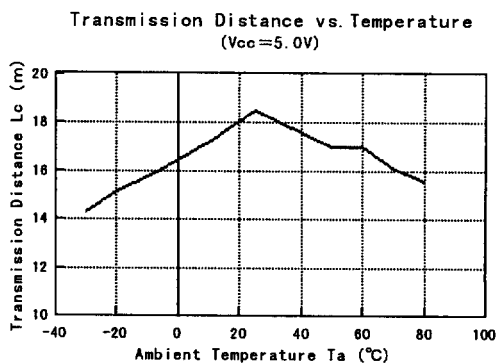
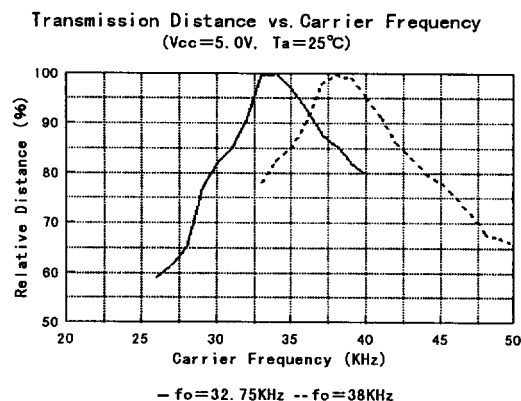
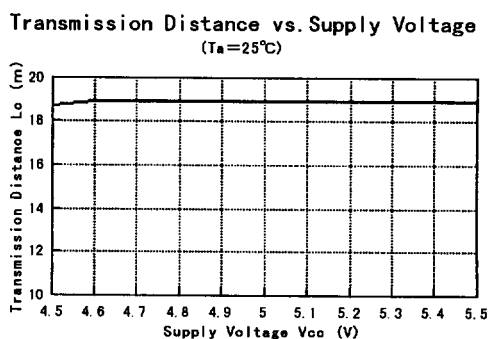
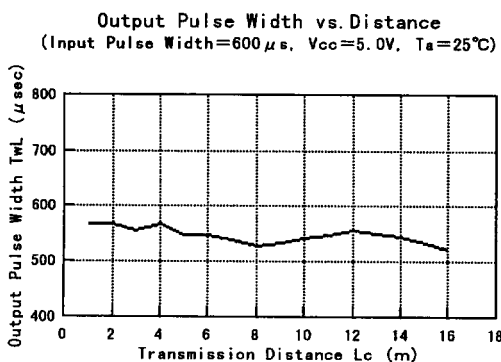
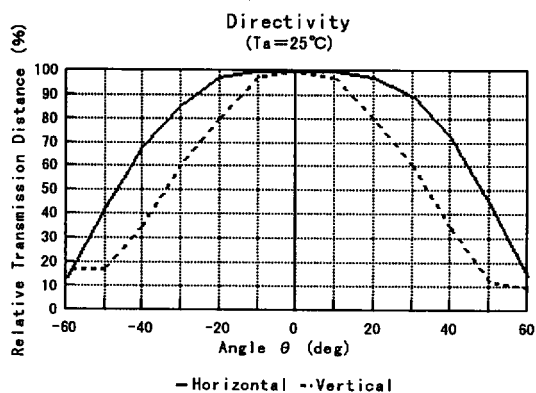
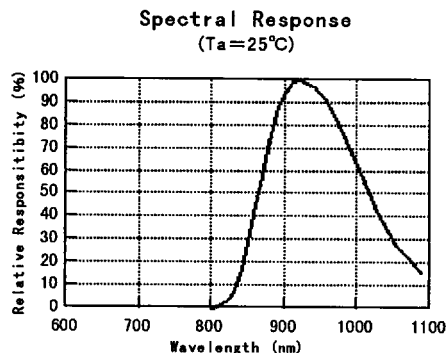


Fig. 2 STD. TRANSMITTER TEST CIRCUIT

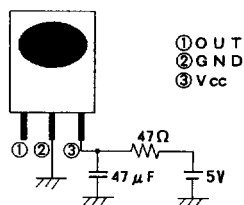


TYPICAL CHARACTERISTICS



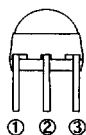
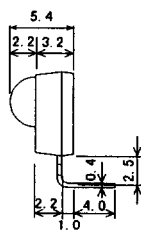
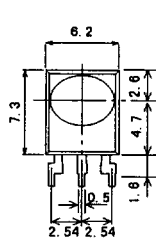


RECOMMENDED APPLICATION CIRCUIT



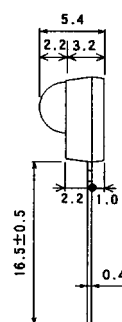
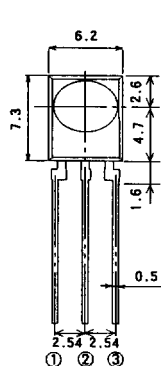
RC Filter should be connected closely between Vcc pin and GND pin.

OUTLINE



① OUT
② GND
③ Vcc

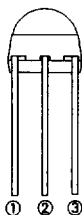
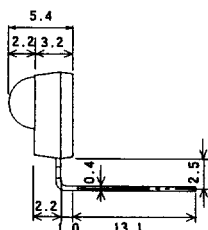
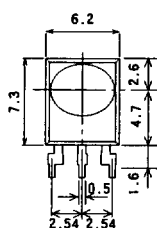
NJL51H000A
UNIT : mm



① ② ③

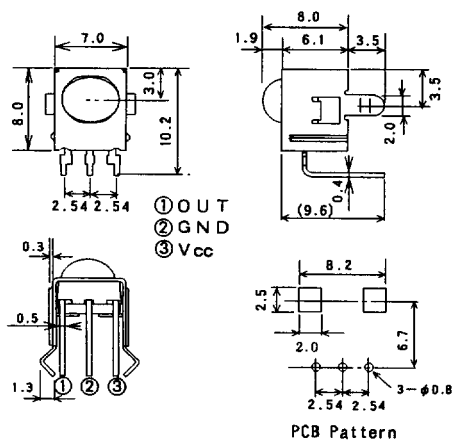
① OUT
② GND
③ Vcc

NJL51V000A
UNIT : mm

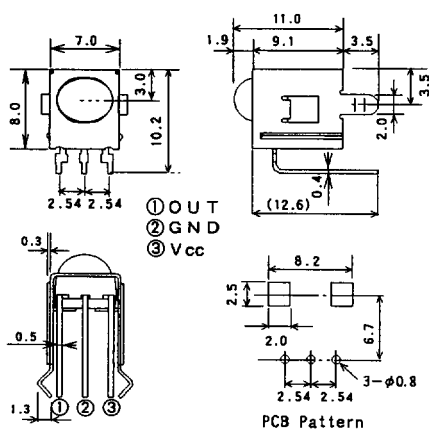


① OUT
② GND
③ Vcc

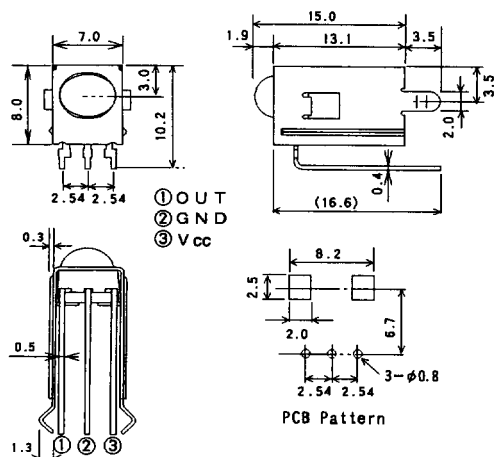
NJL51H000AF3
UNIT : mm



NJL57H000A
UNIT : mm



NJL55H000A
UNIT : mm



NJL56H000A
UNIT : mm

1. Tolerance is $\pm 0.3\text{mm}$ unless otherwise noted.
2. Ground metal case on PCB. Metal case is not connected to GND pin inside.