

## INFRARED REMOTE CONTROL RECEIVER

### ■ GENERAL DESCRIPTION

NJL35V/38H000 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). NJL35V/38H000 series are mesh window type to improve EMI characteristic. Even under strong EMI noise condition such as TV, Air-conditioner, etc., NJL25V/28H000 series can work normally.

### ■ FEATURES

1. Wide and low supply voltage 2.7V to 5.5V
2. Low supply current 0.43mA typ.  $V_{cc}=3.3V$
3. Metal case type with mesh window
4. Line-up for various center carrier frequencies

### ■ APPLICATIONS

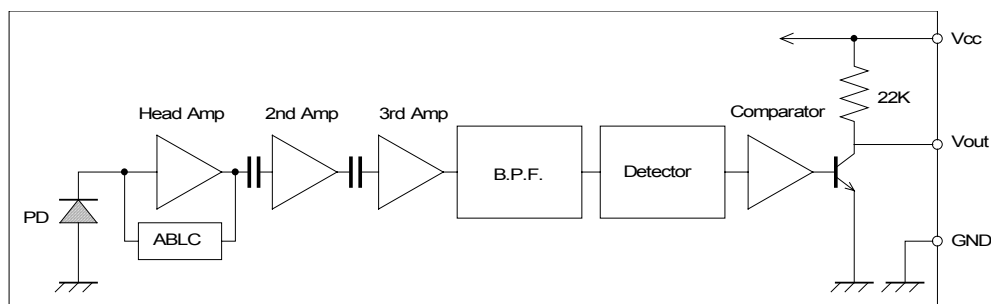
1. Home application such as Room light Air-conditioner, etc.
2. AV instruments such as Audio, TV, DVD, STB etc.

### ■ LINE-UP

View Type	Side	Top
Height	15.6mm	15mm
Carrier Frequency		
fo= 36 kHz	NJL35V360	NJL38H360
36.7 kHz	NJL35V367	NJL38H367
38 kHz	NJL35V380	NJL38H380
40 kHz	NJL35V400	NJL38H400

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

### ■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	$V_{cc}$	6.3	V
Operating Temperature Range	$T_{opr}$	-30 to +80	°C
Storage Temperature Range	$T_{stg}$	-40 to +85	°C
Soldering Temperature	$T_{sol}$	260 (5sec. 4.0mm from mold body)	°C

## RECOMMENDED OPERATING CONDITION

Supply Voltage Range  $V_{CC}$  2.7 V to 5.5V

## ELECTRO-OPTICAL CHARACTERISTICS ( $V_{CC}=3.3V$ , $T_a=25^\circ C$ )

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Current	$I_{CC}$	No Signal Input	—	0.43	0.56	mA
Transmission Distance	$L_c$	Direction of Ray Axis *1	10	15	—	m
Directivity	$\theta_L$	Angle of half $L_c$ , Horizontal *2	—	45	—	deg
	$\theta_V$	Angle of half $L_c$ , Vertical *2	—	30	—	deg
Output Voltage Low	$V_L$	No Load	—	0.2	0.5	V
Output Voltage High	$V_H$	No Load	2.8	—	—	V
Low Level Pulse Width	$T_{WL}$	See Test Circuit	400	—	950	$\mu s$
High Level Pulse Width	$T_{WH}$	See Test Circuit	250	—	800	$\mu s$
Center Carrier Frequency	$f_o$	See Line-up	—	*3	—	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.

\*3: Four types of frequency : 36.0, 36.7, 38.0, 40.0KHz

## 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 400mVp-p. (Test circuit is shown in Fig.2)

Regarding IR LED used for transmitter,  
 $\lambda_p=940nm$ ,  $\Delta\lambda=50nm$ .

Regarding photo diode,

Sensitivity  $S=26nA/Lx$

in case light source temperature  $2856^\circ K$ ,  
 $E_e=100Lx$ ,  $V_R=5V$

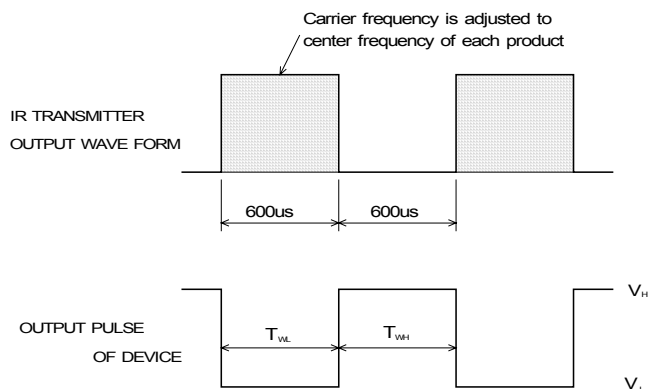


Fig.1 TRANSMITTER WAVE FORM

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

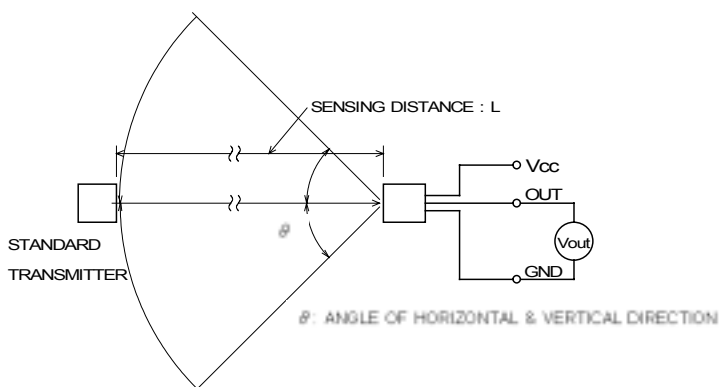


Fig.3 TEST SYSTEM

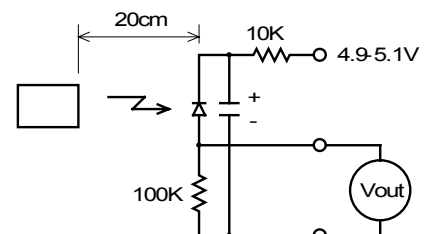
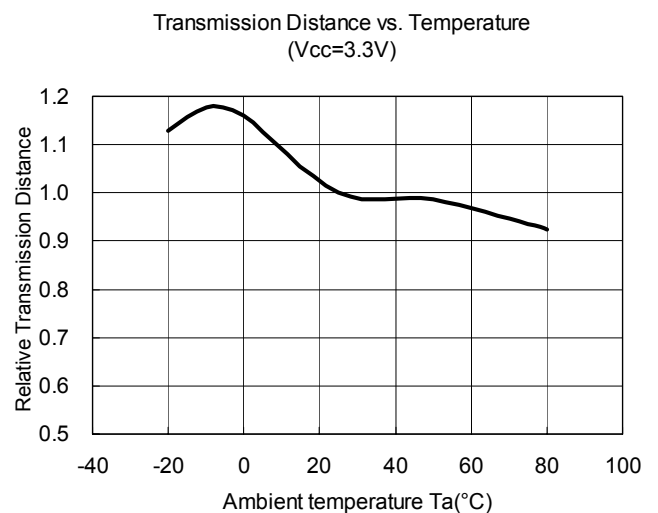
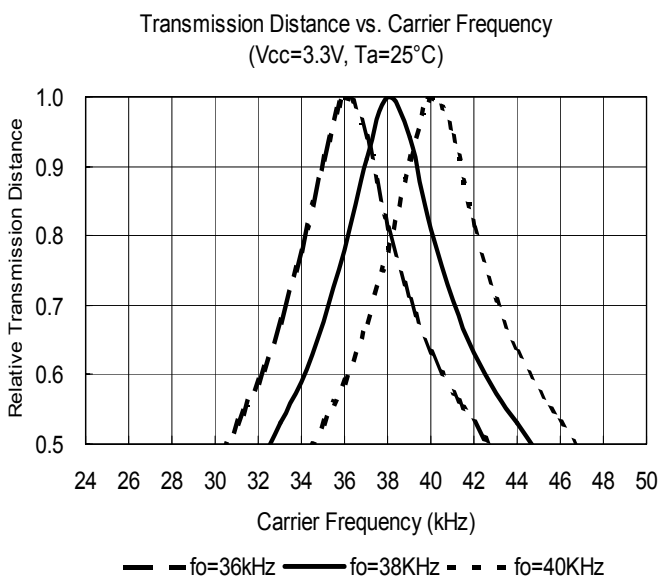
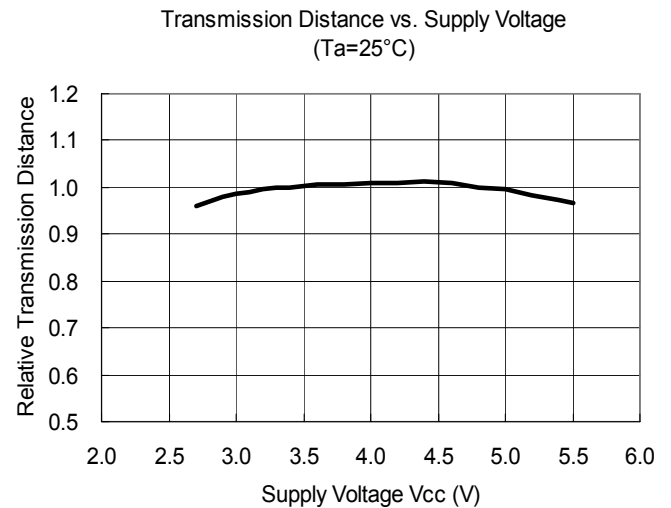
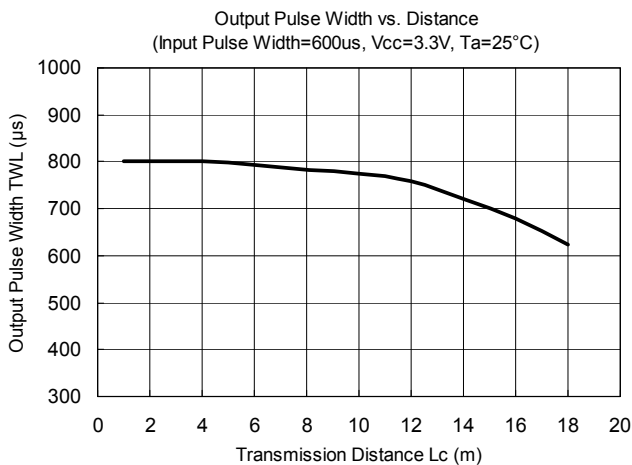
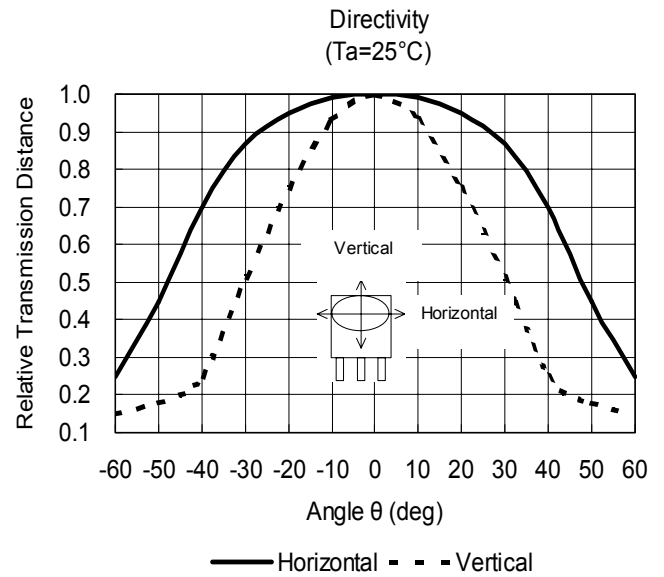
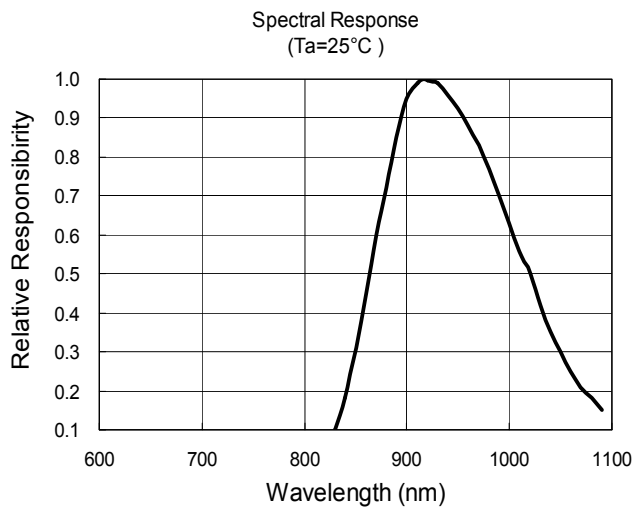


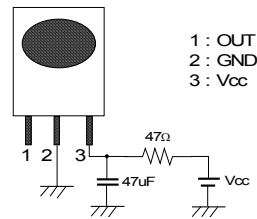
Fig.2 STD. TRANSMITTER TEST CIRCUIT

## ■ TYPICAL CHARACTERISTICS



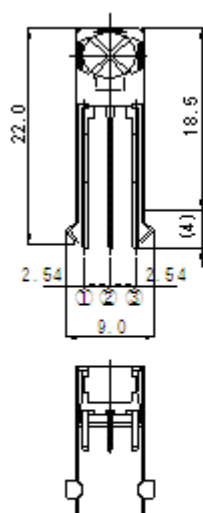
# NJL35V/38H000

## RECOMMENDED APPLICATION CIRCUIT

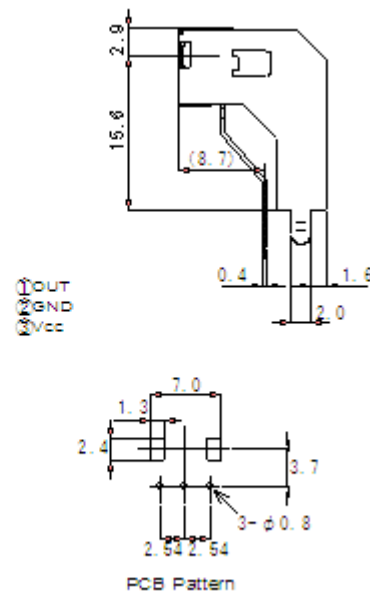


RC Filter should be connected closely between Vcc pin and GND pin.

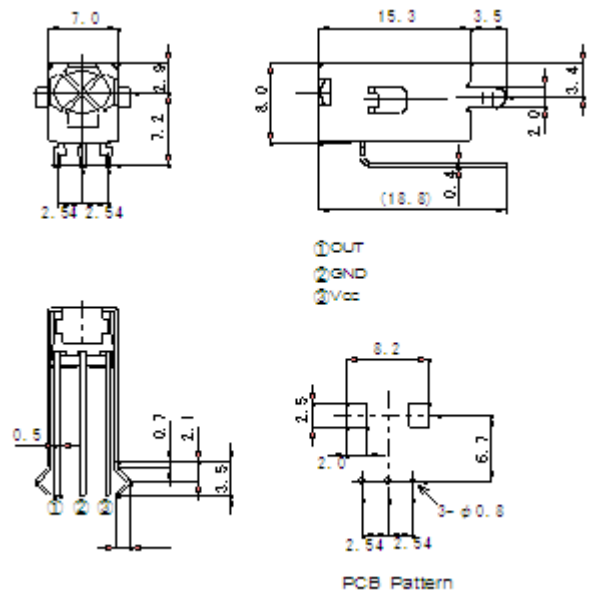
## OUTLINE



NJL35V000  
UNIT:mm



NJL35H000  
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.Tolerance is  $\pm 0.3\text{mm}$  unless otherwise noted.

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