

## INFRARED REMOTE CONTROL RECEIVER

### ■ GENERAL DESCRIPTION

NJL25V/28H000 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). NJL25V/28H000 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

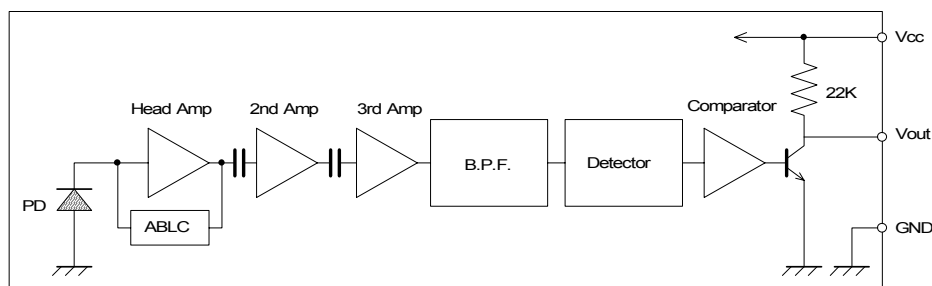
1. AV instruments such as Audio, TV, VCR, CD, MD, DVD, STB etc.
2. Home application such as Air-conditioner, Fan etc.
3. Game machine, toy etc.

### ■ LINE-UP

View Type	Side	Top
Height	15.6mm	15mm
Carrier Frequency		
fo= 36 kHz	NJL25V360	NJL28H360
36.7 kHz	NJL25V367	NJL28H367
38 kHz	NJL25V380	NJL28H380
40 kHz	NJL25V400	NJL28H400

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	—	850	$\mu s$
High Level Pulse Width	$T_{wH}$	See Test Circuit	350	—	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,

$$\lambda_p = 940\text{nm}, \Delta\lambda = 50\text{nm}.$$

Regarding photo diode,

$$\text{Sensitivity } S = 26\text{nA/Lx}$$

in case light source temperature  $2856^\circ K$ ,

$$E_e = 100\text{Lx}, V_R = 5V$$

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

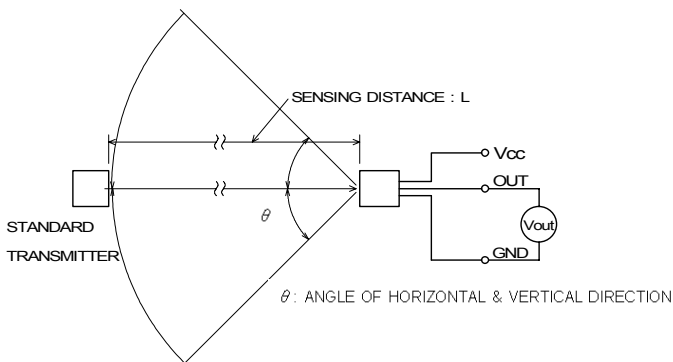


Fig.3 TEST SYSTEM

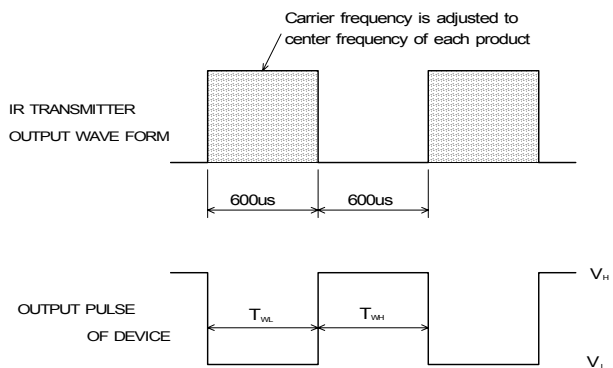


Fig.1 TRANSMITTER WAVE FORM

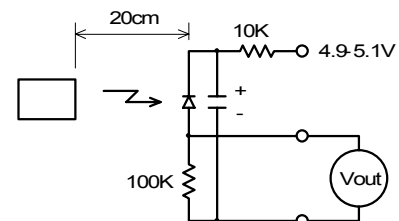
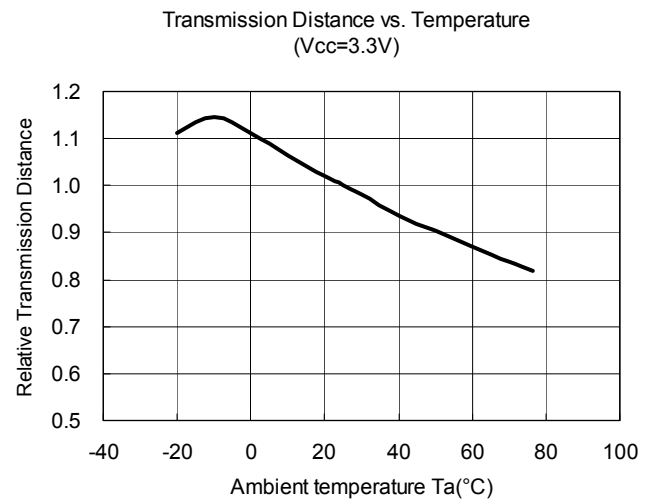
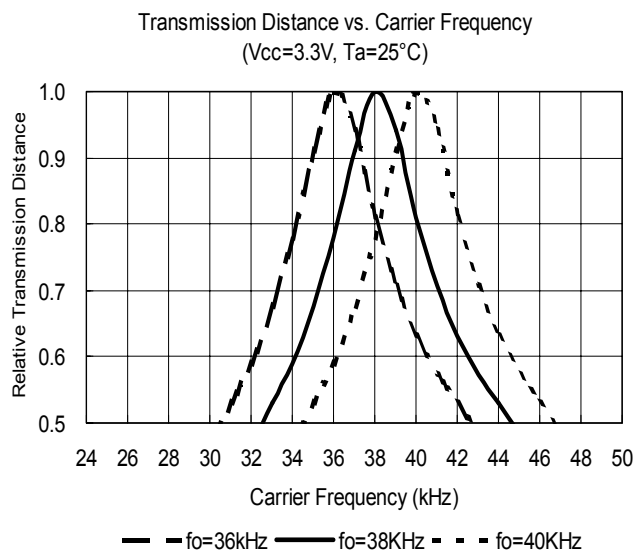
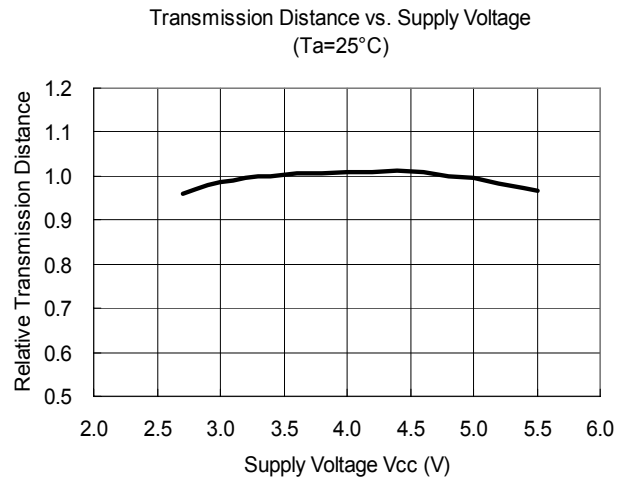
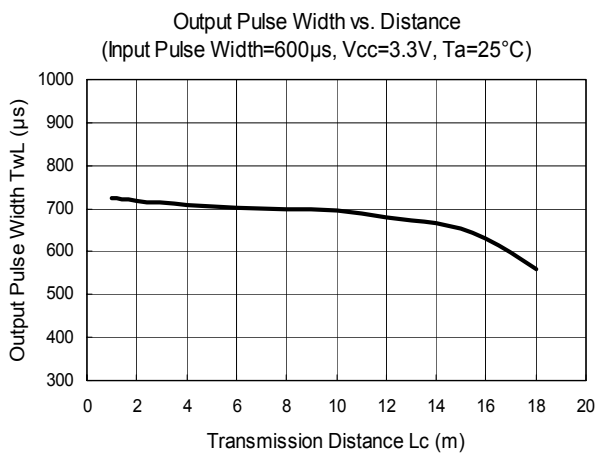
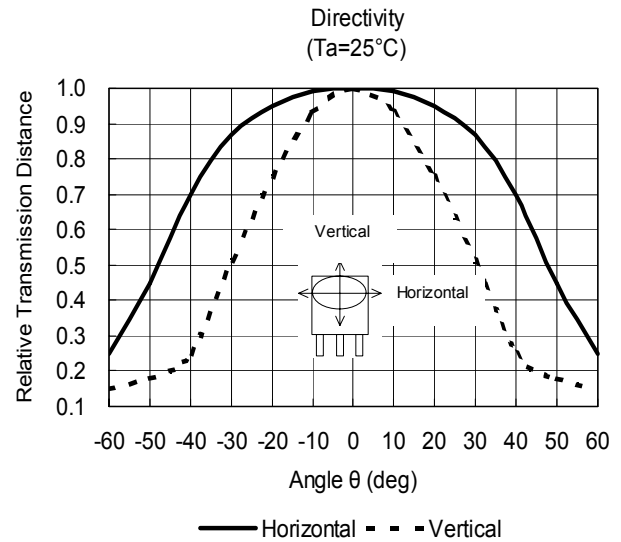
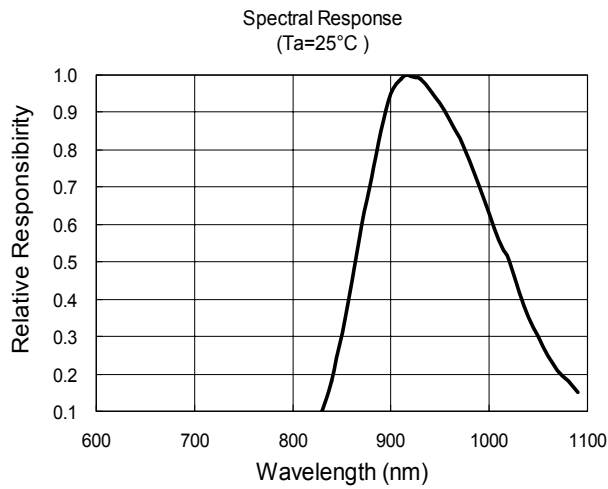
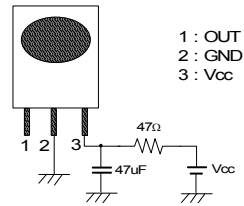


Fig.2 STD. TRANSMITTER TEST CIRCUIT

## TYPICAL CHARACTERISTICS

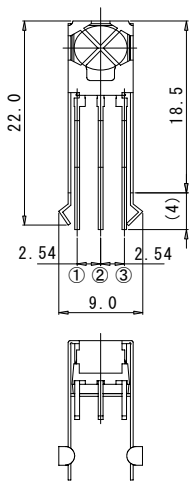


## RECOMMENDED APPLICATION CIRCUIT

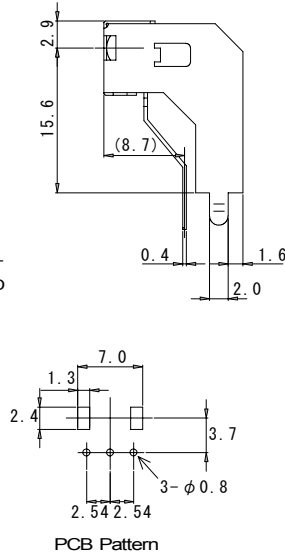


RC Filter should be connected closely between Vcc pin and GND pin.

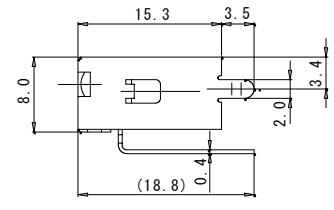
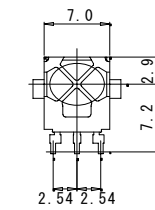
## OUTLINE



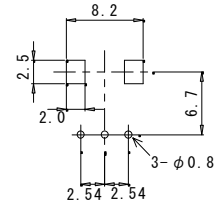
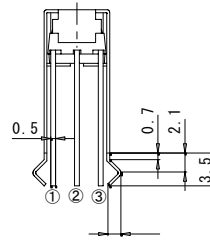
① OUT  
② GND  
③ Vcc



NJL25V000  
UNIT:mm



① OUT  
② GND  
③ Vcc



NJL28H000  
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.

### [CAUTION]

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