

# 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 0.56mA max.
- 3. Metal case type with mesh window
- 4. Line-up for various center carrier frequencies

## ■ APPLICATIONS

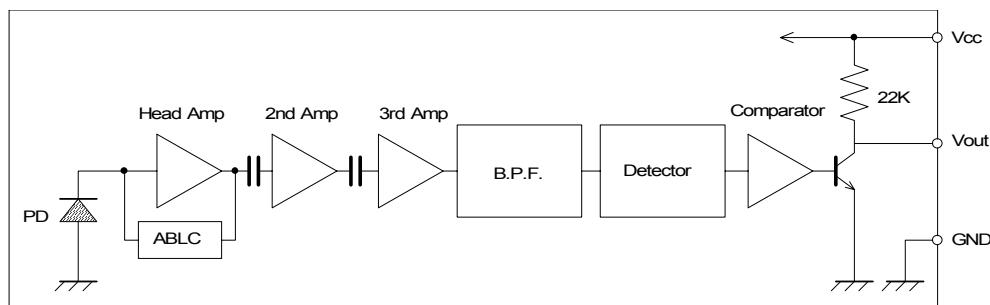
1. AV instruments such as Audio, TV, VCR, CD, MD, DVD, STB etc.
2. Home application such as Air-conditioner, Fan etc.
3. Battery operated instruments such as Toy, Camera etc.

## ■ 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	Vcc	6.3	V
Operating Temperature Range	Topr	-30 to +80	°C
Storage Temperature Range	Tstg	-40 to +85	°C
Soldering Temperature	Tsol	260 (5sec. 4.0mm from mold body)	°C

# NJL25V/28H000

## ■ RECOMMENDED OPERATING CONDITION

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

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

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Current	$I_{cc}$	No Signal Input	—	—	0.56	mA
Transmission Distance	$L_c$	Direction of Ray Axis *1	10	15	—	m
Directivity	$\theta_L$ $\theta_V$	Angle of half $L_c$ , Horizontal *2 Angle of half $L_c$ , Vertical *2	— —	45 30	— —	deg 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 Frequency	$f_0$	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 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  $2856^{\circ}K$ ,

$E_e=100Lx, V_R=5V$

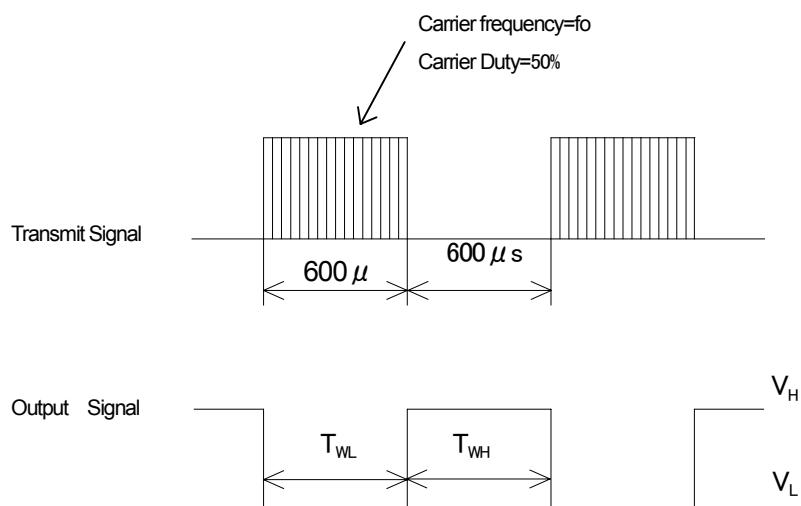


Fig.1 TRANSMITTER WAVE FORM

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

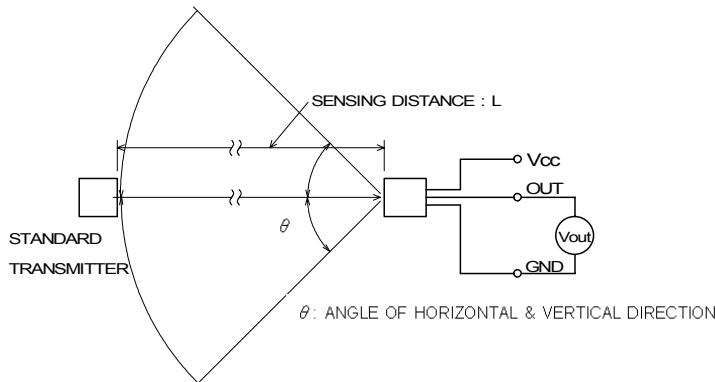


Fig.3 TEST SYSTEM

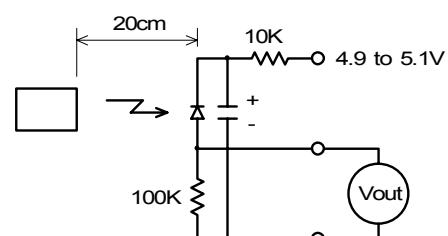


Fig.2 STD.TRANSMITTER TEST CIRCUIT

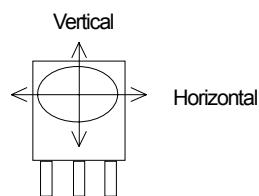
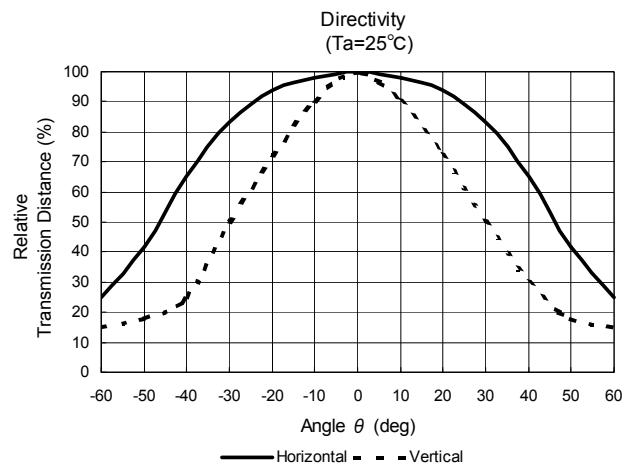
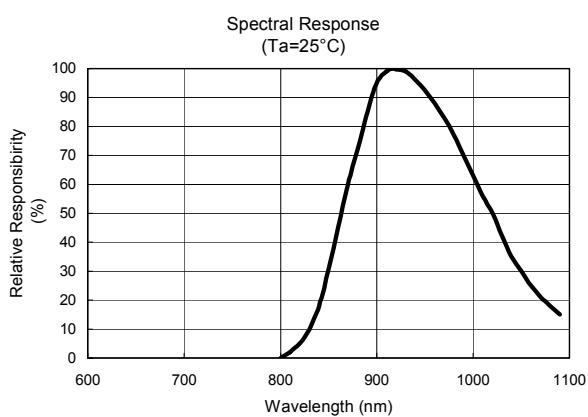
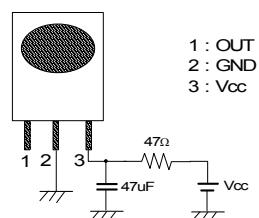


Fig.4 DIRECTIVITY

## ■ TYPICAL CHARACTERISTICS



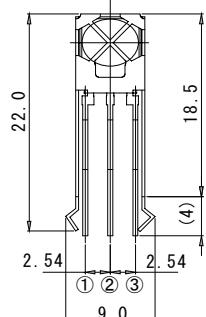
## ■ RECOMMENDED APPLICATION CIRCUIT



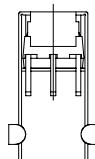
RC Filter should be connected closely between Vcc pin and GND pin.

# NJL25V/28H000

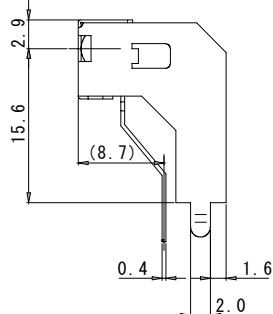
## ■ OUTLINE



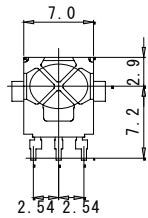
①OUT  
②GND  
③Vcc



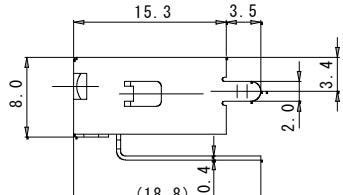
NJL25V000  
UNIT:mm



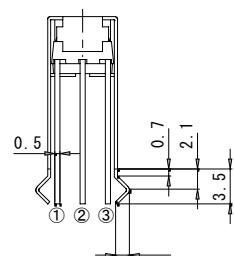
PCB Pattern



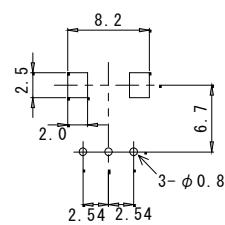
NJL28H000  
UNIT:mm



①OUT  
②GND  
③Vcc



PCB Pattern



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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