

## INFRARED REMOTE CONTROL RECEIVER

### ■ GENERAL DESCRIPTION

NJL85V/88H000 series are small and high performance receiving devices for infrared remote control system. NJL85V/88H000 series are mesh window type to improve EMI characteristic. Even under a lot of EMI noise condition, such as TV, VCR, Air-conditioner, etc., NJL65V/68H000 series can work normally.

Also, regarding the supply current, NJL85V/88H000 is lower than NJL65V/68H000. The other characteristics and packages are same as NJL65V/68H000.

### ■ FEATURES

1. Low supply current : 1mA max. in case of no input signal.
2. Metal case type with mesh window.
3. Transmission distance : 15m typ.
4. Elliptic lens to improve the characteristic against light noise from the upper and lower side.
5. Line-up for various center carrier frequencies.

### ■ APPLICATIONS

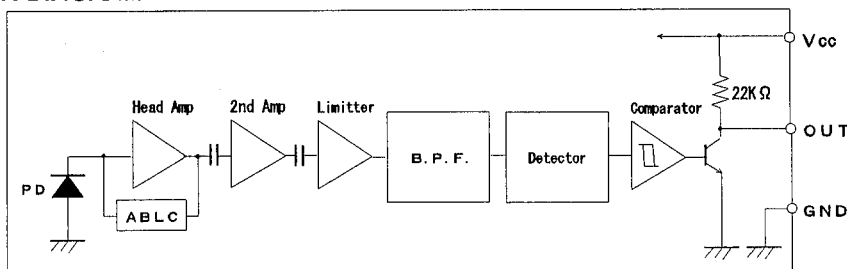
1. AV instruments such as Audio, TV, VCR, CD, MD, etc.
2. Home appliances such as Air-conditioner, Fan, etc.
3. The other equipment with wireless remote control.

### ■ LINE-UP

ViewType	Side	Top
Height	15.6 mm	15 mm
Carrier Frequency		
36 KHz	NJL85V360	NJL88H360
36.7 KHz	NJL85V367	NJL88H367
38 KHz	NJL85V380	NJL88H380
40 KHz	NJL85V400	NJL88H400

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

### ■ BLOCK DIAGRAM



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

Supply Voltage	V <sub>cc</sub>	6.3V
Operating Temperature Range	T <sub>opr</sub>	-30 °C — +85 °C
Storage Temperature Range	T <sub>stg</sub>	-40 °C — +85 °C
Soldering Temperature	T <sub>sol</sub>	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	—	0.73	1	mA
Transmission Distance	$L_c$	Direction of Ray Axis *1	10	15	—	m
Directivity	$\theta_L$	Angle of half $L_c$ , Horizontal *2	—	50	—	deg
	$\theta_V$	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	$\mu s$
High Level Pulse Width	$T_{WH}$	See Test Circuit	400	—	800	$\mu s$
Carrier Frequency	$f_o$	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 in vertical.

## TEST METHOD

Test condition is as follows:

### (1) Standard Transmitter:

Transmitting wave form 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  $2856^\circ K$ ,  $E_e = 100Lx$ ,  $VR = 5V$

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

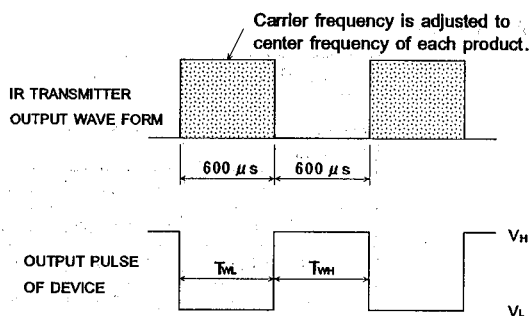
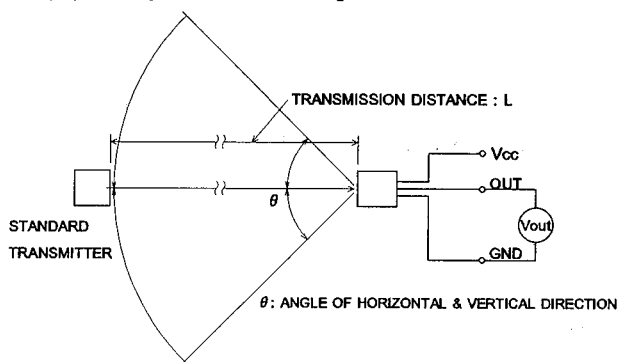


Fig. 1 TRANSMITTER WAVE FORM

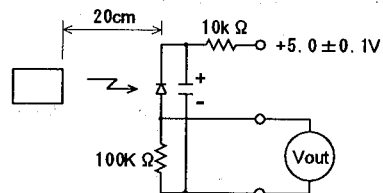
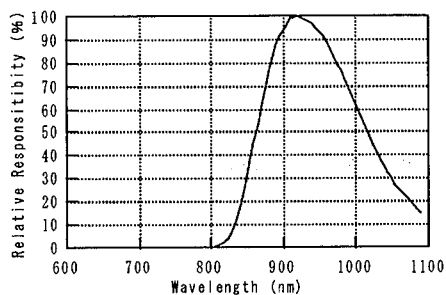


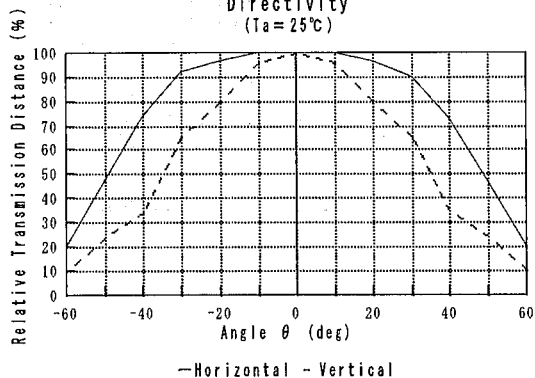
Fig. 2 STD. TRANSMITTER TEST CIRCUIT

■ TYPICAL CHARACTERISTICS

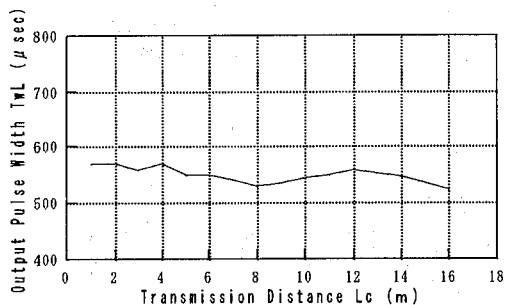
Spectral Response  
(Ta=25°C)



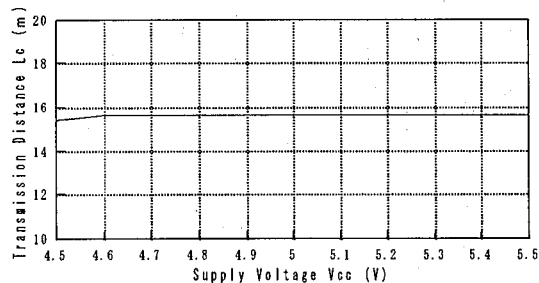
Directivity  
(Ta=25°C)



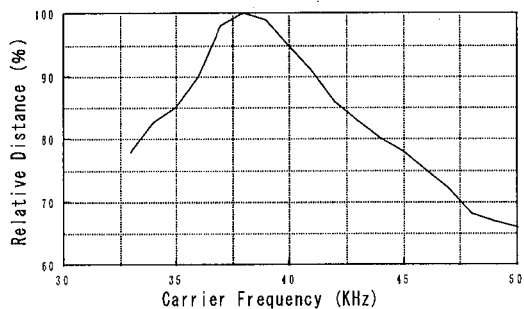
Output Pulse Width vs. Distance  
(Input Pulse Width=600 μs, Vcc=5.0V, Ta=25°C)



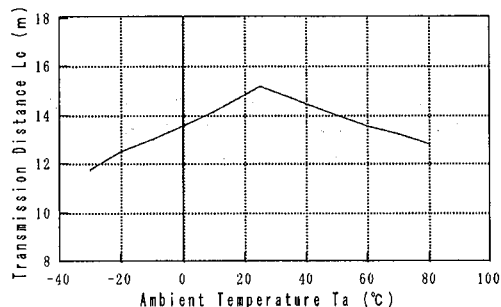
Transmission Distance vs. Supply Voltage  
(Ta=25°C)



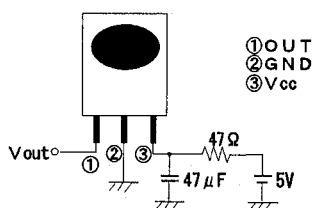
Transmission Distance vs. Carrier Frequency  
(fo=38KHz, Vcc=5.0V, Ta=25°C)



Transmission Distance vs. Temperature  
(Vcc=5.0V)

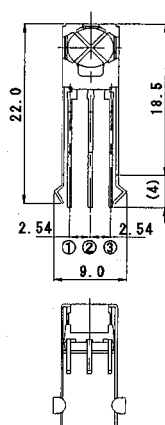


## RECOMMENDED APPLICATION CIRCUIT

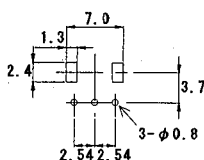


RC Filter should be connected closely between Vcc pin and GND pin.

## OUTLINE

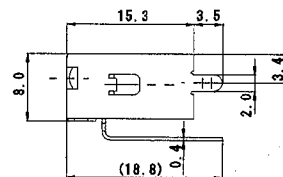
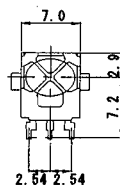


① OUT  
② GND  
③ Vcc

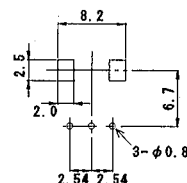
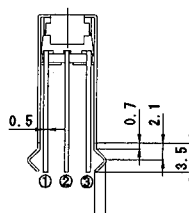


PCB Pattern

NJL85V000  
UNIT : mm



① OUT  
② GND  
③ Vcc



PCB Pattern

NJL88H000  
UNIT : mm

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

## MEMO

**[CAUTION]**

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