

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

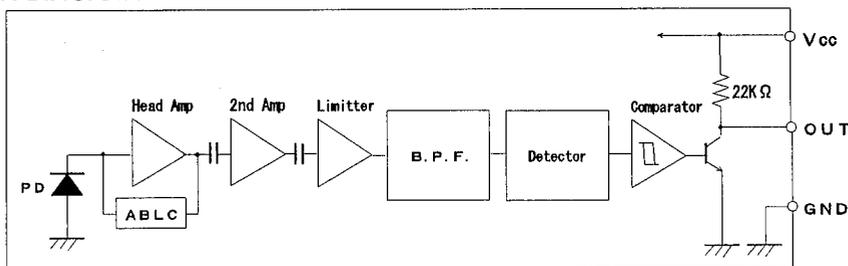
1. AV instruments such as Audio, TV, VCR, CD, MD, etc.
2. Home appliances such as Air-conditioner, Fan, etc.
3. The other equipment with wireless remote control.

■ 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_{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

3

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	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
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.

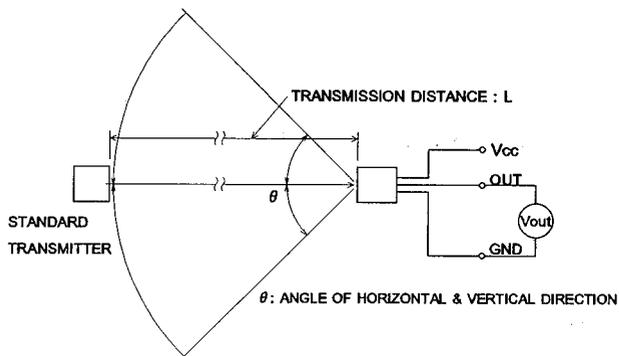


Fig. 3 TEST SYSTEM

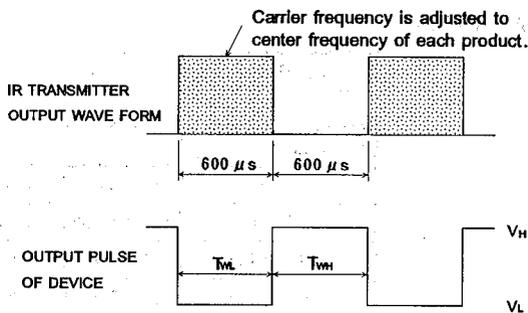


Fig. 1 TRANSMITTER WAVE FORM

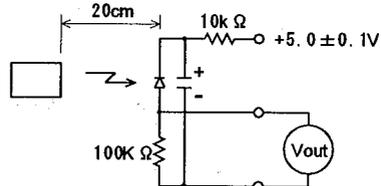
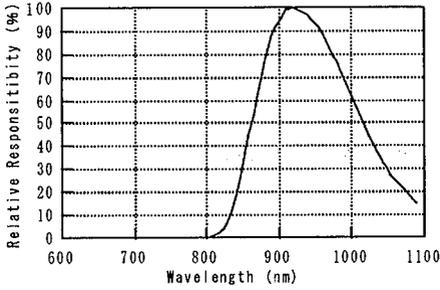


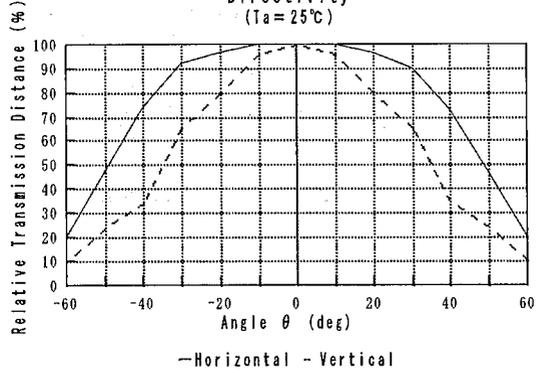
Fig. 2 STD. TRANSMITTER TEST CIRCUIT

■ TYPICAL CHARACTERISTICS

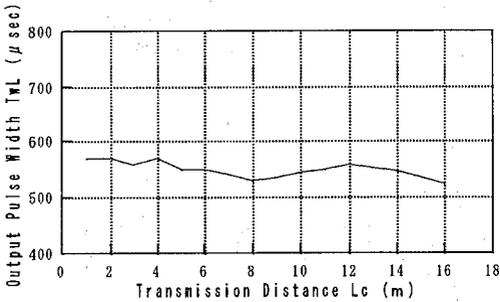
Spectral Response
($T_a = 25^\circ\text{C}$)



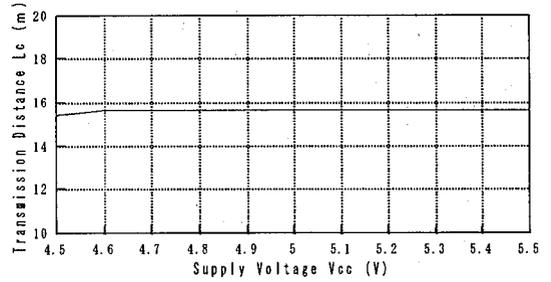
Directivity
($T_a = 25^\circ\text{C}$)



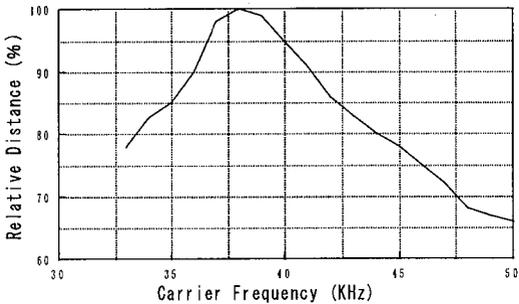
Output Pulse Width vs. Distance
(Input Pulse Width = $600\ \mu\text{s}$, $V_{cc} = 5.0\text{V}$, $T_a = 25^\circ\text{C}$)



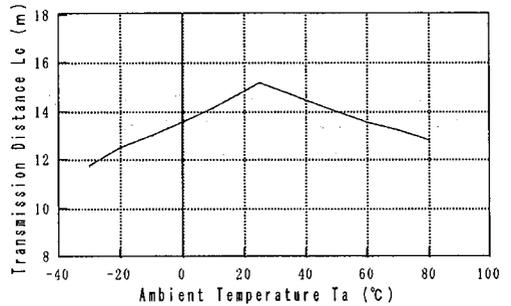
Transmission Distance vs. Supply Voltage
($T_a = 25^\circ\text{C}$)



Transmission Distance vs. Carrier Frequency
($f_0 = 38\text{KHz}$, $V_{cc} = 5.0\text{V}$, $T_a = 25^\circ\text{C}$)

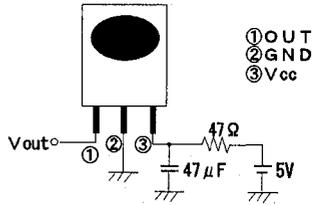


Transmission Distance vs. Temperature
($V_{cc} = 5.0\text{V}$)



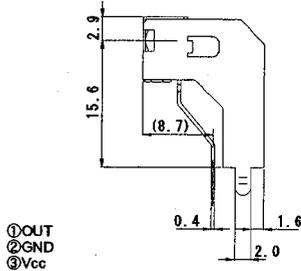
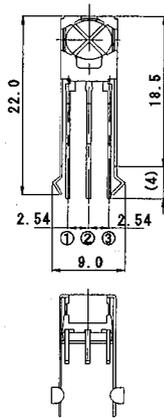
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RECOMMENDED APPLICATION CIRCUIT



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

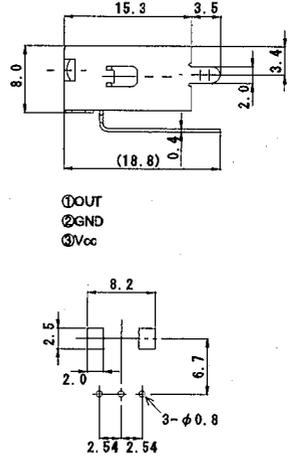
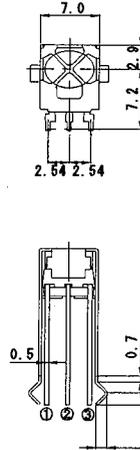
OUTLINE



①OUT
②GND
③Vcc

PCB Pattern

NJL85V000
UNIT : mm



①OUT
②GND
③Vcc

PCB Pattern

NJL88H000
UNIT : mm

1. Tolerance is ± 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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