INFRARED REMOTE CONTROL RECEIVER

■ GENERAL DESCRIPTION

NJL80H/V000 series are small and high performance receiving devices for infrared remote control system. Regarding the supply current, NJL80H/V000 is lower than NJL60H/V000. The other characteristics and packages are same as NJL60H/V000.

■ FEATURES

1. Low supply current : 1mA max. in case of no input signal.
2. Mold type and metal case type to meet the design of front panel.
3. Elliptic lens to improve the characteristic against light noise from the upper and lower side.
4. Line-up for various center carrier frequencies.

■ APPLICATIONS

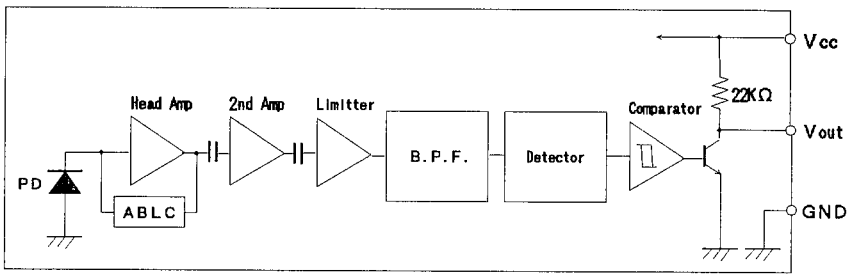
1. AV instruments such as Audio, TV, VCR, CD, MD, etc.
2. Home appliances such as Air-conditioner, Fan, etc.
3. The other equipment with wireless remote control.

■ LINE-UP

Mold/ Metal Case	Mold Type		Metal Case Type		
View	Top	Side	Top		
Height / Carrier Frequency	5.4 mm	6.3 mm	8 mm	11 mm	15 mm
36 KHz	NJL81H360	NJL81V360	NJL82H360	NJL83H360	NJL84H360
36.7 KHz	NJL81H367	NJL81V367	NJL82H367	NJL83H367	NJL84H367
38 KHz	NJL81H380	NJL81V380	NJL82H380	NJL83H380	NJL84H380
40 KHz	NJL81H400	NJL81V400	NJL82H400	NJL83H400	NJL84H400

※ 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

■ RECOMMENDED OPERATING CONDITION

Supply Voltage Range V_{CC} 4.5V — 5.5V

■ ELECTRO-OPTICAL CHARACTERISTICS (V_{CC}= 5.0V, T_a = 25 °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	8	16	—	m
Directivity	θ_L	Angle of half Lc, Horizontal *2	—	50	—	deg
	θ_V	Angle of half Lc, 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
Center 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 Vout 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 °K, Ee = 100Lx, VR = 5V

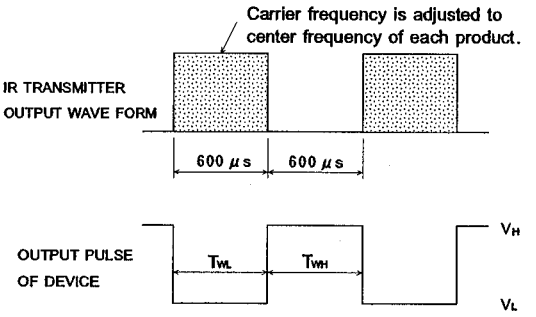


Fig. 1 TRANSMITTER WAVE FORM

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

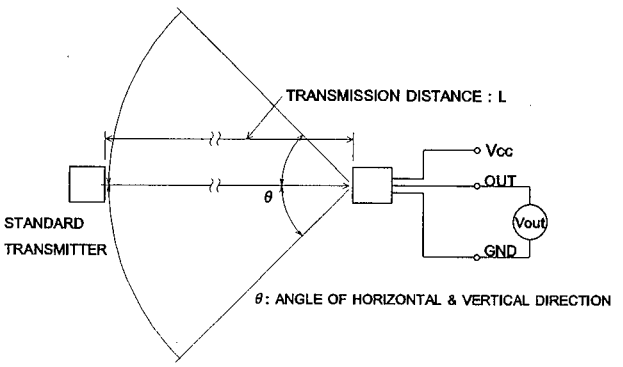


Fig. 3 TEST SYSTEM

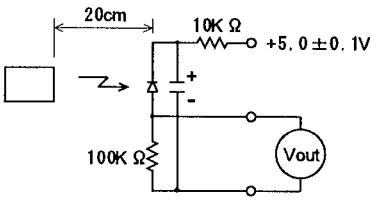
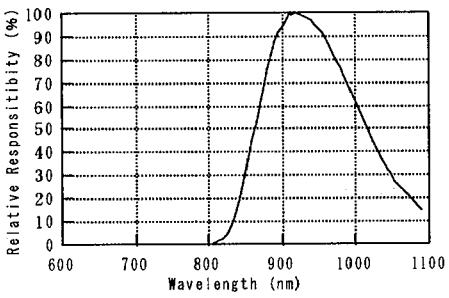


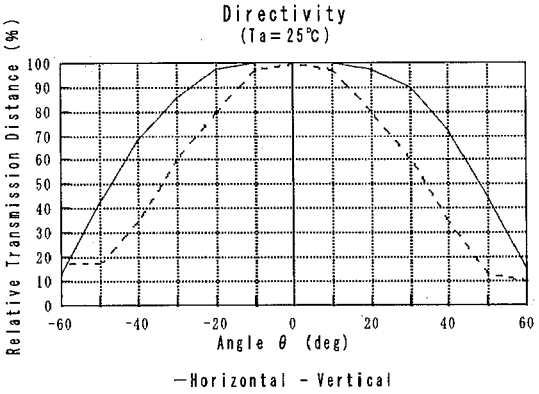
Fig. 2 STD. TRANSMITTER TEST CIRCUIT

■ TYPICAL CHARACTERISTICS

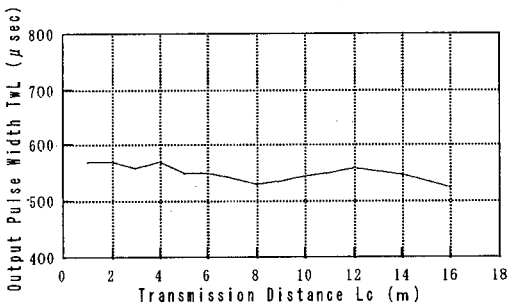
Spectral Response
(Ta=25℃)



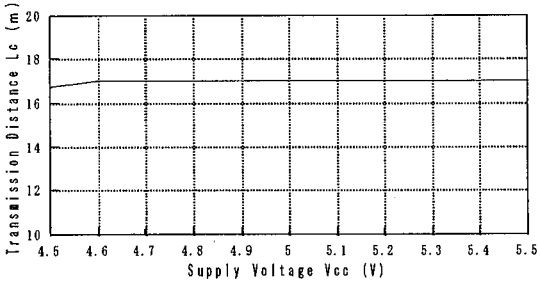
Directivity
(Ta=25℃)



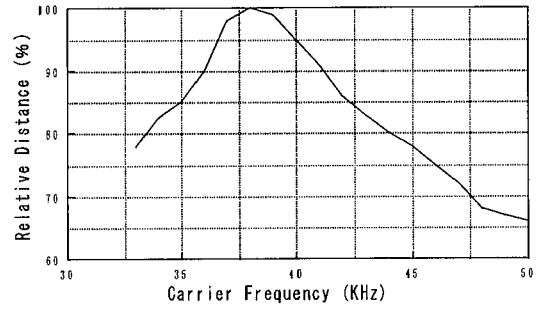
Output Pulse Width vs. Distance
(Input Pulse Width=600μs, Vcc=5.0V, Ta=25℃)



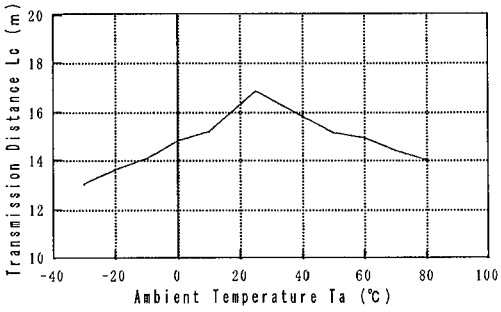
Transmission Distance vs. Supply Voltage
(Ta=25℃)



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



Transmission Distance vs. Temperature
(Vcc=5.0V)



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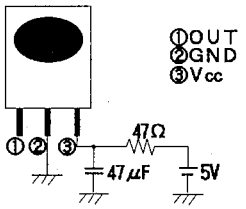
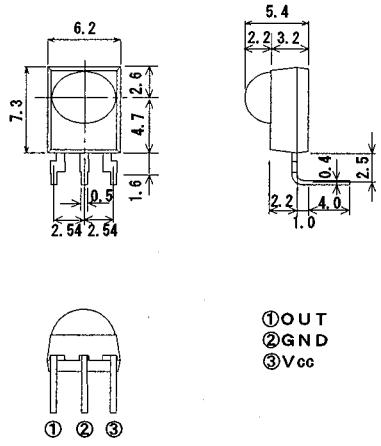
■ RECOMMENDED APPLICATION CIRCUIT

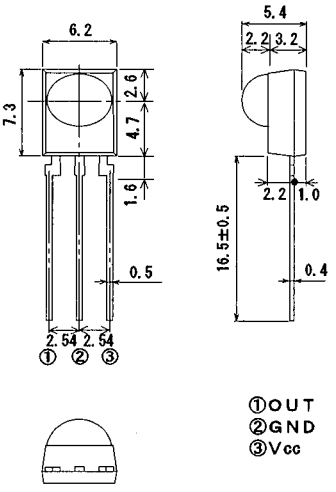


RC Filter should be connected closely between Vcc pin and GND pin.

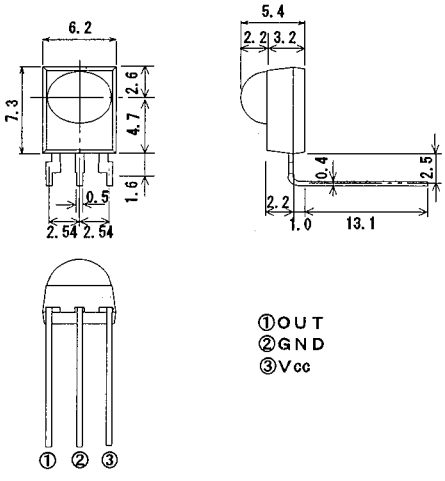
■ OUTLINE



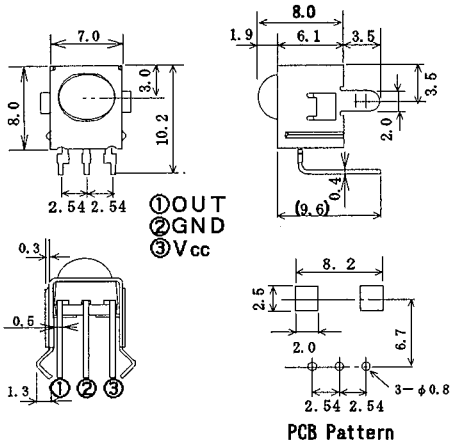
NJL81H000
UNIT : mm



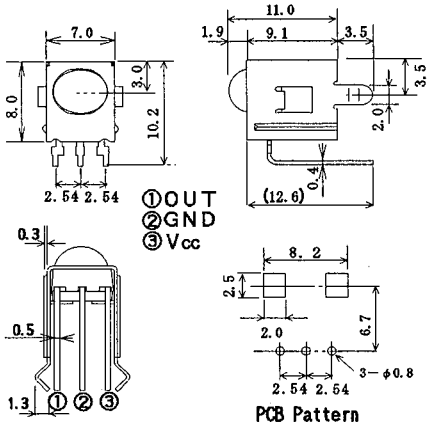
NJL81V000
UNIT : mm



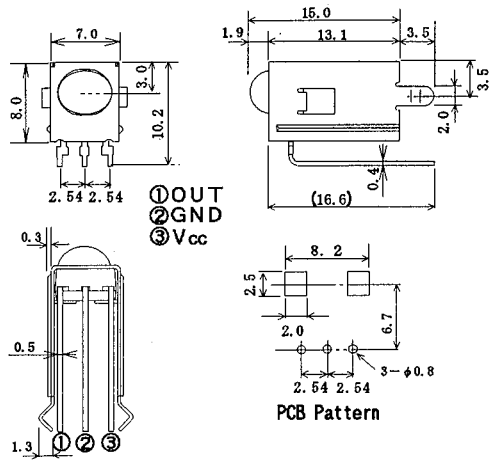
NJL81H000F3
UNIT : mm



NJL82H000
UNIT : mm



NJL83H000
UNIT : mm



NJL84H000
UNIT : mm

1. Tolerance is ± 0.3mm unless otherwise noted.

2. Ground metal case on PCB. Metal case is not connected to GND pin inside.

MEMO