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. Vcc=3.3V
3. Metal case type with mesh window
4. Line-up for various center carrier frequencies

■ APPLICATIONS

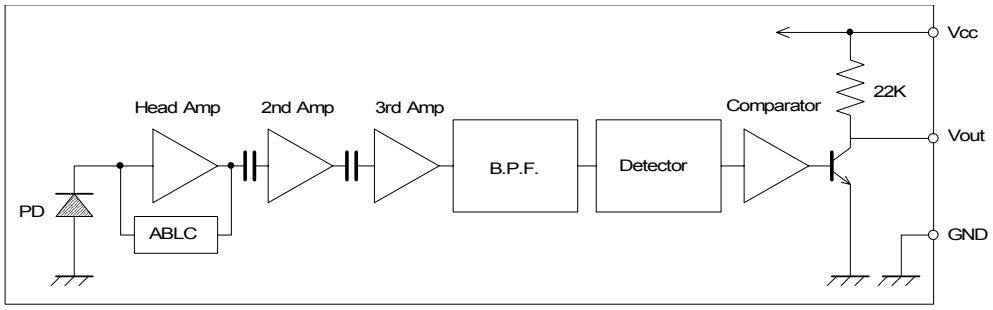
1. AV instruments such as Audio, TV, VCR, CD, MD, DVD, STB etc.
2. Home application such as Air-conditioner, Fan etc.
3. Game machine, toy etc.

■ LINE-UP

View Type	Side	Top
Height / Carrier Frequency	15.6mm	15mm
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

■ RECOMMENDED OPERATING CONDITION

Supply Voltage Range V_{CC} 2.7 V to 5.5V

■ ELECTRO-OPTICAL CHARACTERISTICS (Vcc=3.3V, Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Supply Current	Icc	No Signal Input	—	0.43	0.56	mA
Transmission Distance	Lc	Direction of Ray Axis *1	10	15	—	m
Directivity	θL	Angle of half Lc, Horizontal *2	—	45	—	deg
	θV	Angle of half Lc, Vertical *2	—	30	—	deg
Output Voltage Low	VL	No Load	—	0.2	0.5	V
Output Voltage High	VH	No Load	2.8	—	—	V
Low Level Pulse Width	TwL	See Test Circuit	400	—	850	μs
High Level Pulse Width	TwH	See Test Circuit	350	—	800	μs
Center Carrier Frequency	fo	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 Vout will be 400mVp-p.(Test circuit is shown in Fig.2)
Regarding IR LED used for transmitter,
λp=940nm, Δλ=50nm.

Regarding photo diode,
Sensitivity S=26nA/Lx
in case light source temperature2856°K,
Ee=100Lx, VR=5V

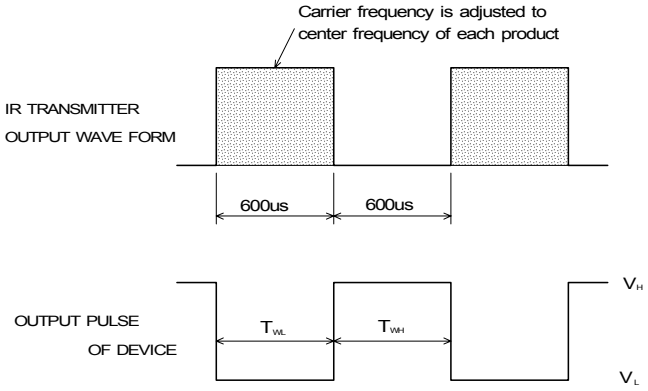


Fig.1 TRANSMITTER WAVE FORM

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

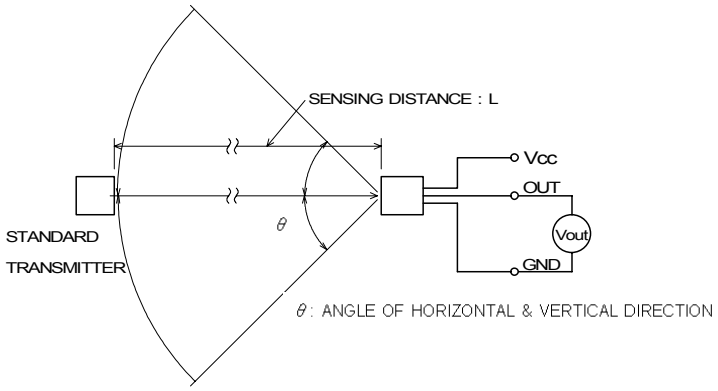


Fig.3 TEST SYSTEM

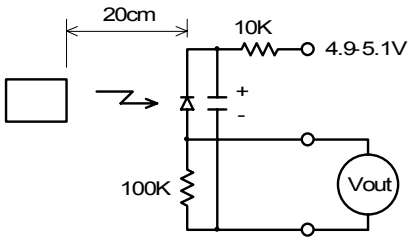
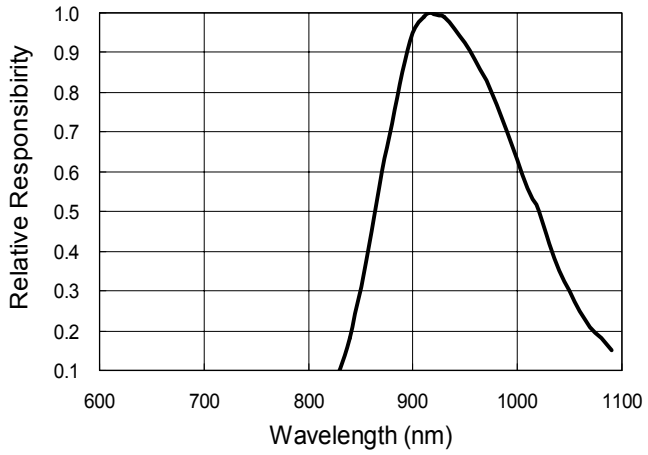


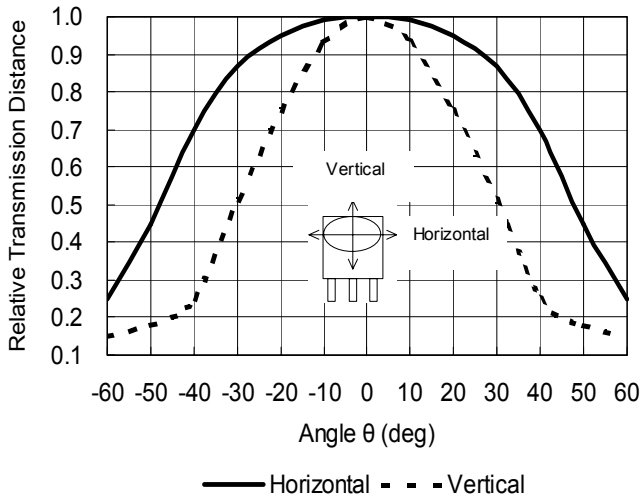
Fig.2 STD.TRANSMITTER TEST CIRCUIT

■ TYPICAL CHARACTERISTICS

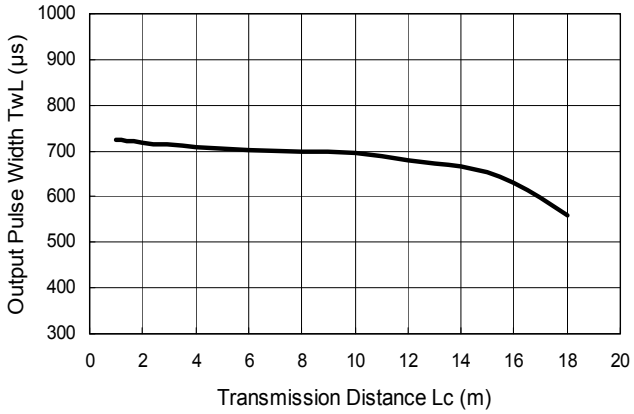
Spectral Response
(Ta=25°C)



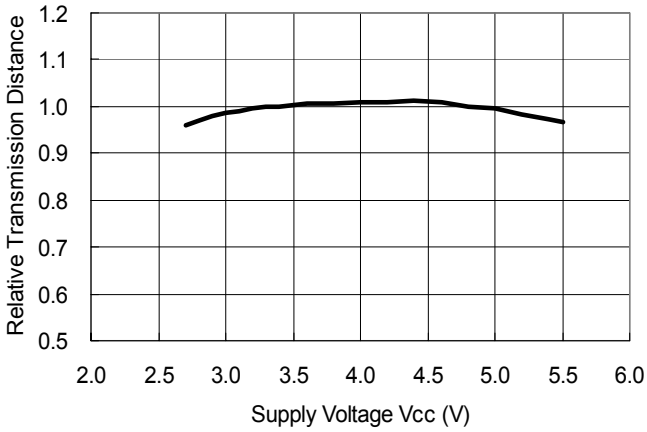
Directivity
(Ta=25°C)



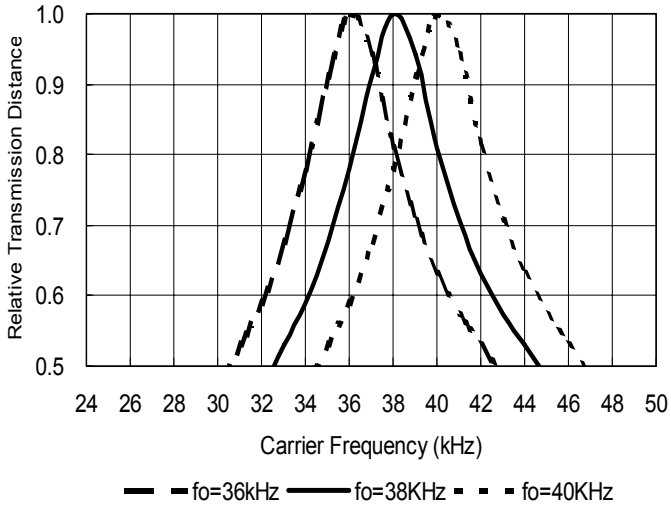
Output Pulse Width vs. Distance
(Input Pulse Width=600μs, Vcc=3.3V, Ta=25°C)



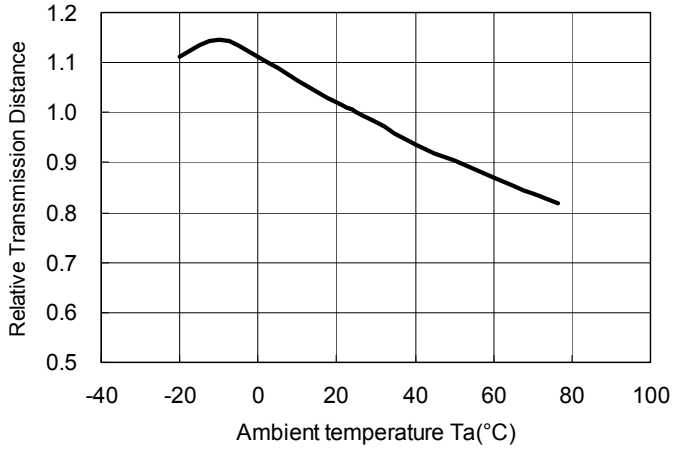
Transmission Distance vs. Supply Voltage
(Ta=25°C)



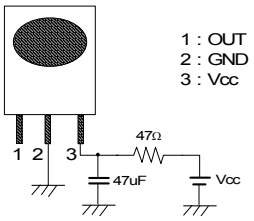
Transmission Distance vs. Carrier Frequency
(Vcc=3.3V, Ta=25°C)



Transmission Distance vs. Temperature
(Vcc=3.3V)

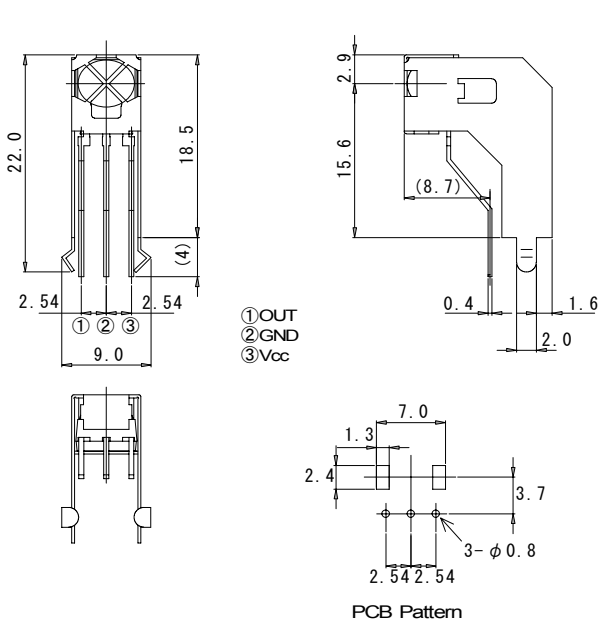


■ RECOMMENDED APPLICATION CIRCUIT

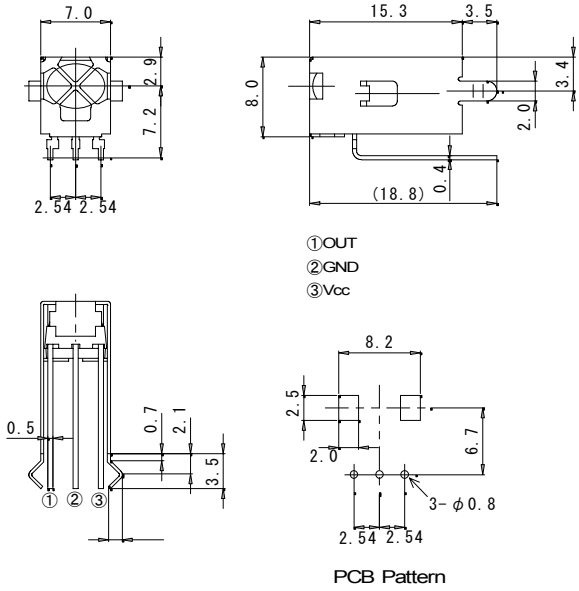


RC Filter should be connected closely between Vcc pin and GND pin.

■ OUTLINE



NJL25V000
UNIT:mm



NJL28H000
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.Tolerance is ±0.3mm unless otherwise noted.