

## Ambient Light Sensor

### ■ GENERAL DESCRIPTION

The NJL6501R-3 is the ambient light sensor with optical filter to solve the interference problem by the infrared. Also, the spectral response is close to human eye.

### ■ FEATURES

1. Peak wavelength            560 nm
2. Spectral range            350 to 650 nm
3. Photo current            270nA ±15%
4. Illuminance linearity    0.1 to 100,000 Lux    Condition :  $V_R=0V$ ,  $T_a=25^\circ C$
5. COBP                      Package size : 2.0 x 2.0 x 0.65 mm

### ■ APPLICATIONS

Cellular phone, PDA, Note PC, TV, PDP, Clock, Refrigerator, Camera, Toy, Room light, Street light, etc.  
to adjust the luminance of display  
to control ON/OFF  
Replacement of CdS

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

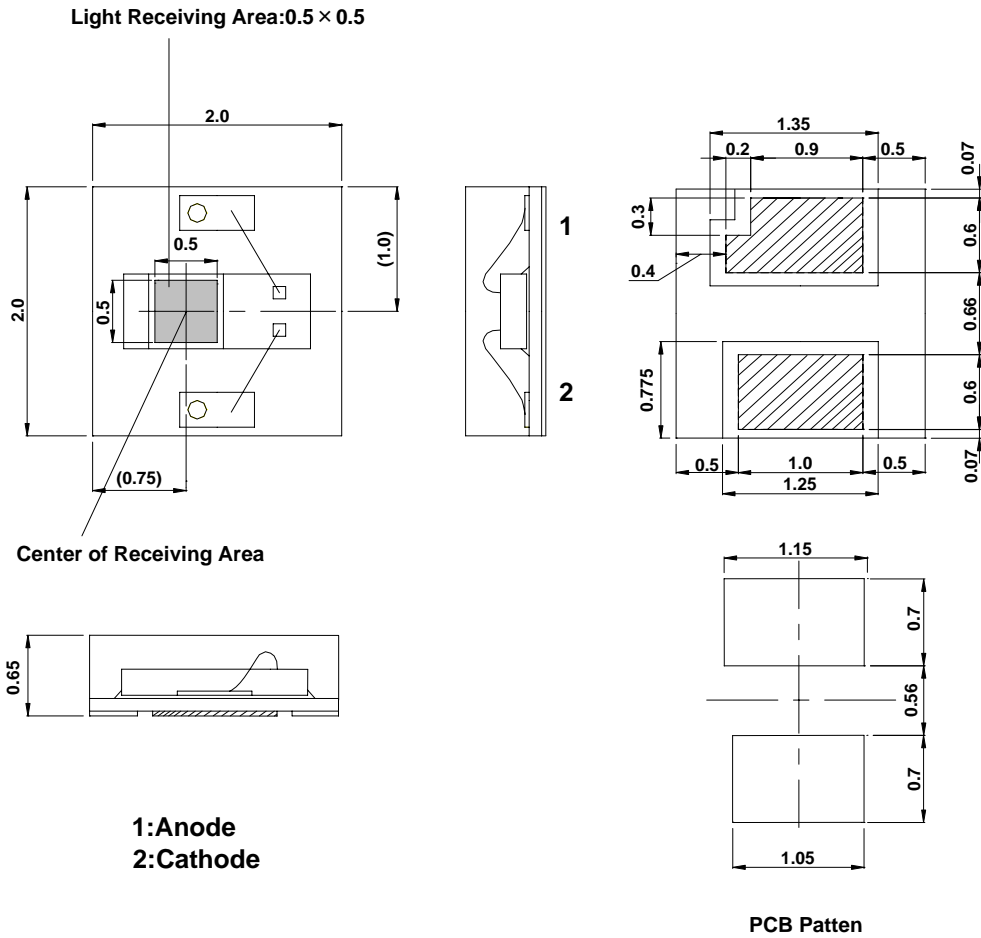
PARAMETER	SYMBOL	RATINGS	UNIT
Reverse Voltage	$V_R$	3.6	V
Operating Temperature	$T_{opr}$	-40 to +85	°C
Storage Temperature	$T_{stg}$	-40 to +100	°C
Soldering Temperature	$T_{sol}$	260	°C

### ■ ELECTRO-OPTICAL CHARACTERISTICS (Ta=25°C)

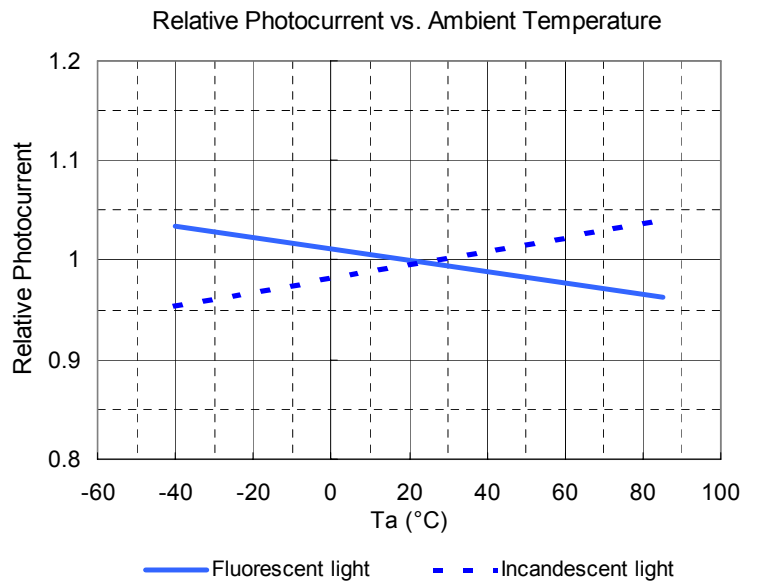
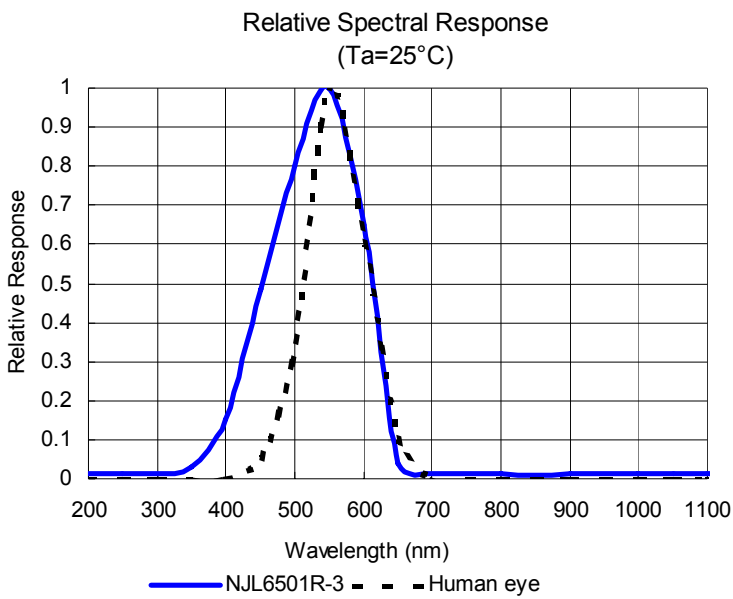
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Forward Current	$I_F$	$I_F=1mA$ , $E_v=0Lux$	—	—	0.85	V
Dark Current	$I_D$	$V_R=1V$ , $E_v=0Lux$	—	0.1	—	nA
Photo Current	$I_L$	$E_v=1000Lux$ , Fluorescent light	230	270	310	nA
	$I_{L2}/I_{L1}$	$I_{L1}$ : Fluorescent light, $I_{L2}$ : Incandescent light	—	1.4	—	
Peak Wavelength	$\lambda_P$	—	—	560	—	nm

# NJL6501R-3

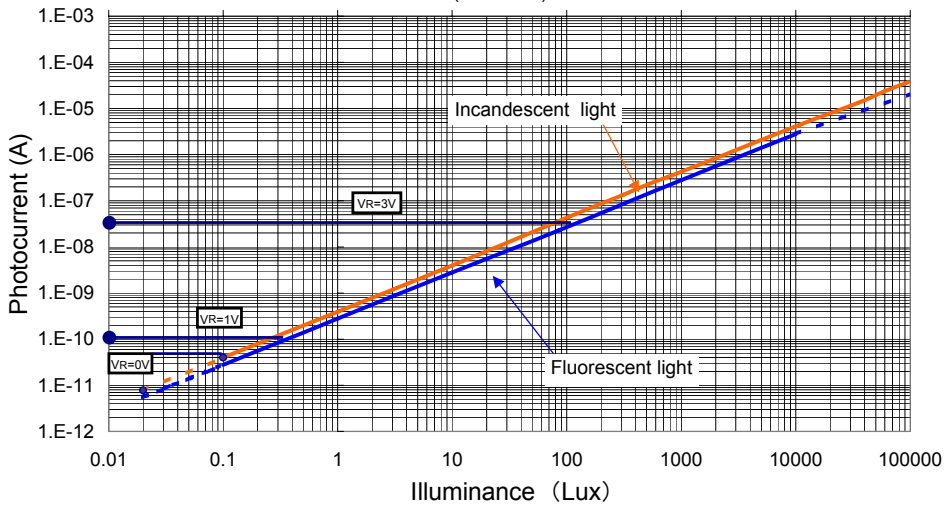
■ **OUTLINE** (TYP.) UNIT : mm



■ **TYPICAL CHARACTERISTICS**



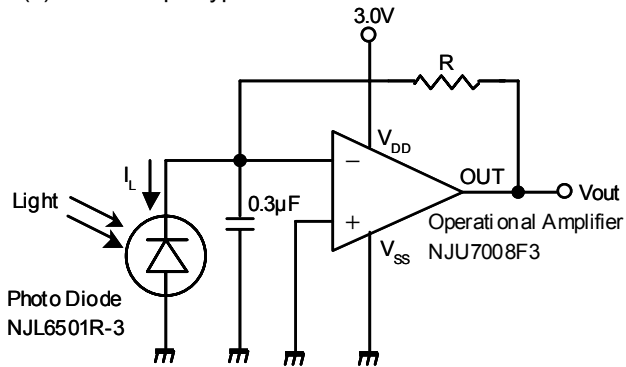
Photocurrent Linearity  
( $T_a=25^\circ\text{C}$ )



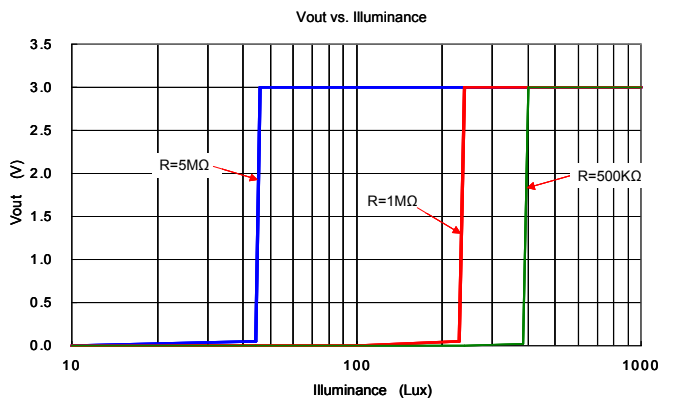
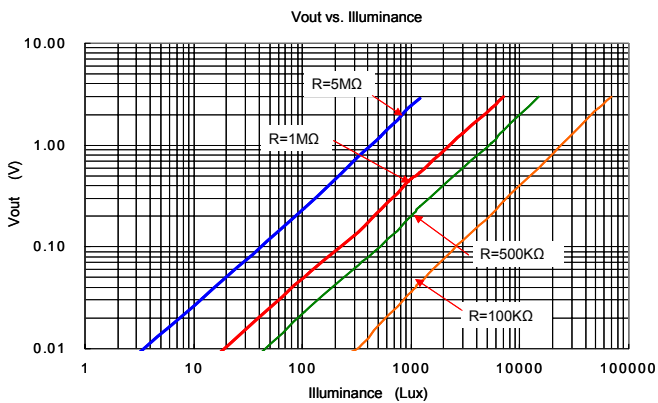
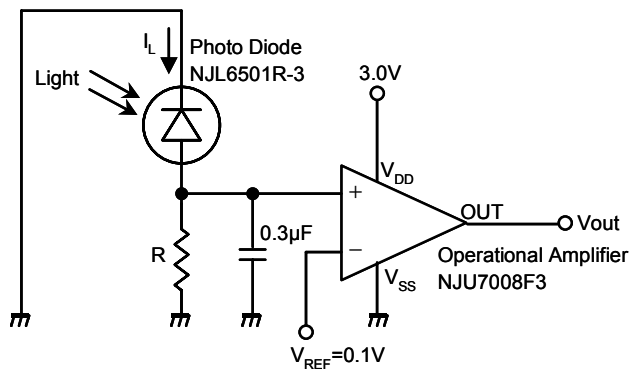
## APPLICATION CIRCUITS

Light source : Halogen lamp USHIO, JCV 100V 75W GSN

(a) Linear output type



(b) Digital output type



# NJL6501R-3

## PRECAUTION FOR HANDLING

### 1. Soldering to actual circuit board

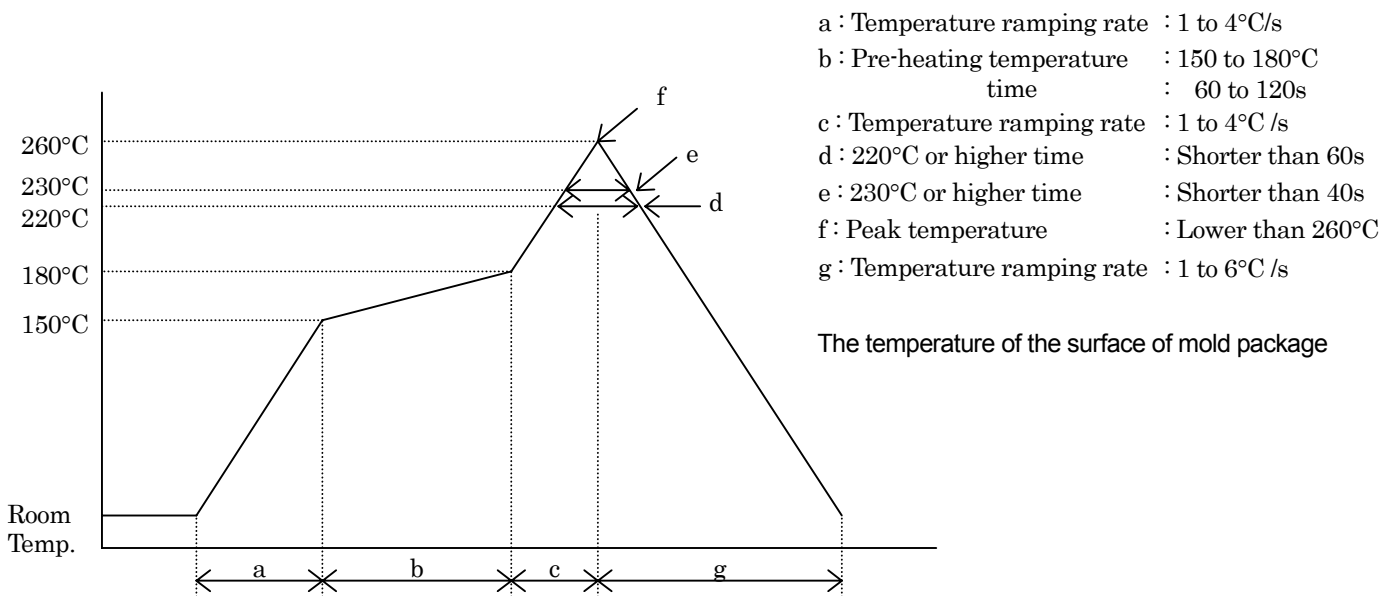
#### Soldering condition

The surface temperature of plastic package is lower than 260°C.

#### Soldering Method

##### 1) Reflow Method

Soldering to be done within twice under the recommended condition mentioned below



##### 2) Reflow Method (In case of infrared heating)

The temperature profile is same as the above

Avoid direct irradiation to the plastic package because it may absorb the Infrared Radiation and its surface temperature will be higher than the lead.

##### 3) The other method

Avoid rapid heating up like dipping the devices directly into the melting solder or vapor phase method (VPS).

Solder the device in short time as soon as possible.

If the device is heated and kept in high temperature for longer time, its reliability would be affected.

### 2. Cleaning

Avoid washing the device after soldering by reflow method.

### 3. Attention in handling

1) Treat not to touch the lens surface.

2) Avoid dust and any other foreign materials on the lens surface such as paint, bonding material, etc.

### 4. Storage

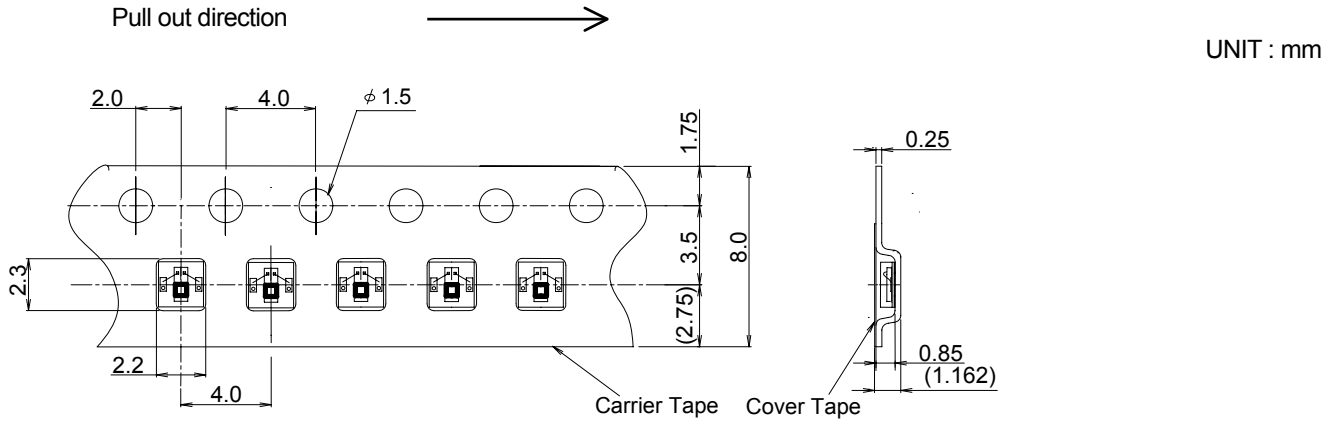
Mount the device as soon as possible after opening the envelope. In order to prevent from degradation by the moisture at the reflow process, the device is contained in damp proof packaging.

## NJL6501R-3 Taping Specification

(TE1)

### 1. Taping Size

- 1) The material of carrier tape is styrene type plastic with carbon.
- 2) The cover tape is polyester type with electro statistically prevention.
- 3) The pull out direction of the tape is as follows.

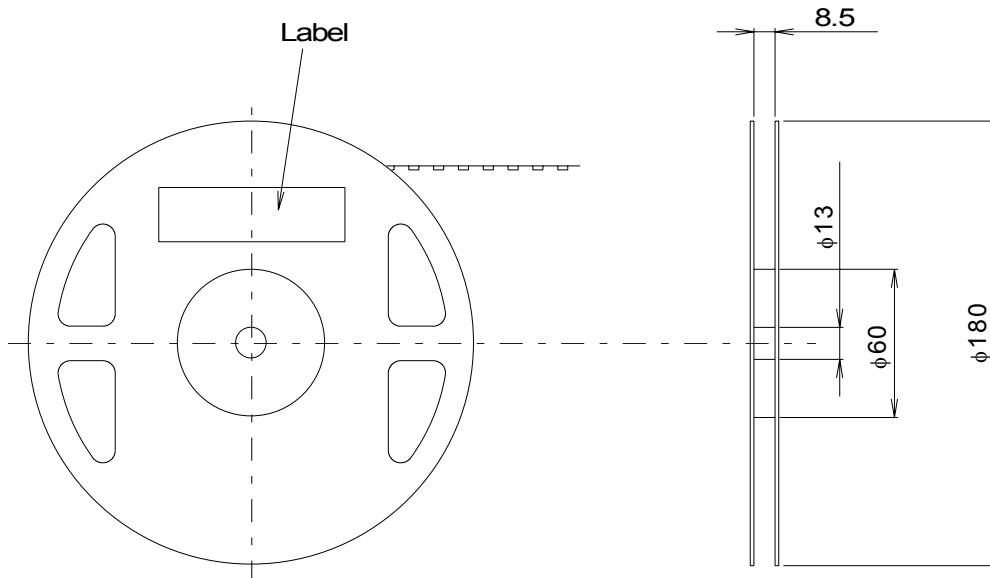


### 2. Taping Strength

The peeling-off strength is 20 to 70g in case the cover tape is pulled up from the carrier tape with opening angle 10 to 15 degree.

### 3. Packing

- 1) The taped products are rolled up on the taping reel as follows.
- 2) Rolling up specification
  - 2-1) Start rolling : Carrier tape open space is more than 20 pieces.
  - 2-2) End of rolling : Carrier tape open space is more than 20 pieces with 2 rounds of cover tape.
- 3) Taping quantity : 2,000 pieces.
- 4) Each reel is sealed in a damp proof bag with one bag of silica gel.



**[CAUTION]**

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