

## Ambient Light Sensor

### ■ GENERAL DESCRIPTION

The NJL7502L is the photo transistor which spectral response is similar to human eye.

### ■ FEATURES

1. Peak wavelength            560 nm
2. Photo current            33  $\mu$ A typ.    Condition : White LED, 100Lux
3. Lead pin package

### ■ APPLICATIONS

Room light, Toy, TV, PDP, Clock, Refrigerator, etc.

to adjust the luminance of display

to control ON/OFF

Replacement of CdS

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

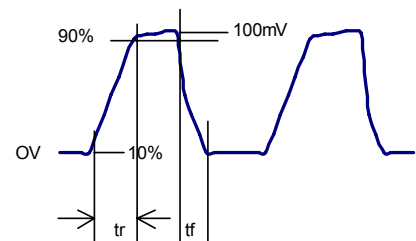
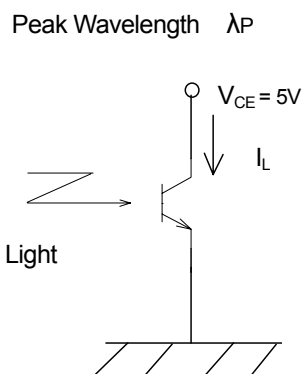
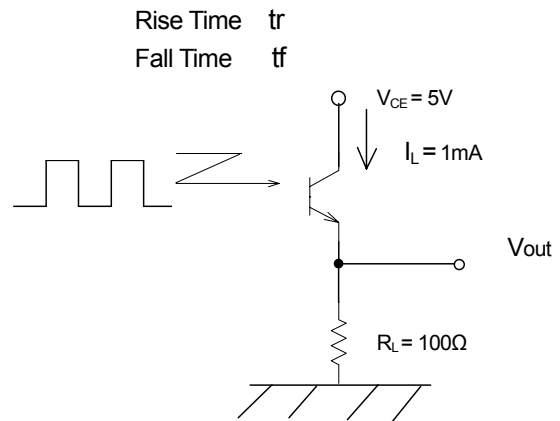
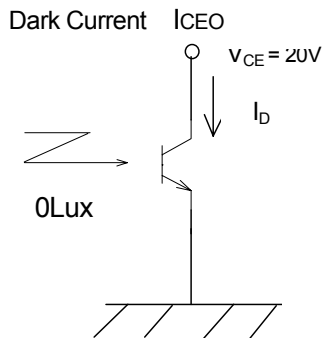
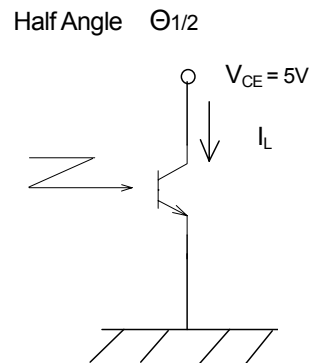
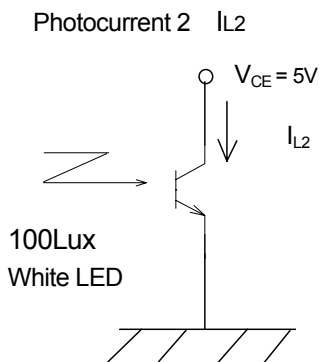
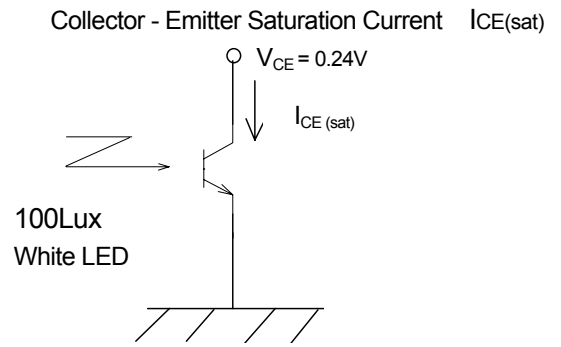
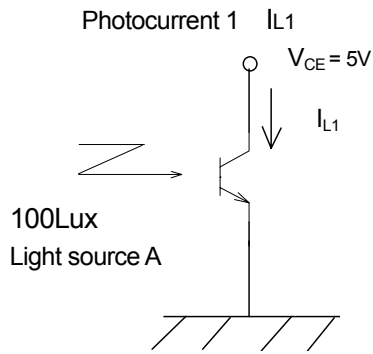
PARAMETER	SYMBOL	RATINGS	UNIT
Collector - Emitter Voltage	$V_{CEO}$	70	V
Emitter - Collector Voltage	$V_{ECO}$	10	V
Photocurrent	$I_L$	10	mA
Power Dissipation	$P_D$	150	mW
Operating Temperature	$T_{opr}$	-40 to +85	°C
Storage Temperature	$T_{stg}$	-40 to +100	°C
Soldering Temperature	$T_{sol}$	260	°C

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

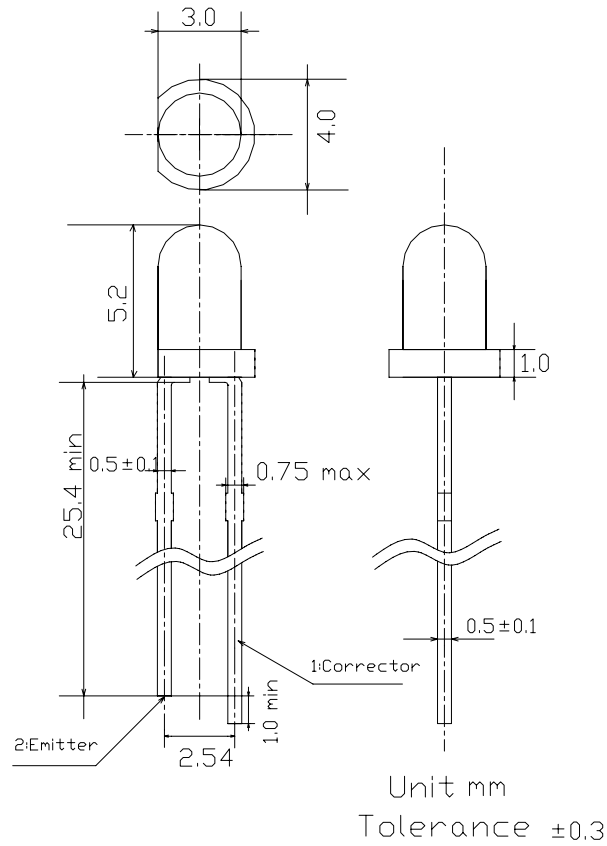
PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Photocurrent 1	$I_{L1}$	$V_{CE}=5V$ , Light source A, 100Lux	—	46	—	$\mu$ A
Photocurrent 2	$I_{L2}$	$V_{CE}=5V$ , White LED, 100Lux	15	33	73	$\mu$ A
Dark Current	$I_D$	$V_{CE}=20V$	—	—	0.1	$\mu$ A
Peak Wavelength	$\lambda_P$	—	—	560	—	nm
Collector - Emitter Saturation Current	$I_{CE(sat)}$	$V_{CE}=0.24V$ , White LED, 100Lux	10	—	—	$\mu$ A
Emitter - Collector Voltage	$V_{ECL}$	$I_{ECL}=1\mu A$ , White LED, 100Lux	9	—	—	V
Half Angle	$\Theta_{1/2}$	—	—	$\pm 20$	—	deg.
Rise Time	$t_r$	$V_{CE}=5V$ , $I_C=1mA$ , $R_L=100\Omega$	—	10	—	$\mu$ s
Fall Time	$t_f$	$V_{CE}=5V$ , $I_C=1mA$ , $R_L=100\Omega$	—	10	—	$\mu$ s

# NJL7502L

## ■ TEST CIRCUIT

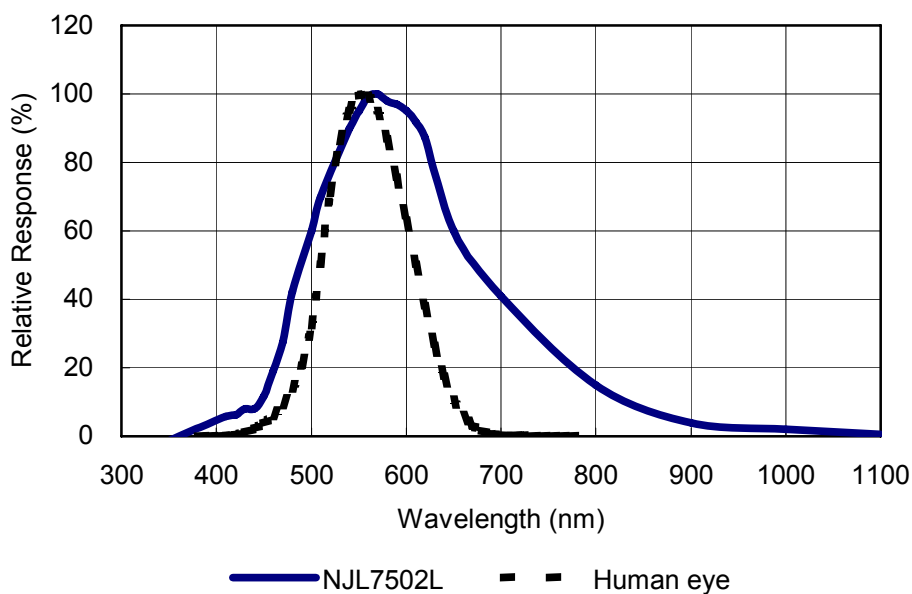


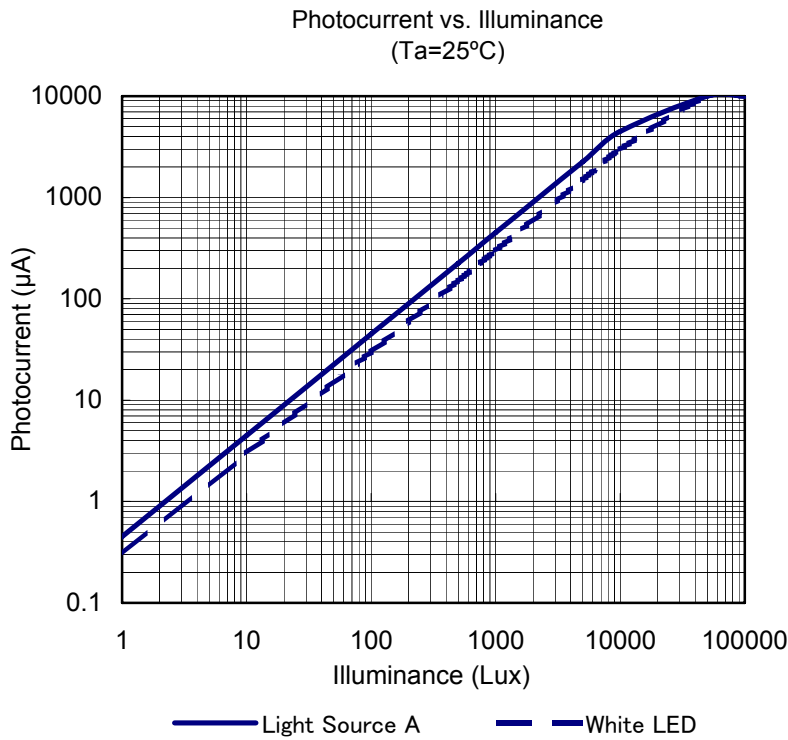
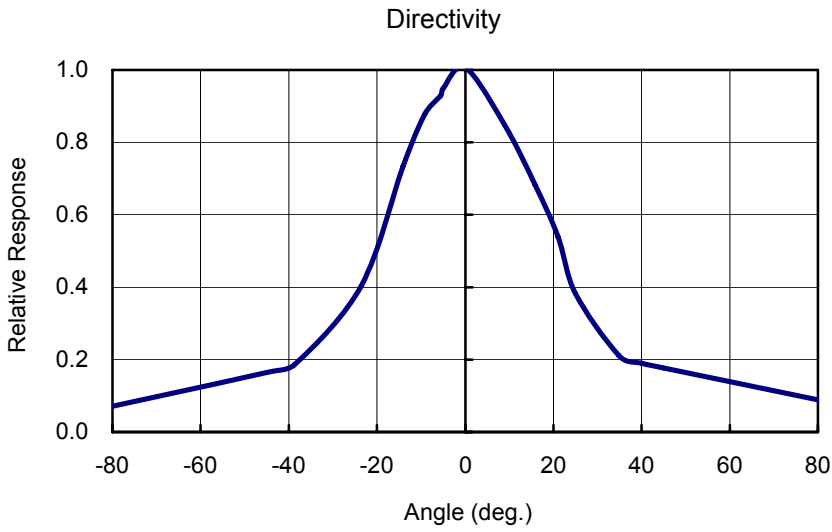
## ■ OUTLINE (TYP.)

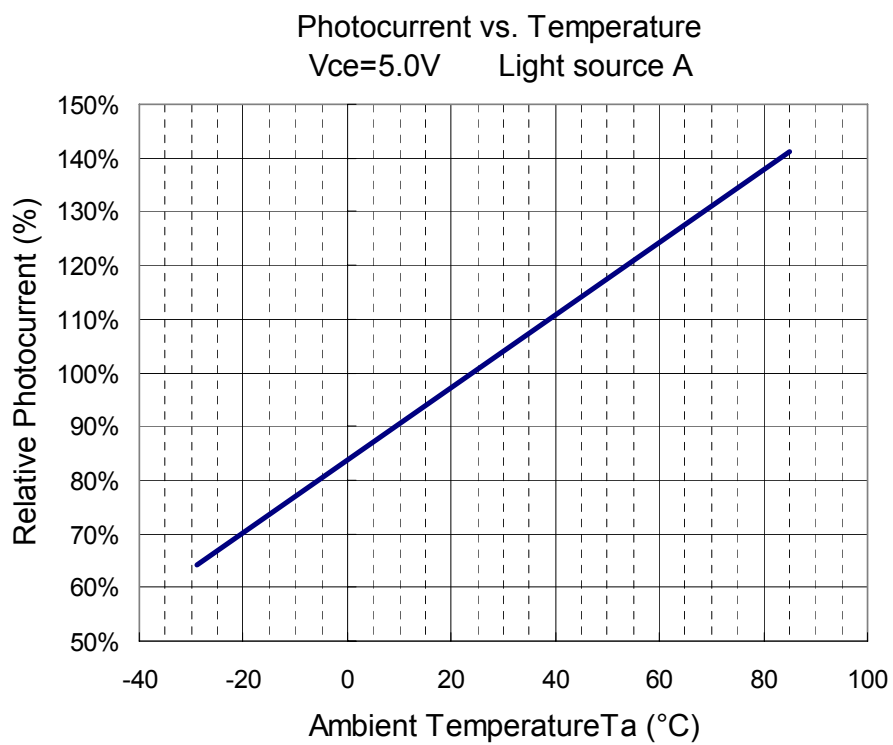
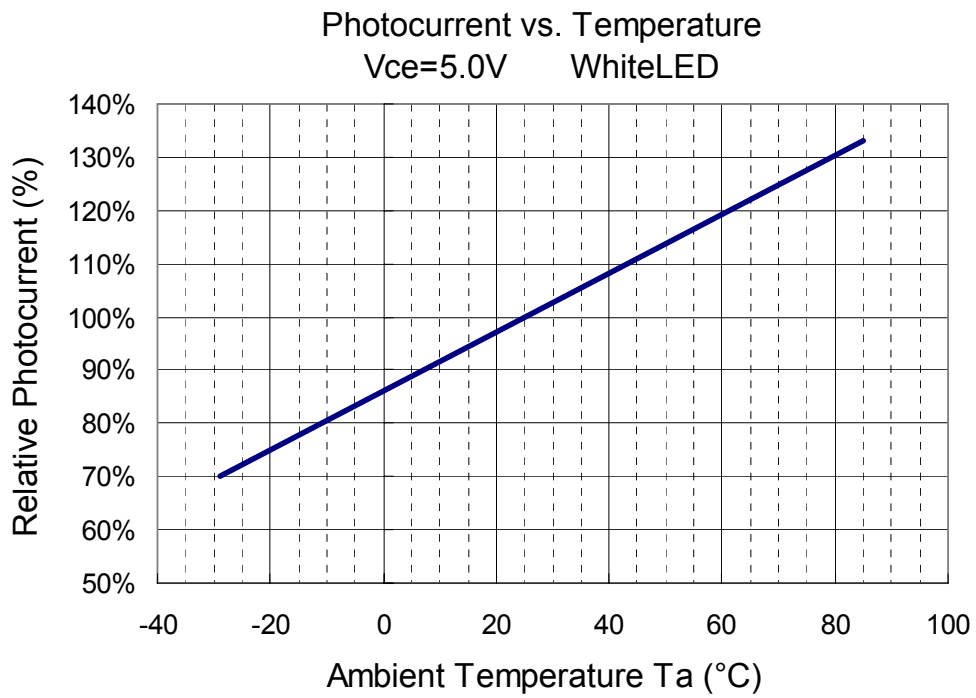


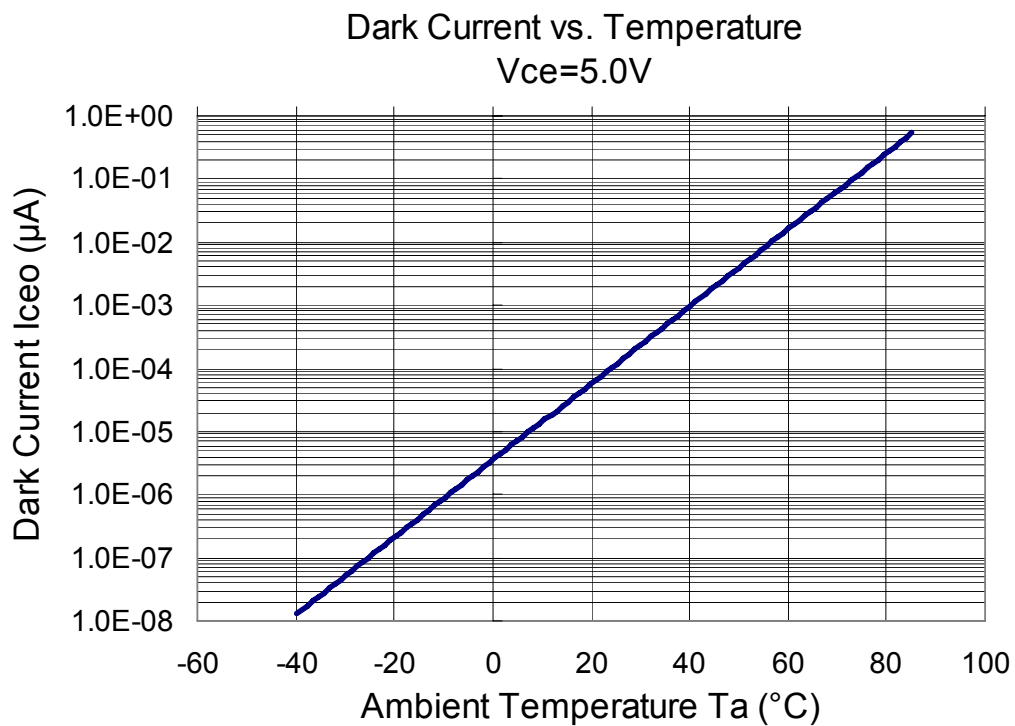
## ■ TYPICAL CHARACTERISTICS

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









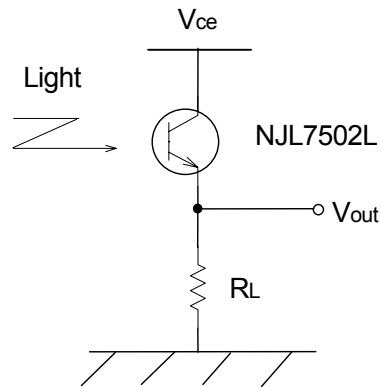
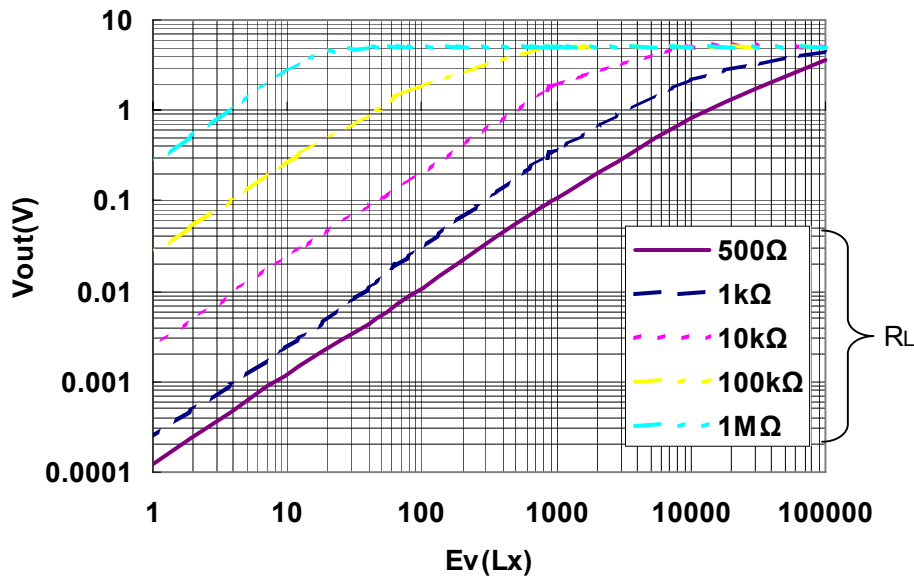
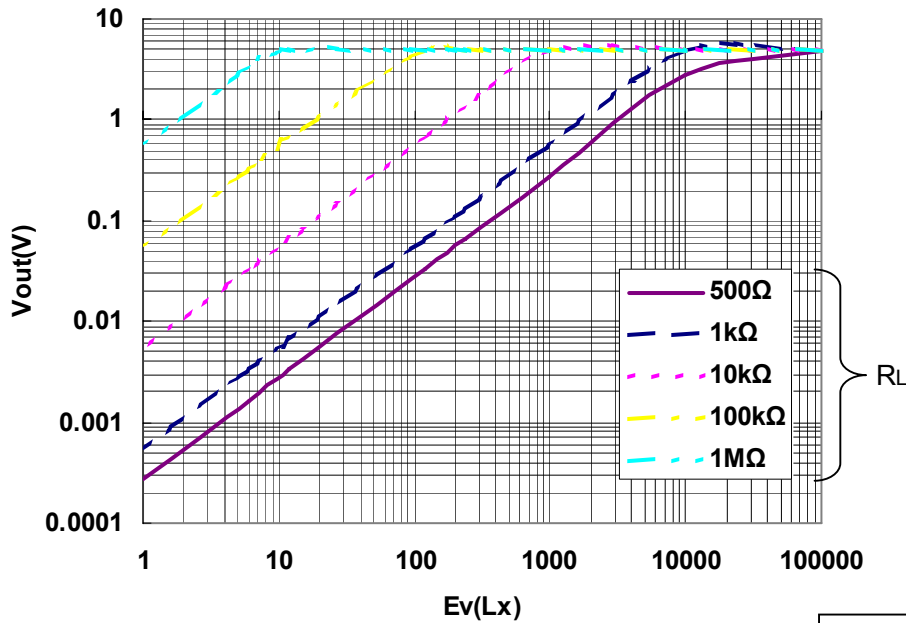


Fig1 Application Circuit

## NJL7502L White LED Vce=5.0V



## NJL7502L Light Source A Vce=5.0V



**[CAUTION]**

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