

Linear Light Sensor



TYPE:LS06-S/M/B
NANYANG SENBA OPTICAL AND ELECTRONIC CO., LTD.

LS06-S/M/B

Production Specification

➤ Replacement of CDS Photo Resistor

➤ ROHS Compliant

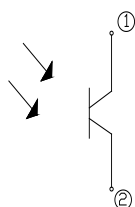
■ TYPICAL APPLICATIONS

- Night light and Electronic toy controls
- Camera exposure
- Switch for Photoelectric equipments

■ FEATURES

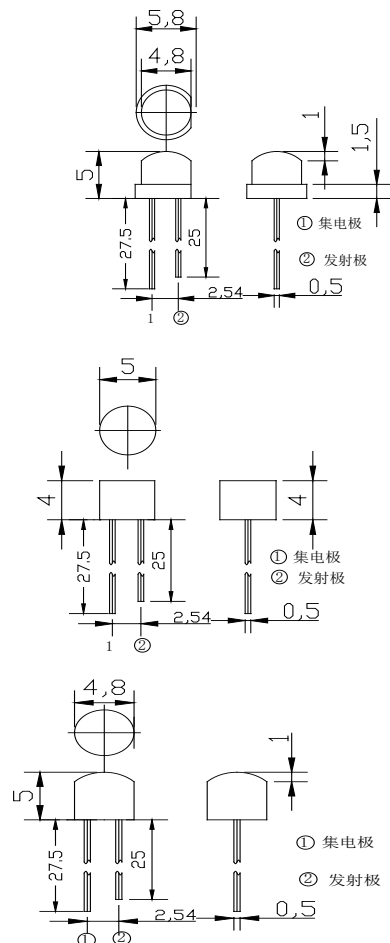
- Linear output conforming to luminance
- Temperature Stable
- Low dark current and Low working Lux

■ FUNCTIONAL PIN DESCRIPTION



1.Collector 2.Emitter

Outline Dimensions(mm)



■ MAXIMUM RATINGS (Ta= 25°C)

Characteristics	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	70	V
Emitter-Collector Voltage	V_{ECO}	7	V
Collector current	I_C	20	mA
Collector Power Dissipation	P_D	100	mW
Operating Temperature	T_{opr}	-25~+70	°C

Storage Temperature	T_{stg}	-25~+80	°C
Soldering Temperature ^{※1}	T_{sol}	260	°C

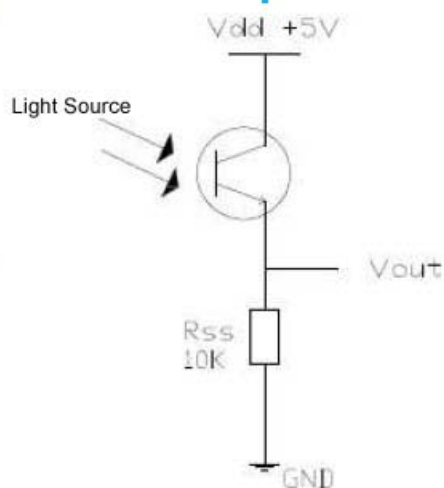
***1 At the position of 2mm from the bottom of the package within 5 seconds.**

■ ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta= 25°C)

Parameter	Symbol	Test Conditions		Min	Typ e	Ma x	Uni t
Collector Light Current	I_C	$V_{CE}=5V, E_v=100$ Lux, ($E_e=1Mw/cm^2$) ^{※2}	S	228	239 .5	249	μA
			M	179	186 .7	193	
			B	310	328 .5	339	
Collector Dark Current	I_{CEO}	$V_{CE}=5V, E_e=0$ ^{※2}				10	nA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=2mA, I_B=100$ μA				2.0	V
Peak Sensitivity Wavelength	λ_p				850		nm
Spectral Sensitivity	$\Delta\lambda$			450-1050			nm
Angular Response	$\Delta\theta$		S		± 55		de g.
			M		± 65		
			B		± 60		
Rising Response Time	t_r	$V_{CC}=5V,$ $I_C=1mA,$ $R_L=1K$			15		μs
Falling Response Time	t_f				15		μs
Current Gain	H_{FE}	$V_{CE}=5V,$ $I_C=2mA,$	S	630		107 0	
			M	860		147 0	
			B	120 0		200 0	

※2 E_v, E_e are luminance irradiant by CIE standard light source A(tungsten lamp) at 2856K

■ TEST SCHEMATIC CIRCUITS



$$\text{Photocurrent} = V_{out} / R_{ss}$$

* R_{ss} is recommended to use high stable

resistor.

Figure 1 - Photocurrent Measurement Circuit

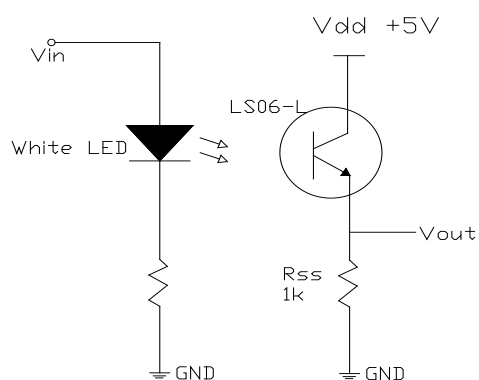


Figure 2 - Measuring Method for Switching Time

APPLICATION EXAMPLES

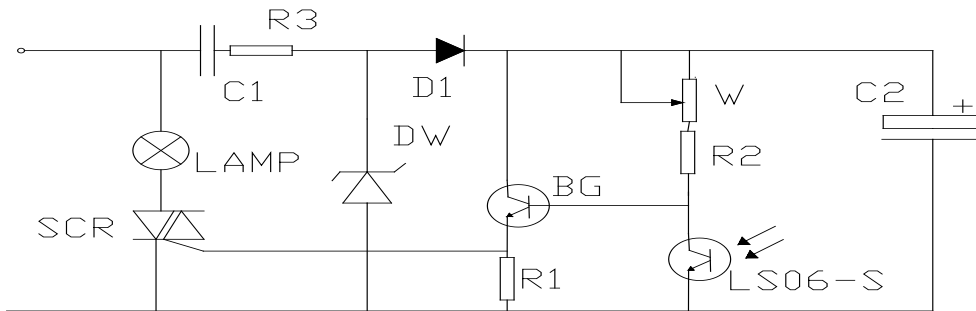


Figure 3. Night light Control

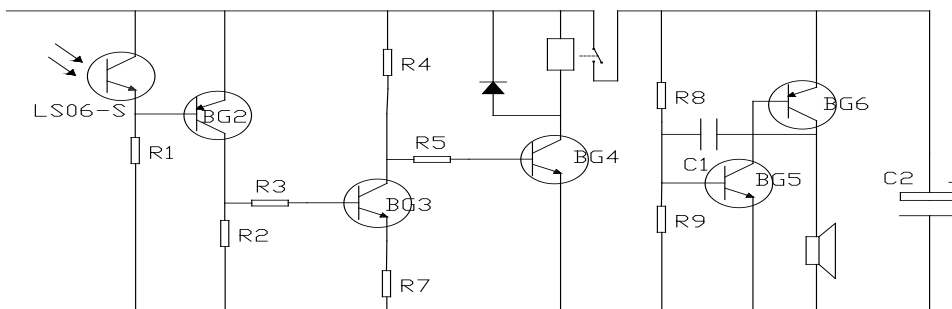


Figure 4. Security Alarm Control

CAUTIONS FOR USE

- ◆ Application circuit diagrams and circuit constants contained herein are shown as examples of standard use and operation.
- ◆ Be sure to perform soldering at values within the maximum ratings.
Do not perform reflow soldering.
- ◆ The photocurrent will be influenced if the dirty or destroy on the surface.

- ◆ The sensors are small, transparent, plastic packages.

They are sensitive to moisture and come in sealed, moisture proof packages.



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