



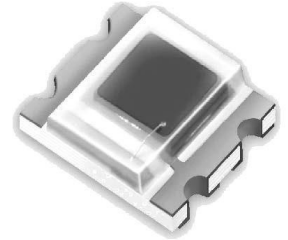
DATASHEET

Surface-Mount Color Photo Sensor

PS-620-A-B-S
PS-550-A-B-S
PS-470-A-B-S

Key features

Surface-mount plastic package
High sensitivity for Red, Green, and Blue light source
PS-620-A-B-S ($\lambda_p = 620\text{nm}$, Red)
PS-550-A-B-S ($\lambda_p = 550\text{nm}$, Green)
PS-470-A-B-S ($\lambda_p = 470\text{nm}$, Blue)
Good stable analog output with temperature shift
Size: 3.2mm (L)*2.7mm (W)*1.1mm (H)
Operating temperature performance, -40°C to 85°C
Active area: 1.8 mm^2
RoHS compliant and Pb free package



Applications

Laser power feedback control
Color adjustment for LED light system
Color adjustment for color display
Color detection
White balance adjustment
Consumer and mobile appliances

Descriptions

Color photo sensor series are one channel Si photodiode sensitivity to Red, Green and Blue region spectrum in miniature SMD package. The color sensor series product is the good effective and low cost solution to white color balance, color detection and color management applications.



<http://www.egismos.com>

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Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Condition	Rating	Units
Reverse Breakdown Voltage	V_{BR}	$I_R = 100\mu A$	35	V
Forward Voltage	V_F	$I_F = 10mA$	0.5~1.3	V
Operating Temperature	T_{opr}	--	-40~+85	°C
Storage Temperature	T_{stg}	--	-40~+85	°C
Soldering Temperature	T_{sol}	--	260	°C

Note: Soldering time \leq 5 seconds

Electro-Optical Characteristics (Ta=25°C)

Red Color Sensor: PS-620-A-B-S

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Units
Peak Sensitivity Wavelength	λ_P	--	--	620	--	nm
Short-Circuit Current	I_{sc}	$E_e=100Lux$ $V_R=0V$ [Note]	--	0.086	--	μA
Reverse Light Current	I_{L1}	$E_e=100Lux$ $V_R=5V$ [Note]	--	0.091	--	μA
	I_{L2}	$E_e=1000Lux$ $V_R=5V$ [Note]	--	0.83	--	μA
Reverse Dark Current	I_D	$E_e=0$ $V_R = 10 V$	--	2	10	nA
Photo sensitivity	S	Red ($\lambda_P=630nm$)	--	0.21	--	A/W

Note: White Fluorescent light (Color Temperature = 6500K) is used as light source

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Green Color Sensor: PS-550-A-B-S

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Units
Peak Sensitivity Wavelength	λ_P	--	--	550	--	nm
Short-Circuit Current	I_{SC}	$E_e=100\text{Lux}$ $V_R=0\text{V}$ [Note]	--	0.075	--	μA
Reverse Light Current	I_{L1}	$E_e=100\text{Lux}$ $V_R=5\text{V}$ [Note]	--	0.082	--	μA
	I_{L2}	$E_e=1000\text{Lux}$ $V_R=5\text{V}$ [Note]	--	0.72	--	μA
Reverse Dark Current	I_D	$E_e=0\text{ Lux}$ $V_R = 10\text{ V}$	--	2	10	nA
Photo sensitivity	S	Green ($\lambda_P=520\text{nm}$)	--	0.18	--	A/W

Note: White Fluorescent light (Color Temperature = 6500K) is used as light source

Blue Color Sensor: PS-470-A-B-S

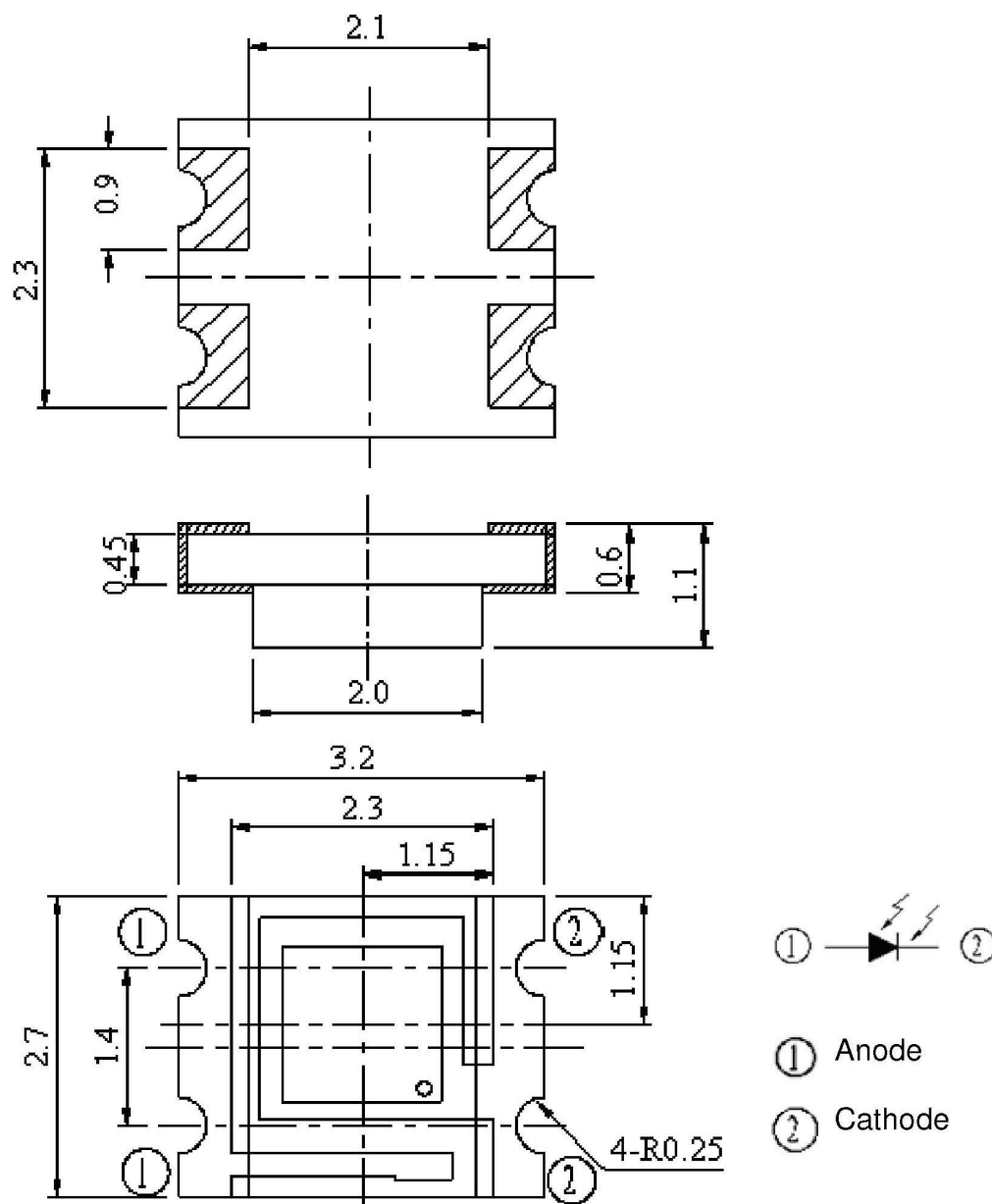
Parameter	Symbol	Condition	MIN.	TYP.	MAX.	Units
Peak Sensitivity Wavelength	λ_P	--	--	470	--	nm
Short-Circuit Current	I_{SC}	$E_e=100\text{Lux}$ $V_R=0\text{V}$ [Note]	--	0.042	--	μA
Reverse Light Current	I_{L1}	$E_e=100\text{Lux}$ $V_R=5\text{V}$ [Note]	--	0.046	--	μA
	I_{L2}	$E_e=1000\text{Lux}$ $V_R=5\text{V}$ [Note]	--	0.39	--	μA
Reverse Dark Current	I_D	$V_R = 10\text{ V}$	--	2	10	nA
Photo sensitivity	S	Blue ($\lambda_P=465\text{nm}$)	--	0.09	--	A/W

Note: White Fluorescent light (Color Temperature = 6500K) is used as light source

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Package Dimensions



Unit: mm

Tolerances: $\pm 0.1\text{mm}$

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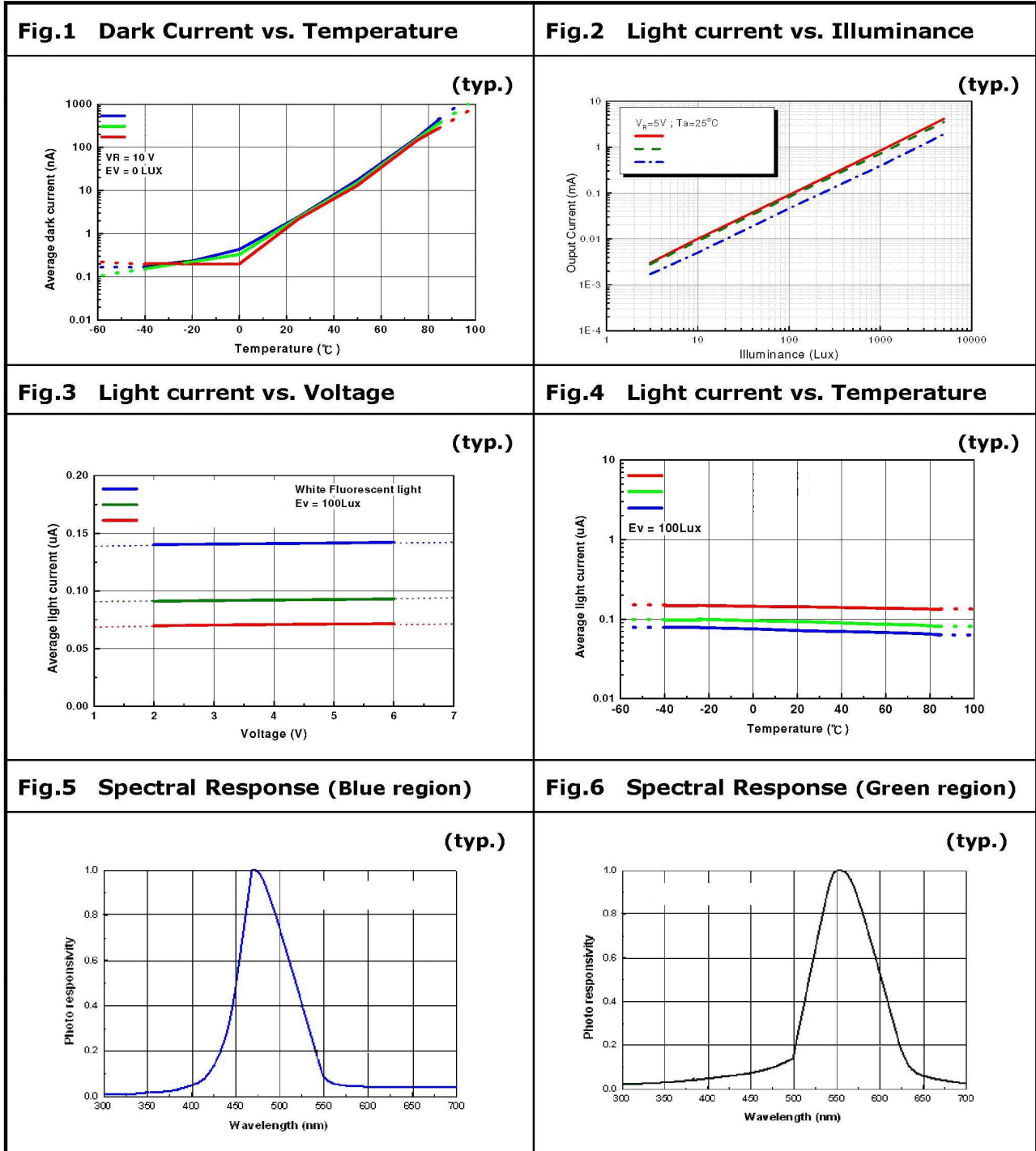
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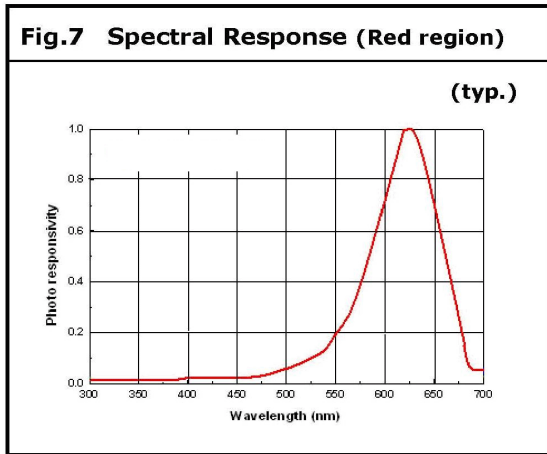
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Typical Electro-Optical Characteristics Curves



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Recommended method of storage

Reflow Terms: JEDEC Level 4 Specification

Dry box storage is recommended as soon as the aluminum bag has been opened prevent moisture absorption. The following conditions should be observed, if dry boxes are not available:

- Storage temperature 10°C to 30°C
- Storage humidity \leq 60%RH max

After more than 72 hours under these conditions moisture content will be too high for Reflow soldering. In case of moisture absorption, the devices will recover to former condition by drying under the following condition:

- 192 hours at 40 +5 /-0°C and 5%RH (dry air / nitrogen), or
- 96 hours at 60°C +5°C and < 5%RH for all device containers, or
- 24 hours at 125 +5 not suitable for reel or tubes

Notice:

- (1) Reflow soldering should not be done more than two times.*
- (2) When soldering, do not put stress on the devices during heating.*
- (3) After soldering, do not warp the circuit board.*

ESD Precaution:

Proper storage and handling procedures should be followed to prevent ESD damage to the devices especially when they are removed from the Anti-static bag. Electro-Static Sensitive Devices warning labels are on the packing.

Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

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