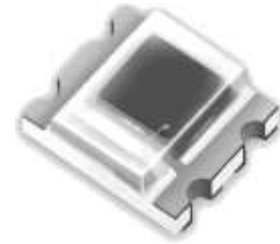


Surface-Mount Color Photo Sensor

Key features

Surface-mount plastic package
High sensitivity for Red, Green, and Blue light source
SC-O-RB-S1-S ($\lambda_p= 620\text{nm}$, Red)
SC-O-GB-S1-S ($\lambda_p= 550\text{nm}$, Green)
SC-O-BB-S1-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 mm²
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.

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: SC-O-RB-S1-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 | $E_e=0 Lux$ $V_R=10V$ | -- | 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

Green Color Sensor: **SC-O-GB-S1-S**

| Parameter | Symbol | Condition | MIN. | TYP. | MAX. | Units |
|-----------------------------|-------------|---|------|-------|------|---------------|
| Peak Sensitivity Wavelength | λ_P | -- | -- | 550 | -- | nm |
| Short-Circuit Current | I_{SC} | $E_e=100\text{Lux}$ $V_R=0V$ [Note] | -- | 0.075 | -- | μA |
| Reverse Light Current | I_{L1} | $E_e=100\text{Lux}$ $V_R=5V$ [Note] | -- | 0.082 | -- | μA |
| | I_{L2} | $E_e=1000\text{Lux}$ $V_R=5V$ [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 |

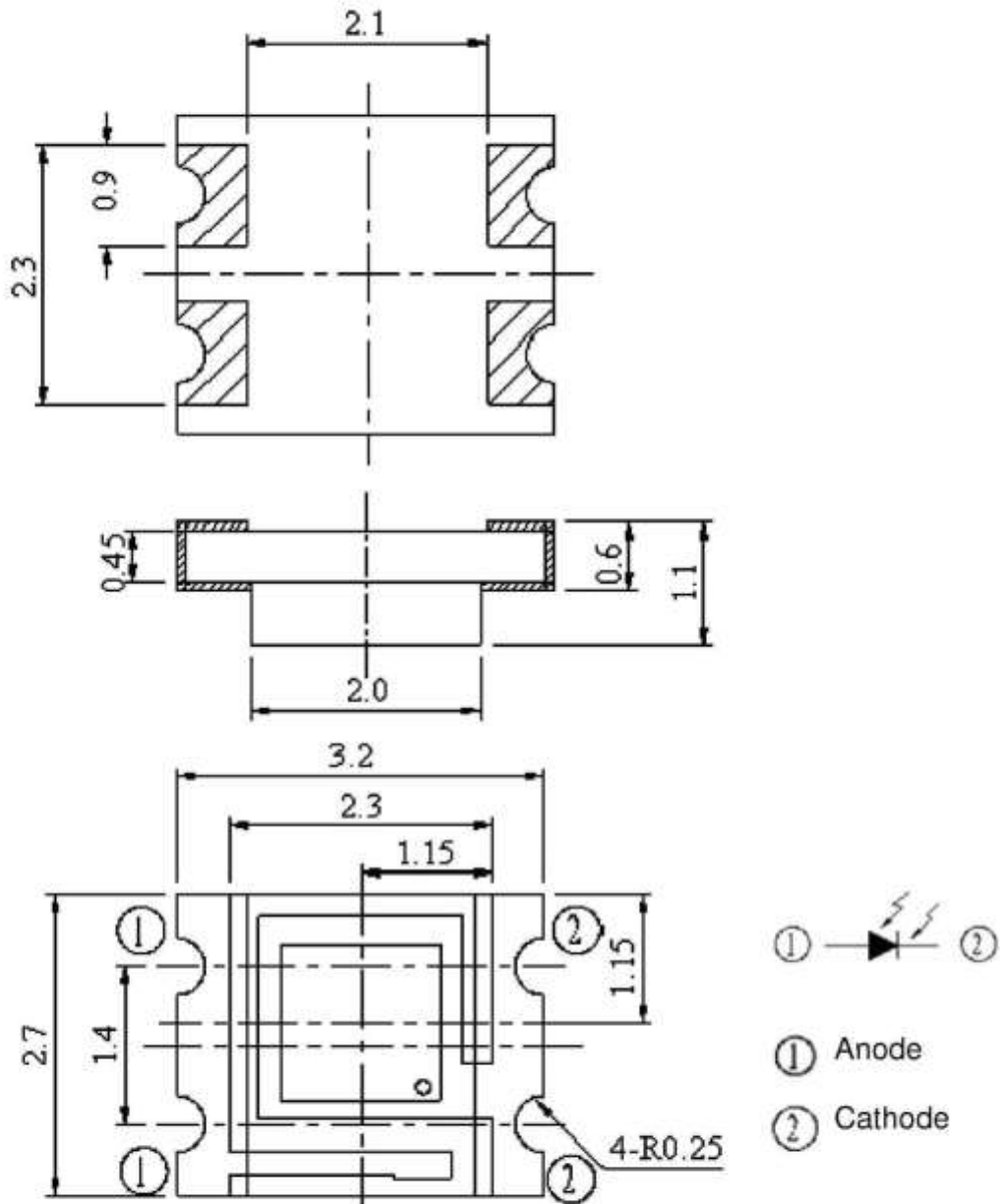
Note: White Fluorescent light (Color Temperature = 6500K) is used as light source

 Blue Color Sensor: **SC-O-BB-S1-S**

| Parameter | Symbol | Condition | MIN. | TYP. | MAX. | Units |
|-----------------------------|-------------|---|------|-------|------|---------------|
| Peak Sensitivity Wavelength | λ_P | -- | -- | 470 | -- | nm |
| Short-Circuit Current | I_{SC} | $E_e=100\text{Lux}$ $V_R=0V$ [Note] | -- | 0.042 | -- | μA |
| Reverse Light Current | I_{L1} | $E_e=100\text{Lux}$ $V_R=5V$ [Note] | -- | 0.046 | -- | μA |
| | I_{L2} | $E_e=1000\text{Lux}$ $V_R=5V$ [Note] | -- | 0.39 | -- | μA |
| Reverse Dark Current | I_D | $E_e=0\text{ Lux}$ $V_R=10\text{ V}$ | -- | 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

Package Dimensions



Unit: mm

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

Typical Electro-Optical Characteristics Curves

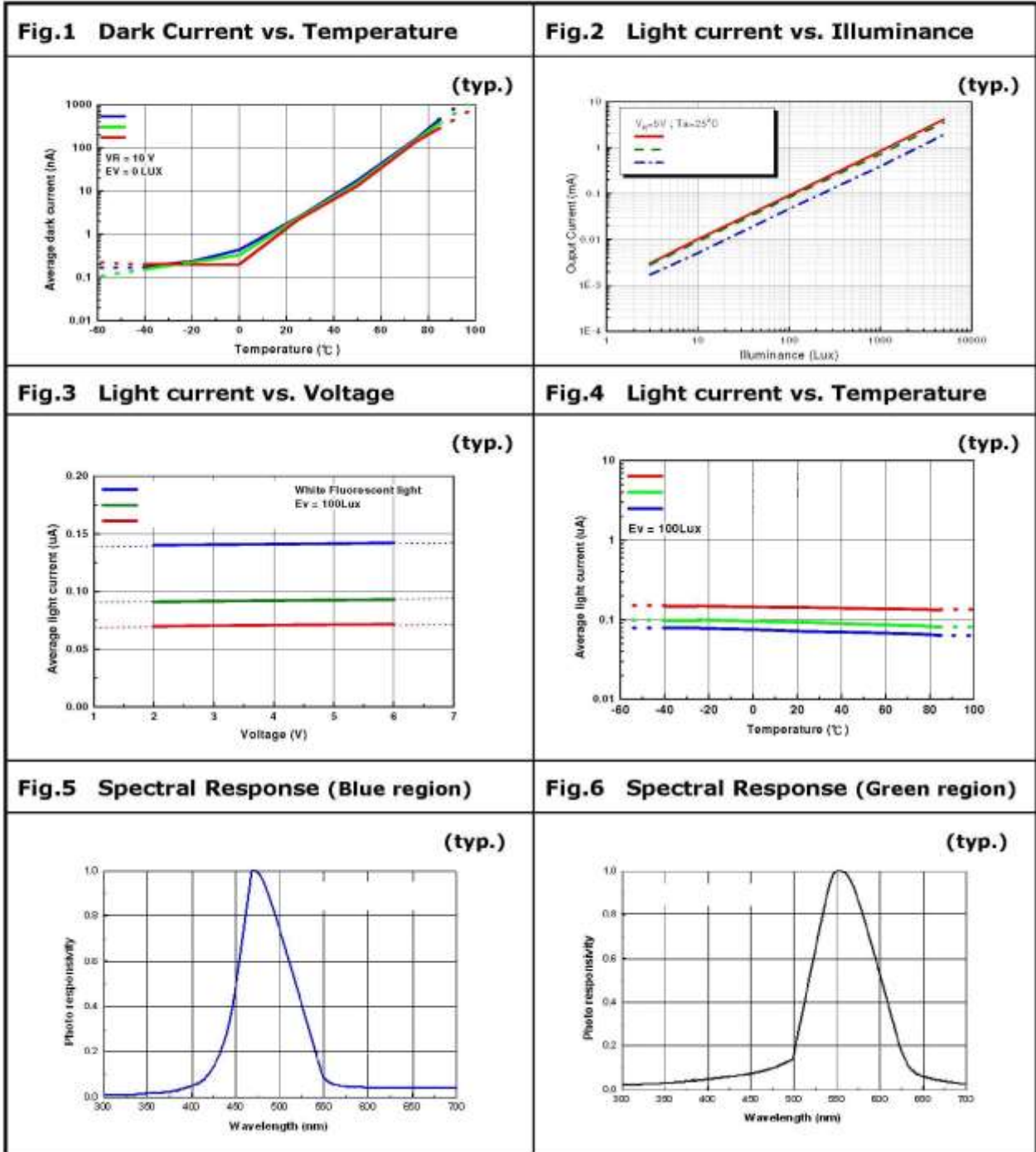


Fig.7 Spectral Response (Red region)