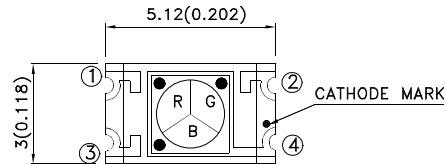


RGB Color Sensor

KPS-5130PD7C

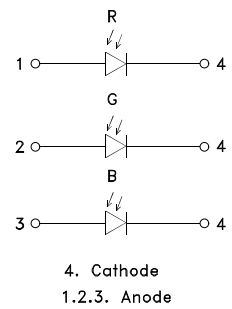
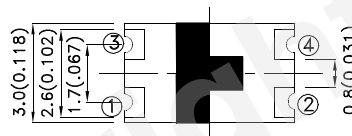
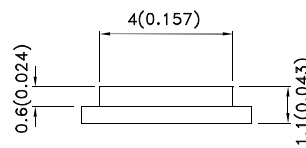
**Description**

•The KPS-5130PD7C Color Sensor Device, consisting of 3-Channel/1Chip (R, G, B) Si photodiode, is a good effective solution to color balance of display backlighting appliances.



**Features**

- \*Lead-free package.
- \*Component in accordance with RoHS.
- \*SMD style package on PCB technology.
- \*Integral Color Filter in Blue, Green, or Red.
- \* Package: 1.5KPCS/Reel.
- \*Moisture sensitivity level : level 3.
- \* RoHS Compliant.



**\*Applications**

The devices are suitable for :

- \*colorimetry.
- \*printing process control.
- \*display color correction.

UNIT : MM[INCH]  
TOLERANCE : ±0.1[± 0.004] UNLESS OTHERWISE NOTED.

**\*Absolute Maximum Ratings(Ta=25°C unless otherwise specified)**

| Parameter             | Symbol         | Value   | Unit |
|-----------------------|----------------|---------|------|
| Reverse Voltage       | V <sub>R</sub> | 10      | V    |
| Operating Temperature | Topr           | -40~+85 | °C   |
| Storage Temperature   | Tsto           | -40~+85 | °C   |
| Soldering Temperature | Tsd            | 260     | °C   |



**\*Electro-optical Characteristics(Ta=25°C unless otherwise specified)**

| Parameter                                   | Symbol           | Condition   | Value |                      |       | Unit            |    |
|---|------------------|---|-------|----------------------|-------|-----------------|----|
|   |                  |   | Min.  | Typ                  | Max.  |                 |    |
| Peak Sensitivity Wavelength                 | $\lambda_p$      | Red   | -     | 620                  | -     | nm              |    |
|   |                  | Green   | -     | 550                  | -     |                 |    |
|   |                  | Blue  | -     | 470                  | -     |                 |    |
| Light Current(1)                            | $I_{L1}$         | 100Lux [1]<br>VR = 5V   | Red   | -                    | 0.039 | -               | uA |
|   |                  |   | Green | -                    | 0.042 | -               |    |
|   |                  |   | Blue  | -                    | 0.022 | -               |    |
| Light Current(2)                            | $I_{L2}$         | 1000Lux [1]<br>VR = 5V  | Red   | -                    | 0.427 | -               | uA |
|   |                  |   | Green | -                    | 0.498 | -               |    |
|   |                  |   | Blue  | -                    | 0.262 | -               |    |
| Diameter of the irradiation sensitive area  | D                |   | -     | 2.0                  | -     | mm              |    |
| Irradiation sensitive area per element      | A                |   | -     | 0.85                 | -     | mm <sup>2</sup> |    |
| Photo sensibility of the single color areas | S <sub>Max</sub> | $\lambda_R=620\text{ nm}$<br>$\lambda_G=550\text{ nm}$<br>$\lambda_B=470\text{ nm}$ | -     | 0.33<br>0.25<br>0.18 | -     | A/W             |    |
| Reverse Dark Current                        | $I_D$            | VR=5V   | -     | -                    | 10    | nA              |    |

Note:

1.White fluorescent light (Color Temperature = 6500K) is used as light source.

Fig.1 Dark Current vs. Ambient Temperature

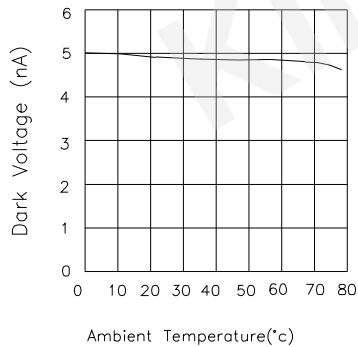


Fig.2 Spectral Response

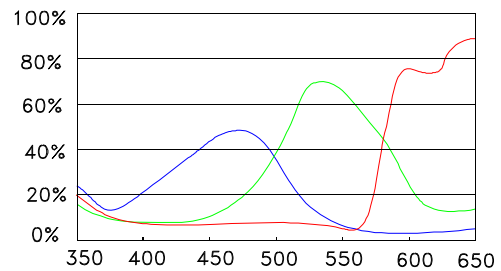
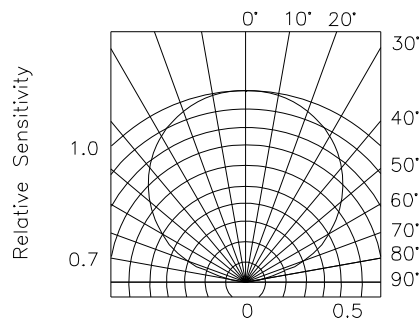


Fig.3 Relative radiant sensitivity vs. Angular displacement



## Typical Electro - Optical Characteristics Curves

Fig.4 R,G,B LED Test vs. Output Photocurrent

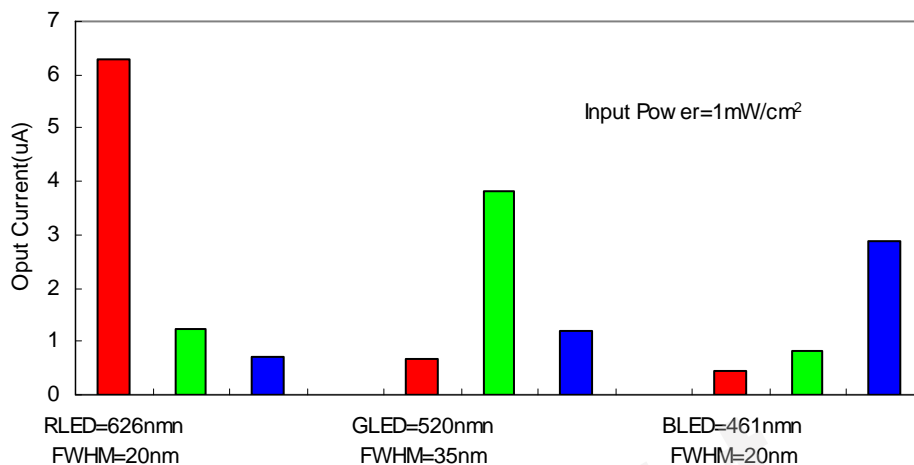
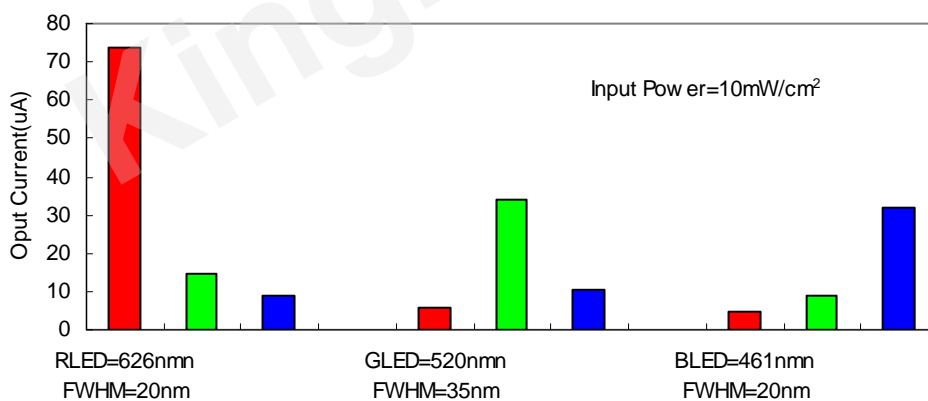
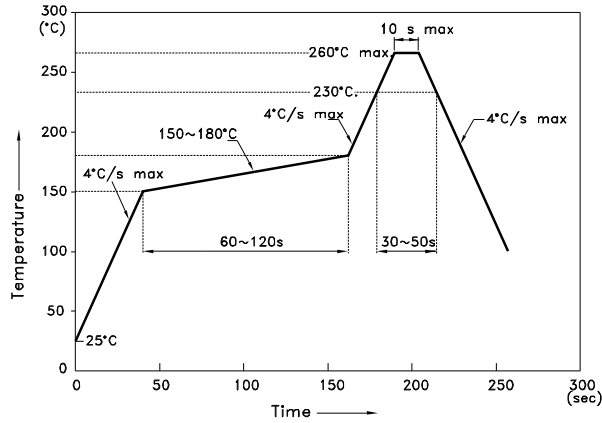


Fig.5 R,G,B LED Test vs. Output Photocurrent



**KPS-5130PD7C**

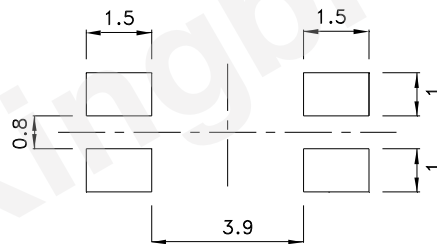
Reflow Soldering Profile For Lead-free SMT Process.



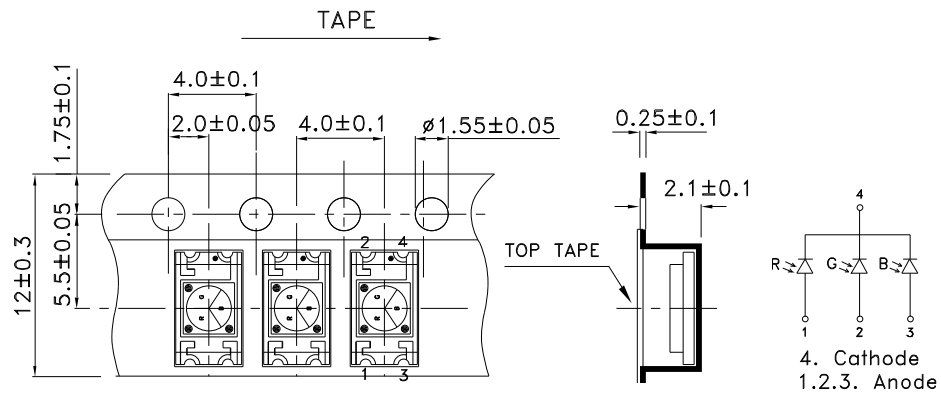
**NOTES:**

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

**Recommended Soldering Pattern**  
(Units : mm; Tolerance: ± 0.1)

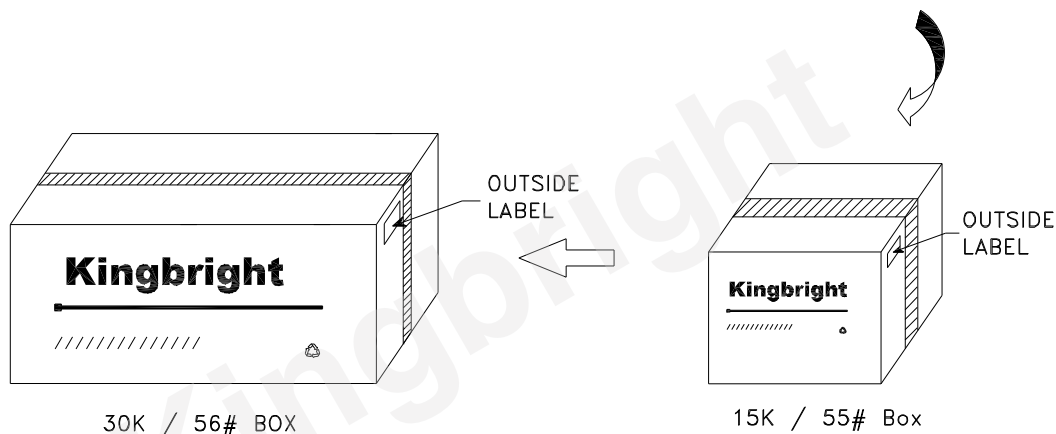
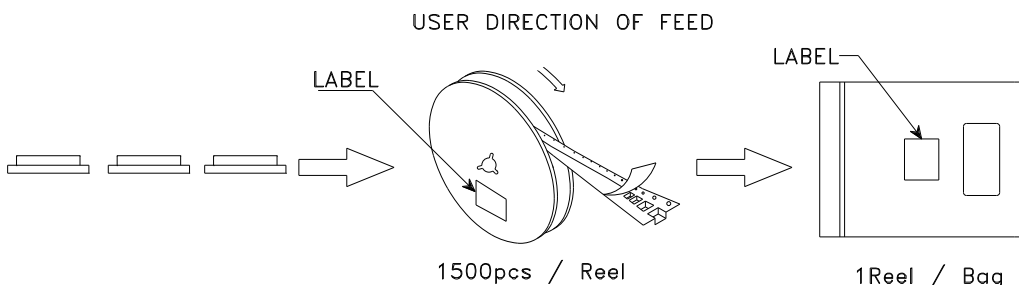



**Tape Specifications**  
(Units : mm)



**PACKING & LABEL SPECIFICATIONS**

**KPS-5130PD7C**



|  |  |
|--|--|
| <h1>Kingbright</h1>  |  |
| P/NO: KPS-5130xxx  |  |
| QTY: 1.500 pcs   | Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C<br/>XX XX XXXX<br/>PASSED</span> |
| S/N: XXXX  |  |
| CODE: XXX  |  |
| LOT NO:  |  |
| <br>XXXXXXXXXXXXXXXXXXXXXXXX |  |
| RoHS Compliant   |  |

Detailed application notes are listed on our website.  
[http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)