



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KPFA-3010RGBC-11

Hyper Red
Green
Blue

Features

- 3.0mmx1.0mm right angle SMT LED, 1.5mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- Tinned pads for improved solderability.
- RoHS compliant.

Description

The Hyper Red source color devices are made with Al-GaN on GaAs substrate Light Emitting Diode.

The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.

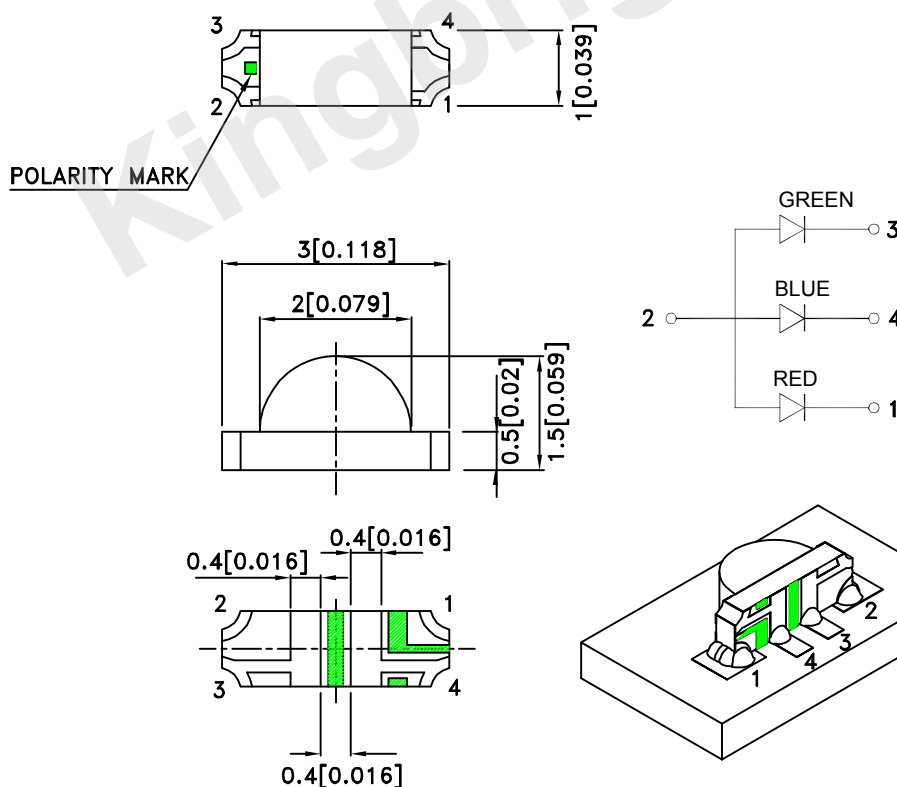
The Blue source color devices are made with InGaN on Sapphire Light Emitting Diode.

Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.2(0.008)$ unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.



Selection Guide

| Part No. | Dice | Lens Type | Iv (mcd) [2] @ 20mA | | Viewing Angle [1] |
|------------------|---------------------|-------------|------------------------|------|----------------------|
| | | | Min. | Typ. | 2θ1/2 |
| KPFA-3010RGBC-11 | Hyper Red (AlGaInP) | Water Clear | 80 | 140 | 120° |
| | Green (InGaN) | | 200 | 300 | |
| | Blue (InGaN) | | 40 | 70 | |

Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.
3. Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

Electrical / Optical Characteristics at TA=25°C

| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|--------|--------------------------|----------------------------|-------------------|-----------------|-------|-----------------|
| λpeak | Peak Wavelength | Hyper Red Green Blue | 630 515 460 | | nm | If=20mA |
| λD [1] | Dominant Wavelength | Hyper Red Green Blue | 621 525 465 | | nm | If=20mA |
| Δλ1/2 | Spectral Line Half-width | Hyper Red Green Blue | 20 30 25 | | nm | If=20mA |
| C | Capacitance | Hyper Red Green Blue | 25 45 100 | | pF | Vf=0V;f=1MHz |
| Vf [2] | Forward Voltage | Hyper Red Green Blue | 2 3.3 3.3 | 2.5 4.1 4 | V | If=20mA |
| IR | Reverse Current | Hyper Red Green Blue | | 10 50 50 | uA | VR=5V |

Notes:

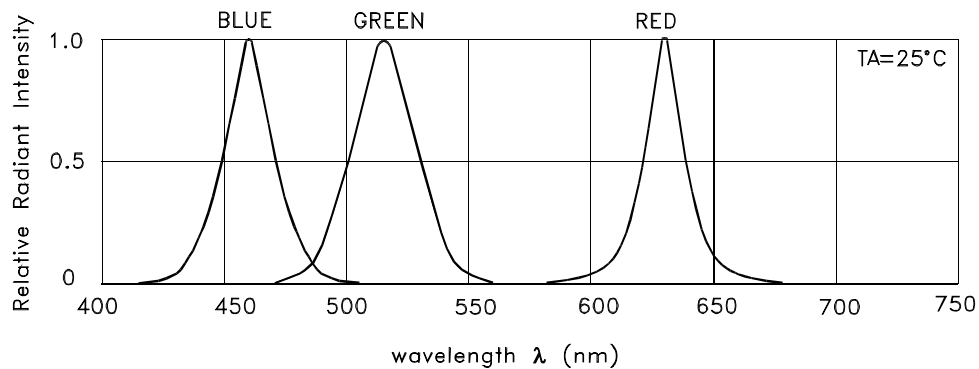
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

| Parameter | Hyper Red | Green | Blue | Units |
|--------------------------|----------------|-------|------|-------|
| Power dissipation | 75 | 102.5 | 120 | mW |
| DC Forward Current | 30 | 25 | 30 | mA |
| Peak Forward Current [1] | 195 | 150 | 150 | mA |
| Reverse Voltage | 5 | | | V |
| Operating Temperature | -40°C To +85°C | | | |
| Storage Temperature | -40°C To +85°C | | | |

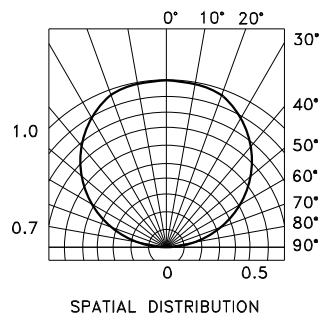
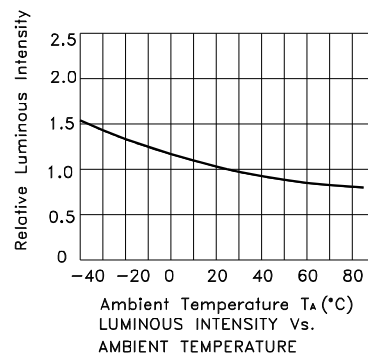
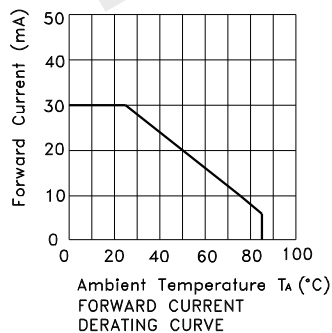
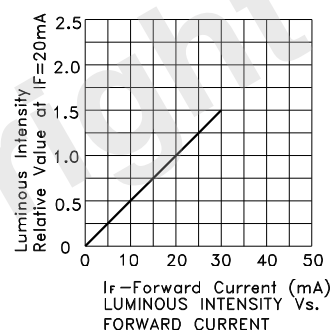
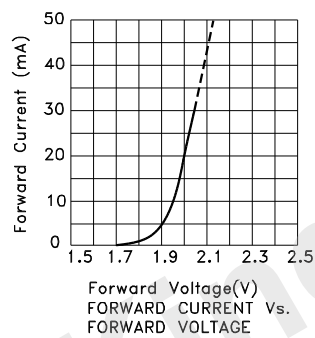
Notes:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

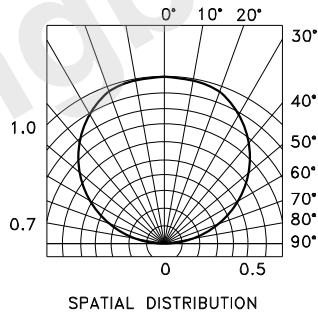
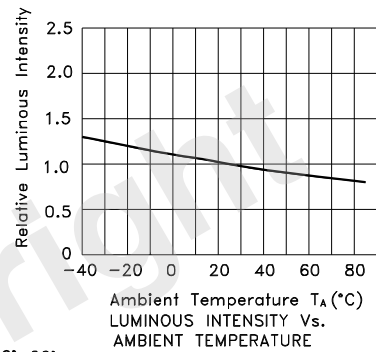
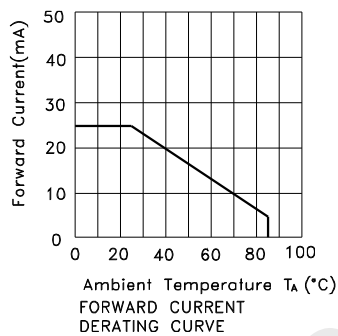
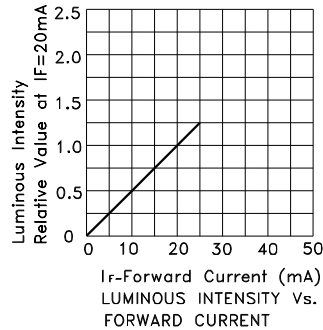
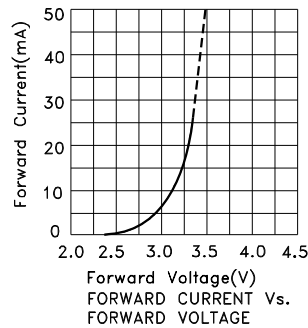


RELATIVE INTENSITY Vs. WAVELENGTH

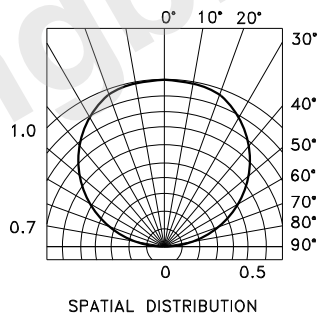
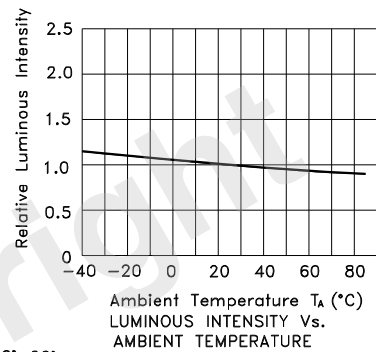
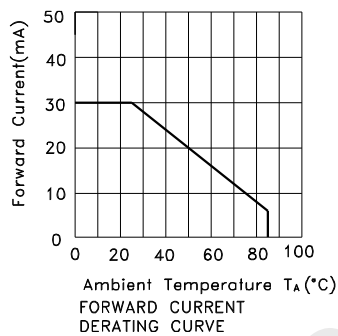
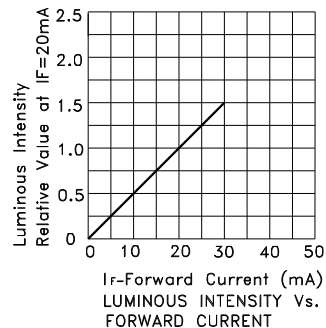
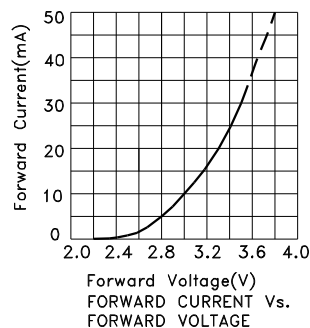
KPFA-3010RGB-11 Hyper Red



Green



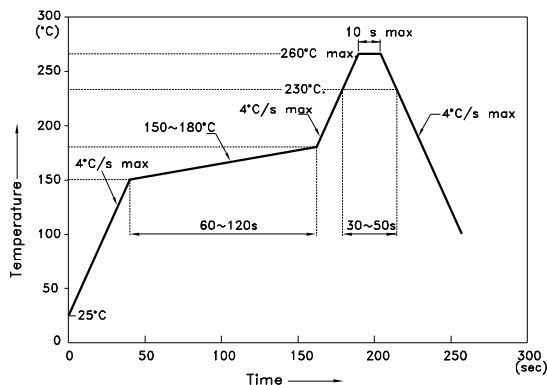
Blue



KPFA-3010RGC-11

Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

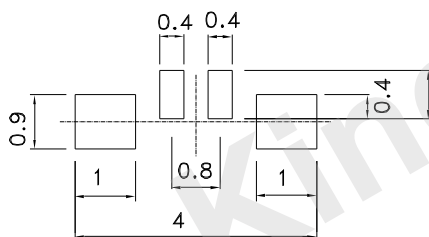
Reflow Soldering Profile For Lead-free SMT Process.



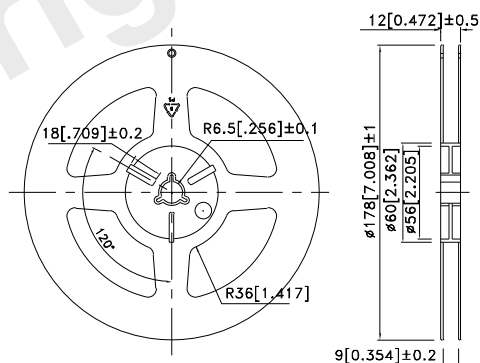
NOTES:

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.

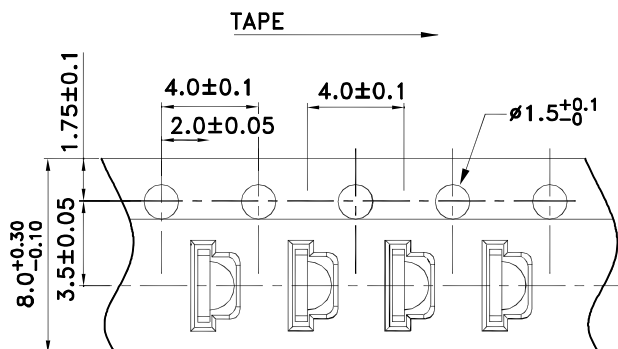
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



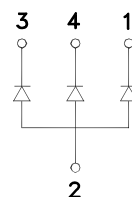
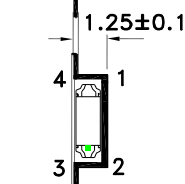
Reel Dimension



Tape Dimensions (Units : mm)

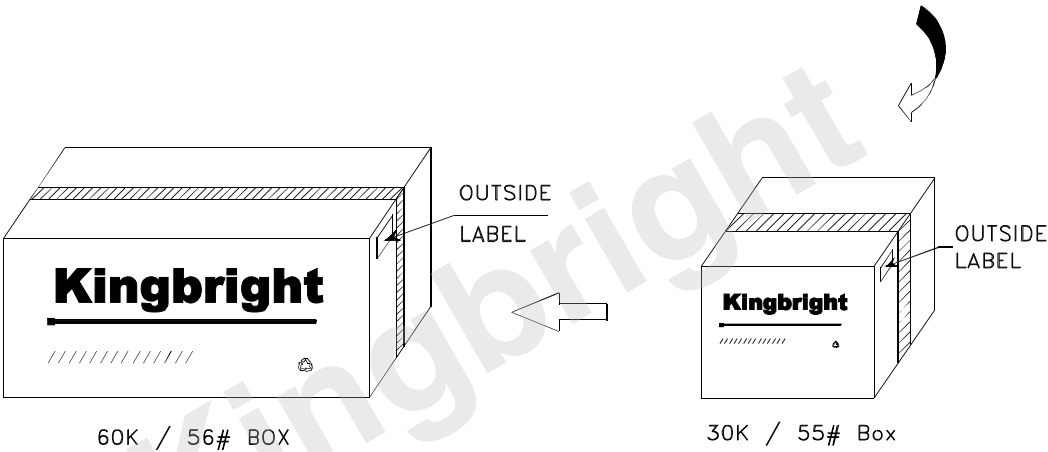
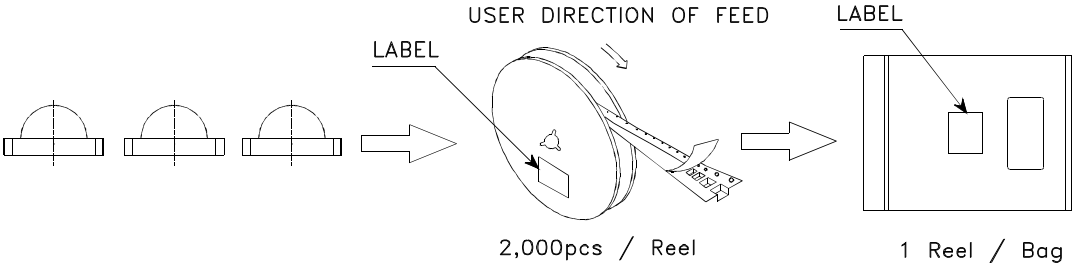



0.2±0.02



PACKING & LABEL SPECIFICATIONS

KPFA-3010RGC-11



| | |
|--|---|
| Kingbright | |
| P/NO: KPFA-3010xxx | |
| QTY: 2,000 pcs | Q.C. Q C XX XX XXXX PASSED |
| S/N: XXXX | |
| CODE: XXX | |
| LOT NO: | |
|  xxxxxxxxxxxxxxxxxxxxxxxx | |
| RoHS Compliant | |

Detailed application notes are listed on our website.
http://www.kingbright.com/application_notes