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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

Part Number: APHBM2012LSURKCGKC

Hyper Red  
Green

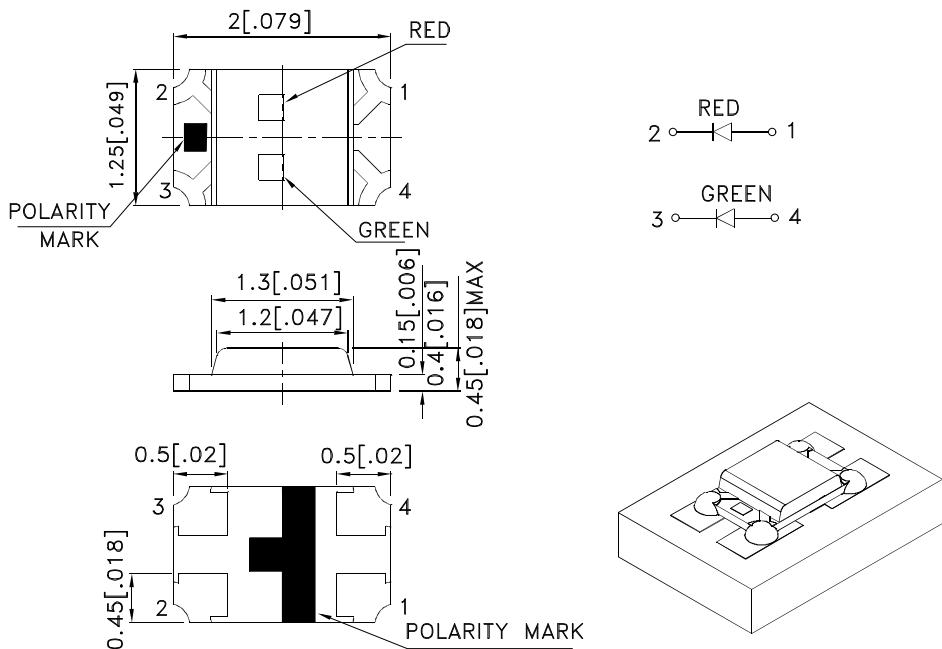
### Features

- 2.0mmx1.25mm SMD LED, 0.45mm max. thickness.
- Bi -color, low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- Low current IF=2mA operating.
- RoHS compliant.

### Descriptions

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

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.1(0.004")$  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.           | Emitting Color (Material) | Lens Type   | I <sub>v</sub> (mcd) [2] @ 2mA |      | Viewing Angle [1] |
|--------------------|---------------------------|-------------|--------------------------------|------|-------------------|
|                    |                           |             | Min.                           | Typ. |                   |
| APHBM2012LSURKCGKC | Hyper Red (AlGaNp)        | Water Clear | 10                             | 20   | 120°              |
|                    | Green (AlGaNp)            |             | *2                             | *10  |                   |
|                    |                           |             | 1.2                            | 2    |                   |
|                    |                           |             | *1.2                           | *2   |                   |

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%.

\* Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

## Electrical / Optical Characteristics at TA=25°C

| Symbol             | Parameter                | Emitting Color     | Min.       | Typ.        | Max.       | Units | Test Conditions           |
|--------------------|--------------------------|--------------------|------------|-------------|------------|-------|---------------------------|
| λpeak              | Peak Wavelength          | Hyper Red<br>Green |            | 645<br>574  |            | nm    | I <sub>F</sub> =2mA       |
| λD [1]             | Dominant Wavelength      | Hyper Red<br>Green |            | 630<br>570  |            | nm    | I <sub>F</sub> =2mA       |
| Δλ1/2              | Spectral Line Half-width | Hyper Red<br>Green |            | 28<br>20    |            | nm    | I <sub>F</sub> =2mA       |
| C                  | Capacitance              | Hyper Red<br>Green |            | 35<br>15    |            | pF    | V <sub>F</sub> =0V;f=1MHz |
| V <sub>F</sub> [2] | Forward Voltage          | Hyper Red<br>Green | 1.5<br>1.5 | 1.75<br>1.9 | 2.1<br>2.1 | V     | I <sub>F</sub> =2mA       |
| I <sub>R</sub>     | Reverse Current          | Hyper Red<br>Green |            |             | 10<br>10   | uA    | V <sub>R</sub> = 5V       |

Notes:

1. Wavelength: +/-1nm.

2. Forward Voltage: +/-0.1V.

3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

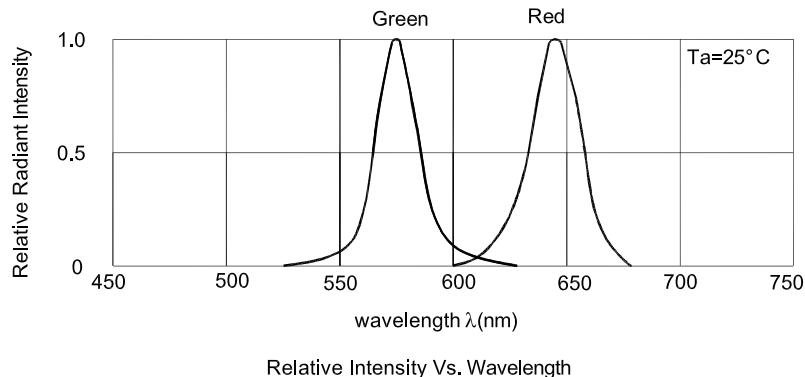
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

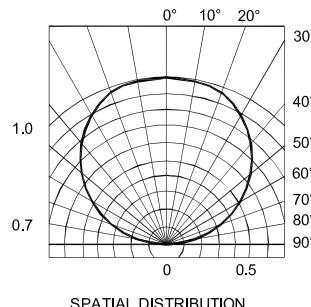
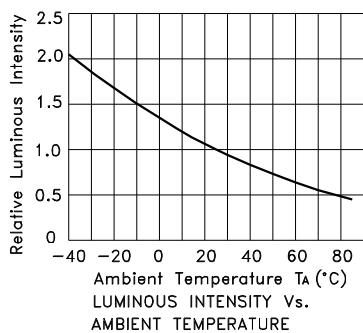
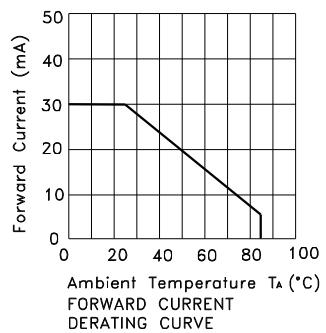
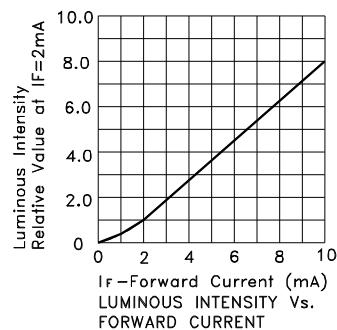
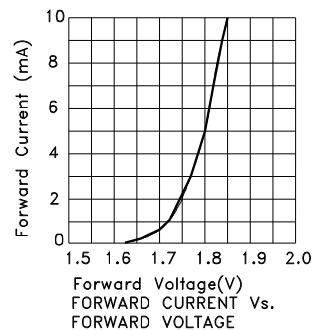
| Parameter                | Hyper Red | Green          | Units |
|--------------------------|-----------|----------------|-------|
| Power dissipation        | 63        | 63             | mW    |
| DC Forward Current       | 30        | 30             | mA    |
| Peak Forward Current [1] | 185       | 150            | mA    |
| Reverse Voltage          | 5         |                | V     |
| Operating Temperature    |           | -40°C To +85°C |       |
| Storage Temperature      |           | -40°C To +85°C |       |

Note:

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

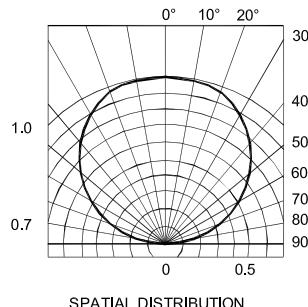
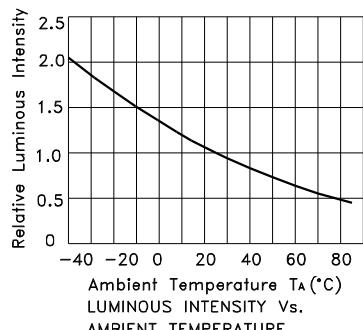
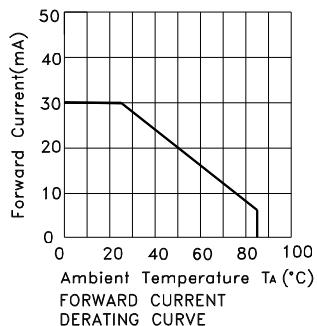
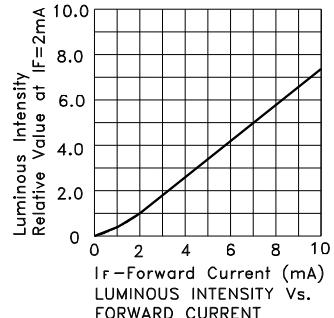
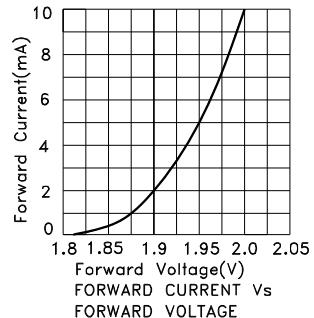


**APHBM2012LSURKCGKC**  
**Hyper Red**



# Kingbright

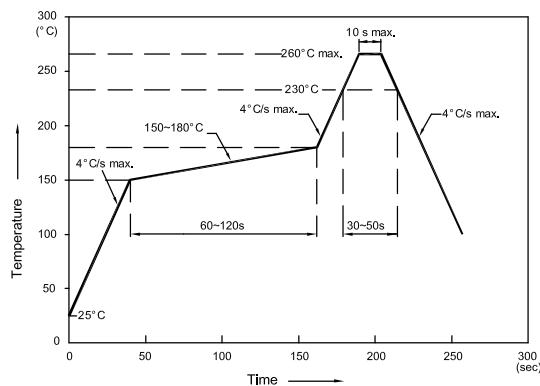
## Green



APHBM2012LSURKCGKC

**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.**

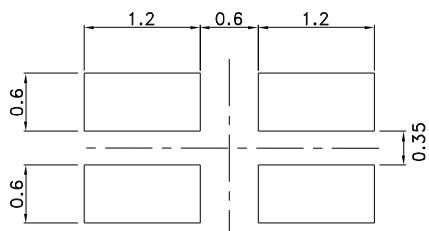
Reflow Soldering Profile For Lead-free SMT Process.



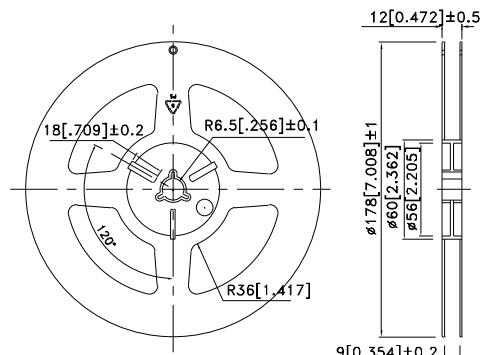
## NOTES:

- 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.

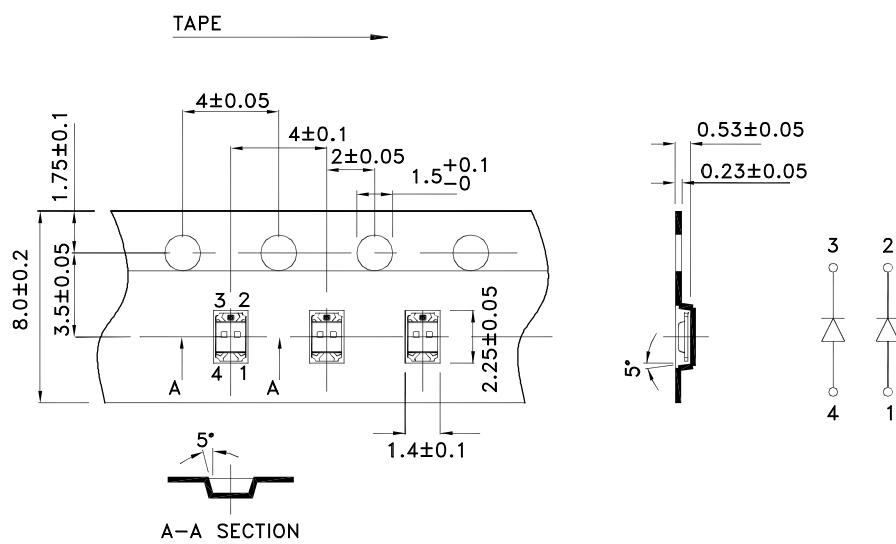
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



## Reel Dimension

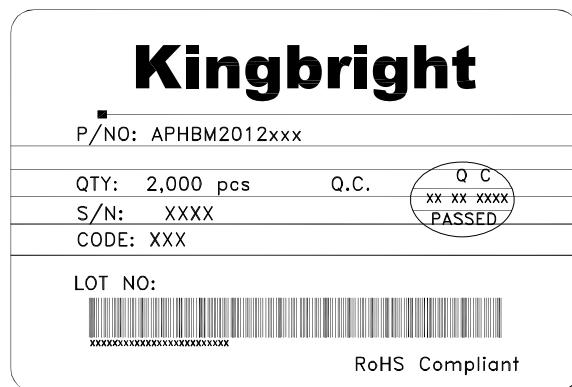
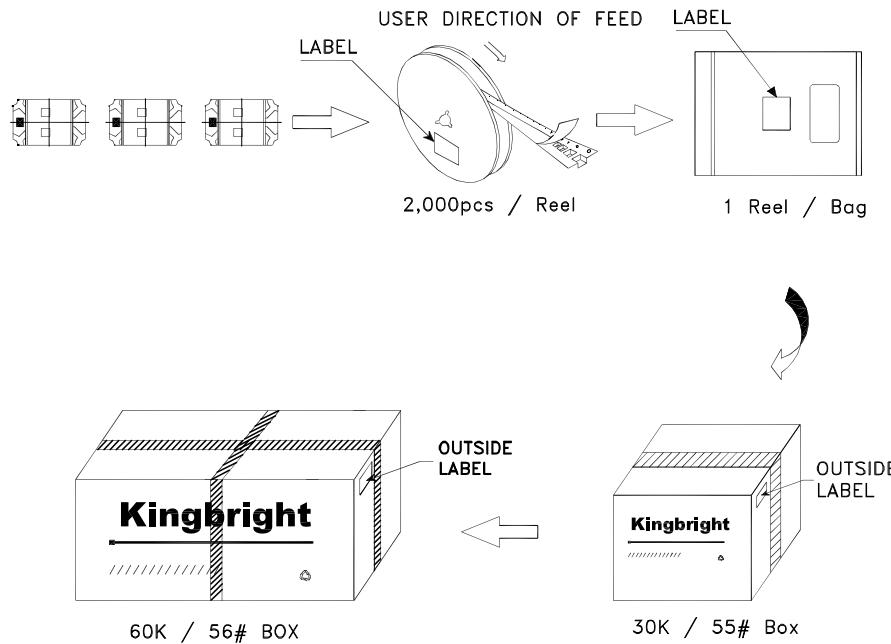


## **Tape Dimensions (Units : mm)**



## PACKING & LABEL SPECIFICATIONS

APHBM2012LSURKCGKC



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