Kingbright

**1.6X1.25mm BI-COLOR SMD CHIP LED LAMP**

Part Number: APTB1612SURKQBDC-F01

Hyper Red
Blue

**ATTENTION**
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

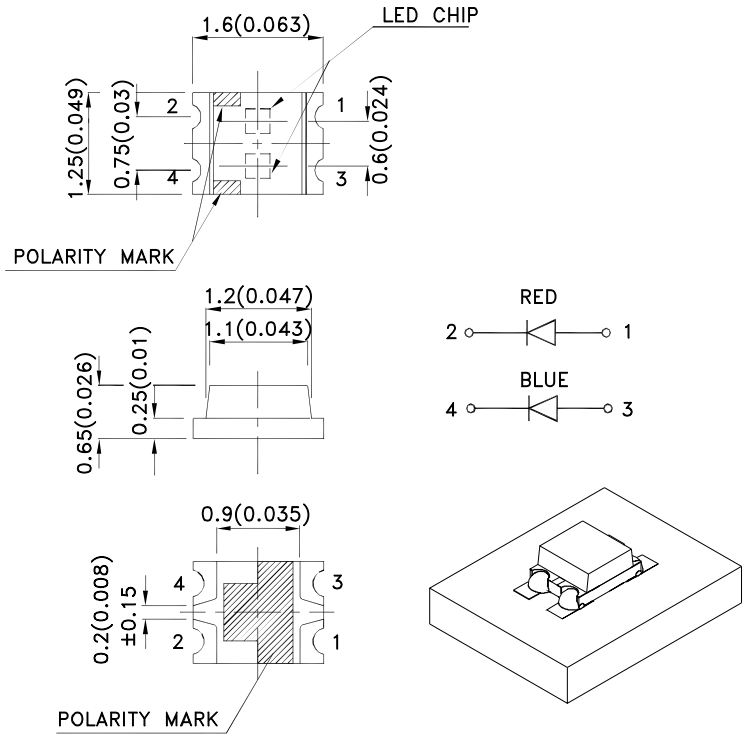
## Features

- 1.6mmx1.25mm SMT LED, 0.65mm thickness.
- Bi-color,low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

## Descriptions

- The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.
- The Blue source color devices are made with InGaN Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

## Package Dimensions




Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±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 |
| APTB1612SURKQBDC-F01 | Hyper Red (AlGaInP) | Water Clear | 120 | 200 | 120° |
| | | | *40 | *80 | |
| | Blue (InGaN) | | 40 | 80 | |
| | | | *40 | *80 | |

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

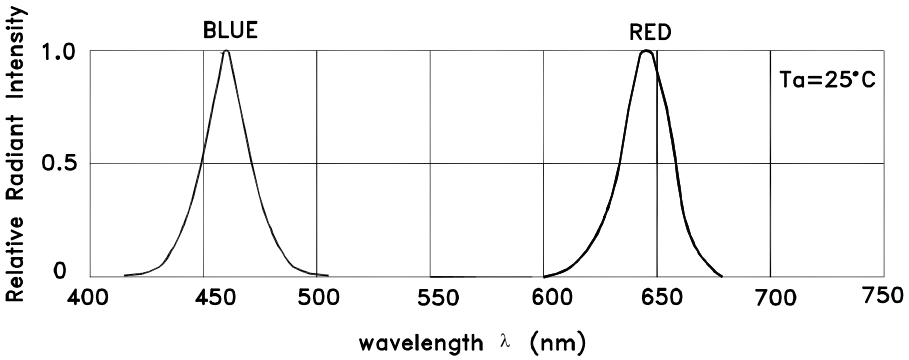
| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|---|---|---|---|---|---|---|
| λpeak | Peak Wavelength | Hyper Red<br>Blue | 645<br>460 | | nm | $I_F$=20mA |
| λD [1] | Dominant Wavelength | Hyper Red<br>Blue | 630<br>465 | | nm | $I_F$=20mA |
| Δλ1/2 | Spectral Line Half-width | Hyper Red<br>Blue | 28<br>25 | | nm | $I_F$=20mA |
| C | Capacitance | Hyper Red<br>Blue | 35<br>100 | | pF | $V_F$=0V;f=1MHz |
| $V_F$ [2] | Forward Voltage | Hyper Red<br>Blue | 1.95<br>3.3 | 2.5<br>4 | V | $I_F$=20mA |
| $I_R$ | Reverse Current | Hyper Red<br>Blue | | 10<br>50 | uA | $V_R$ = 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

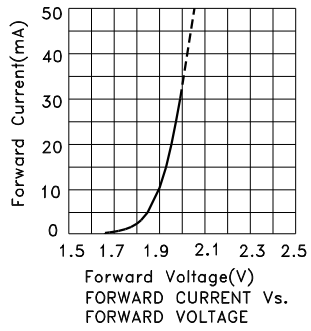
| Parameter | Hyper Red | Blue | Units |
|---|---|---|---|
| Power dissipation | 75 | 120 | mW |
| DC Forward Current | 30 | 30 | mA |
| Peak Forward Current [1] | 185 | 150 | mA |
| Reverse Voltage | 5 | | V |
| Operating Temperature | -40°C To +85°C | | |
| Storage Temperature | -40°C To +85°C | | |

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

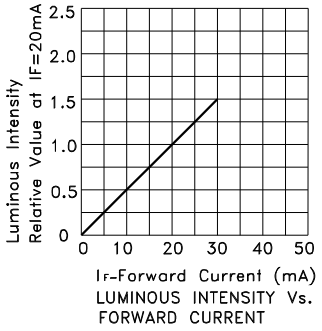



RELATIVE INTENSITY Vs. WAVELENGTH

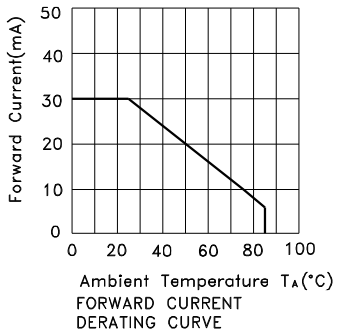
**APTB1612SURKQBDC-F01**
**Hyper Red**



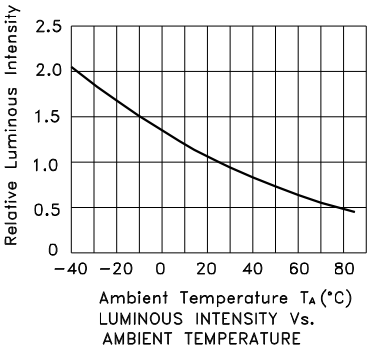

FORWARD CURRENT Vs.
FORWARD VOLTAGE



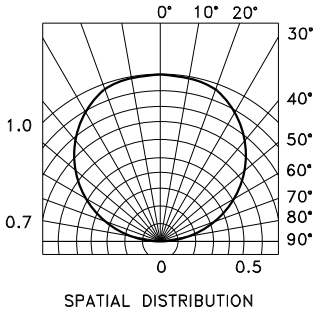

LUMINOUS INTENSITY Vs.
FORWARD CURRENT




FORWARD CURRENT
DERATING CURVE

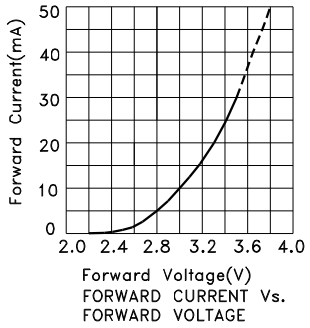



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

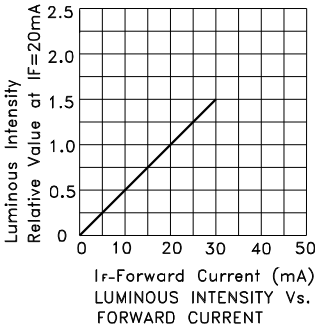



SPATIAL DISTRIBUTION

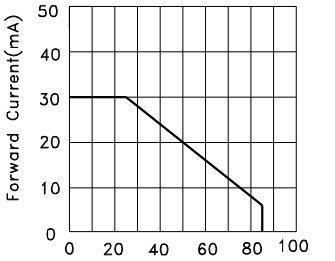
**Blue**



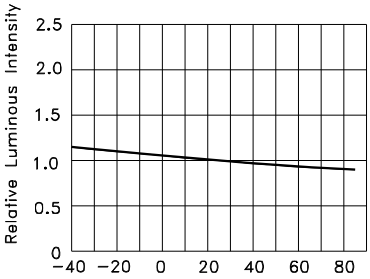

FORWARD CURRENT Vs.
FORWARD VOLTAGE



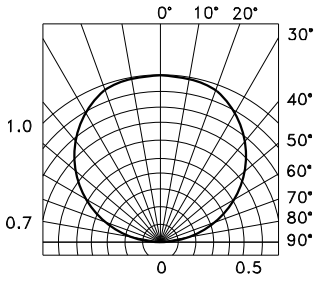

LUMINOUS INTENSITY Vs.
FORWARD CURRENT




FORWARD CURRENT
DERATING CURVE




LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

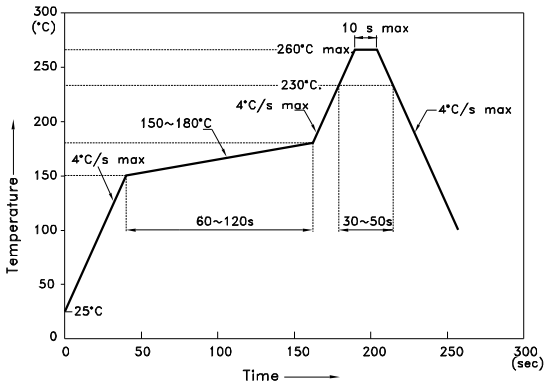



SPATIAL DISTRIBUTION

## APTB1612SURKQBDC-F01

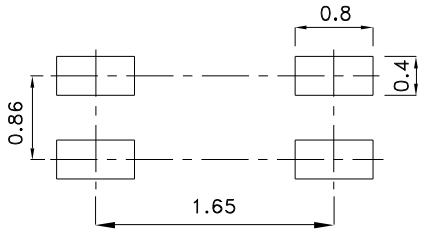
**Reflow soldering is recommended and the soldering profile is shown below.**
**Other soldering methods are not recommended as they might cause damage to the product.**

Reflow Soldering Profile For Lead-free SMT Process.

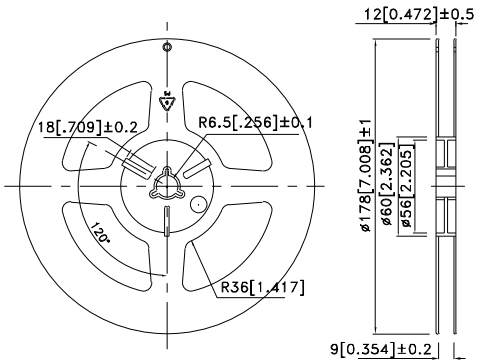



NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

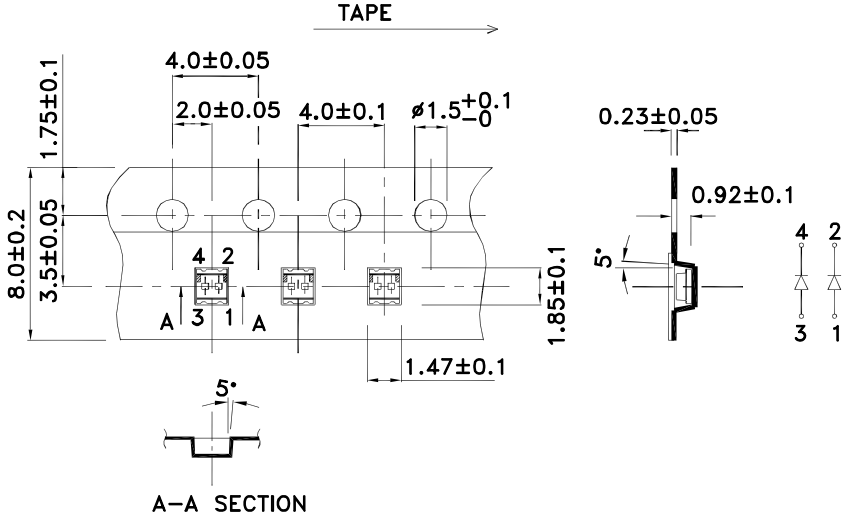
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



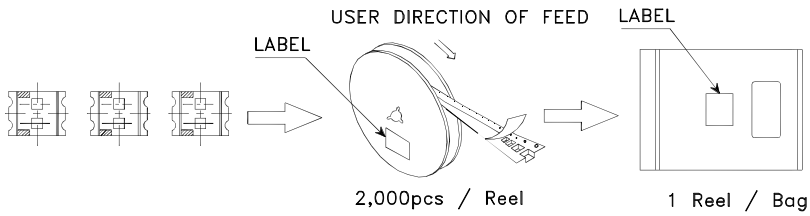

### Reel Dimension

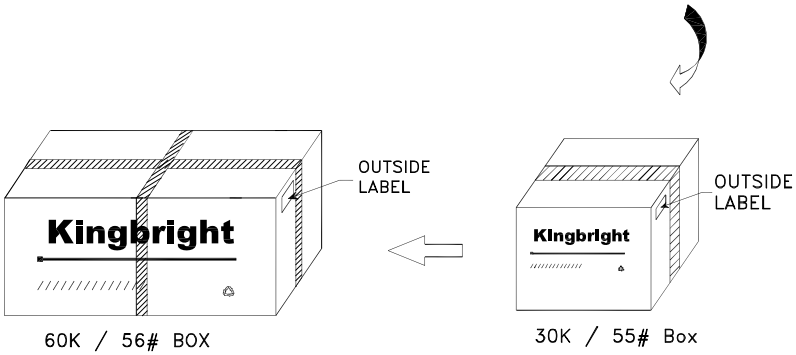


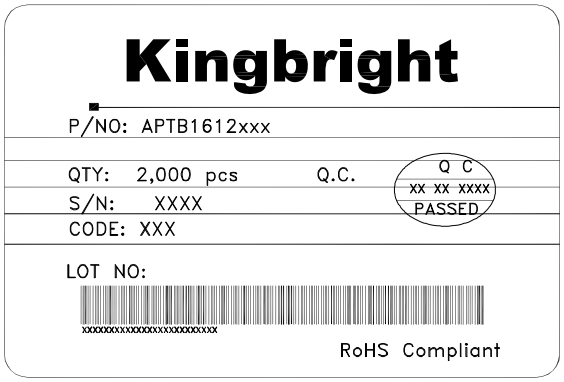

### Tape Dimensions (Units : mm)



**PACKING & LABEL SPECIFICATIONS** **APTB1612SURKQBDC-F01**

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