# Kingbright

**1.6X0.8mm SMD CHIP LED LAMP**

Part Number: APT1608QBC/D        Blue

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

## Features

● 1.6mmX0.8mm SMT LED, 0.75mm thickness.

● Low power consumption.

● Wide viewing angle.

● Ideal for backlight and indicator.

● Various colors and lens types available.

● Package: 2000pcs / reel .

● Moisture sensitivity level : level 3.
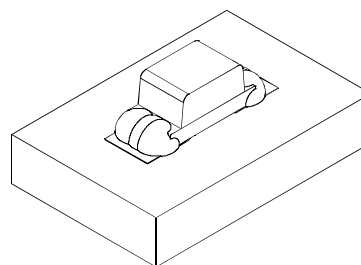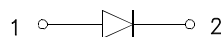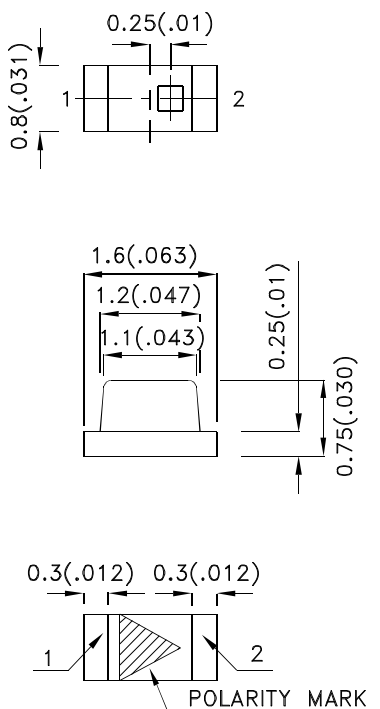
● RoHS compliant.

## Description

The Blue source color devices are made with InGaN  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

0.25(.01)

0.8(.031)

1      2

1.6(.063)

1.2(.047)

1.1(.043)

0.25(.01)

0.75(.030)

1  ○——|◁|——○  2

0.3(.012)   0.3(.012)

1                    2

POLARITY MARK

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±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.

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## Selection Guide

| Part No. | Dice | Lens Type | Iv (mcd) [2] @ 20mA | | Viewing Angle [1] |
| | | | Min. | Typ. | 2θ1/2 |
|---|---|---|---|---|---|
| APT1608QBC/D | Blue (InGaN) | Water Clear | 40 | 100 | 120° |

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

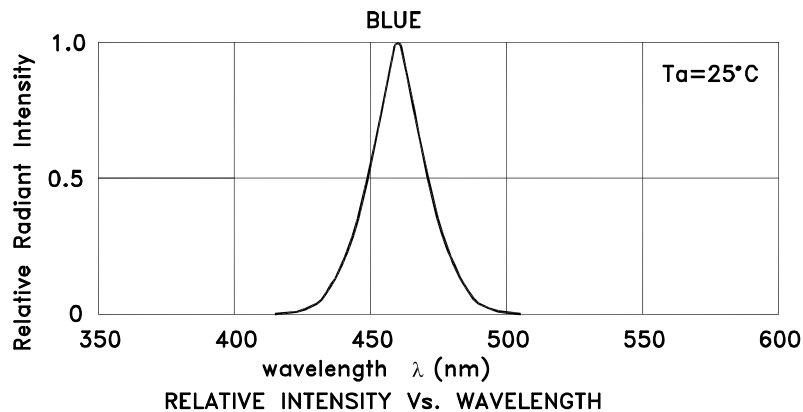| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|---|---|---|---|---|---|---|
| λpeak | Peak Wavelength | Blue | 460 | | nm | $I_F$=20mA |
| λD [1] | Dominant Wavelength | Blue | 465 | | nm | $I_F$=20mA |
| Δλ1/2 | Spectral Line  Half-width | Blue | 25 | | nm | $I_F$=20mA |
| C | Capacitance | Blue | 100 | | pF | $V_F$=0V;f=1MHz |
| $V_F$ [2] | Forward Voltage | Blue | 3.3 | 4 | V | $I_F$=20mA |
| $I_R$ | Reverse Current | Blue | | 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.

## Absolute Maximum Ratings at TA=25°C

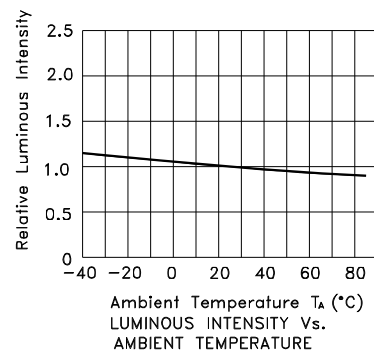| Parameter | Blue | Units |
|---|---|---|
| Power dissipation | 120 | mW |
| DC Forward Current | 30 | mA |
| Peak Forward Current [1] | 150 | mA |
| Reverse Voltage | 5 | V |
| Operating Temperature | -40°C To +85°C | |
| Storage Temperature | -40°C To +85°C | |

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

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## BLUE

Ta=25°C

RELATIVE INTENSITY Vs. WAVELENGTH

(Relative Radiant Intensity vs. wavelength λ (nm))

**Blue**          **APT1608QBC/D**

FORWARD CURRENT Vs.
FORWARD VOLTAGE

(Forward Current(mA) vs. Forward Voltage(V))

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

(Luminous Intensity Relative Value at IF=20mA vs. IF-Forward Current (mA))

FORWARD CURRENT
DERATING CURVE

(Forward Current(mA) vs. Ambient Temperature TA(°C))

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

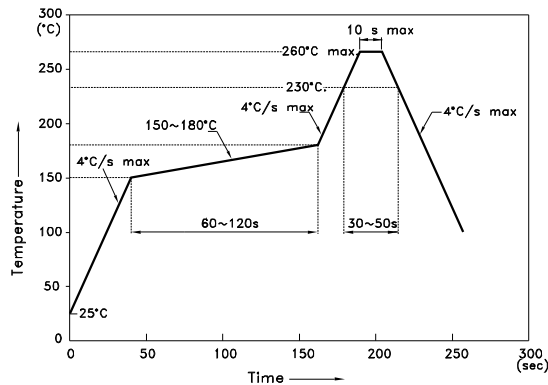(Relative Luminous Intensity vs. Ambient Temperature TA(°C))

SPATIAL DISTRIBUTION

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## APT1608QBC/D

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.

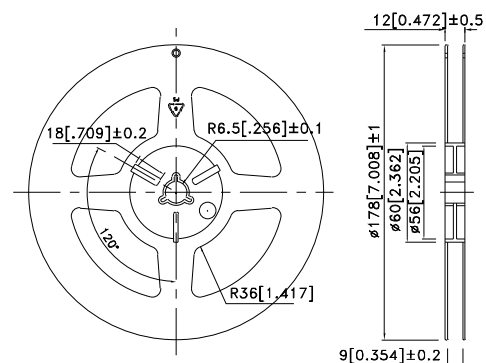Reflow Soldering Profile For Lead-free SMT Process.



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.
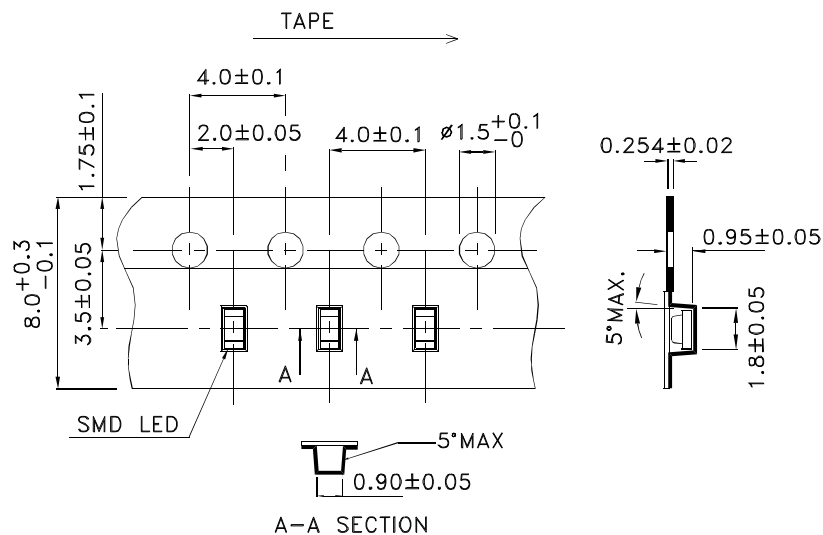3. Number of reflow process shall be 2 times or less.

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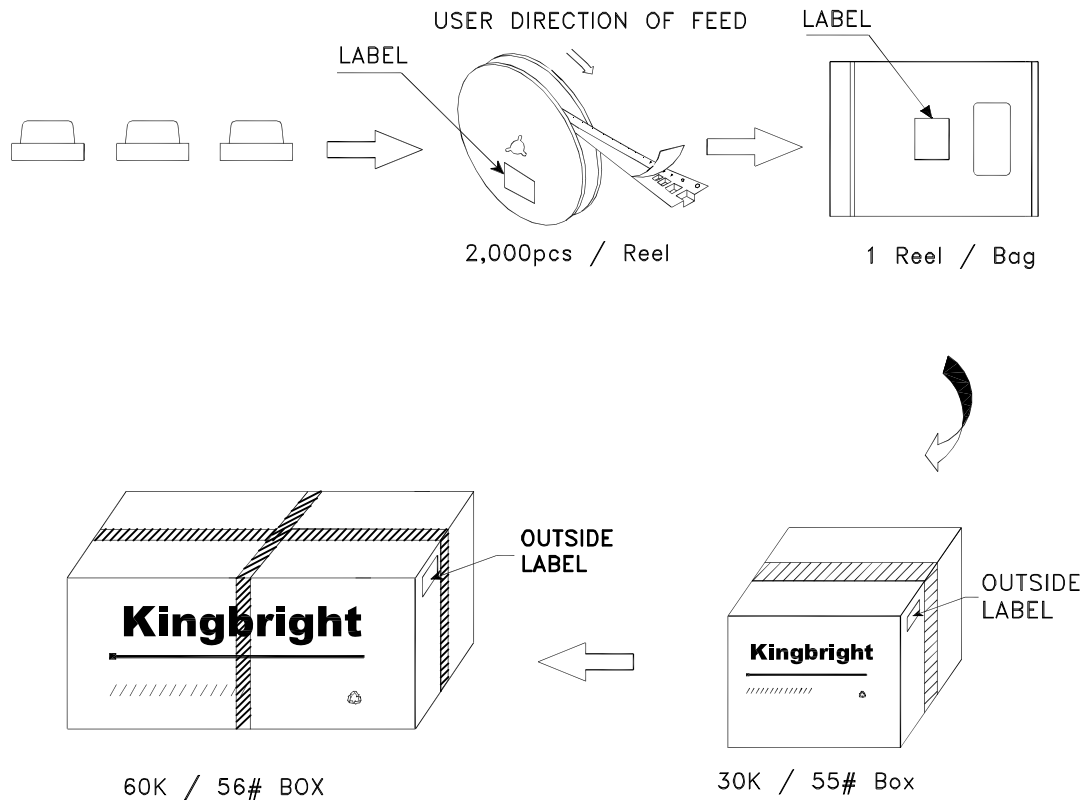## (Units : mm; Tolerance: ± 0.1)
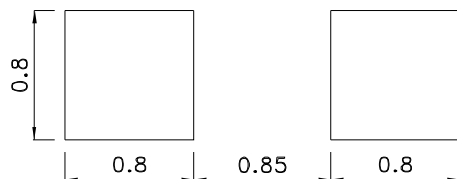


## Reel Dimension



## Tape Dimensions
## (Units : mm)



A-A SECTION

# Kingbright

**PACKING & LABEL SPECIFICATIONS**                    **APT1608QBC/D**

USER DIRECTION OF FEED          LABEL

LABEL

2,000pcs / Reel                    1 Reel / Bag

OUTSIDE
LABEL

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OUTSIDE
LABEL

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60K / 56# BOX                        30K / 55# Box

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P/NO: APT1608xxx

QTY:   2,000 pcs          Q.C.          Q C
                                        xx xx xxxx
S/N:    XXXX                            PASSED
CODE: XXX

LOT NO:

xxxxxxxxxxxxxxxxxxxxxx                  RoHS Compliant

All design applications should refer to Kingbright application notes available at
http://www.KingbrightUSA.com/ApplicationNotes