



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

Part Number: APTB1612LVBDZGKC

Blue  
Green

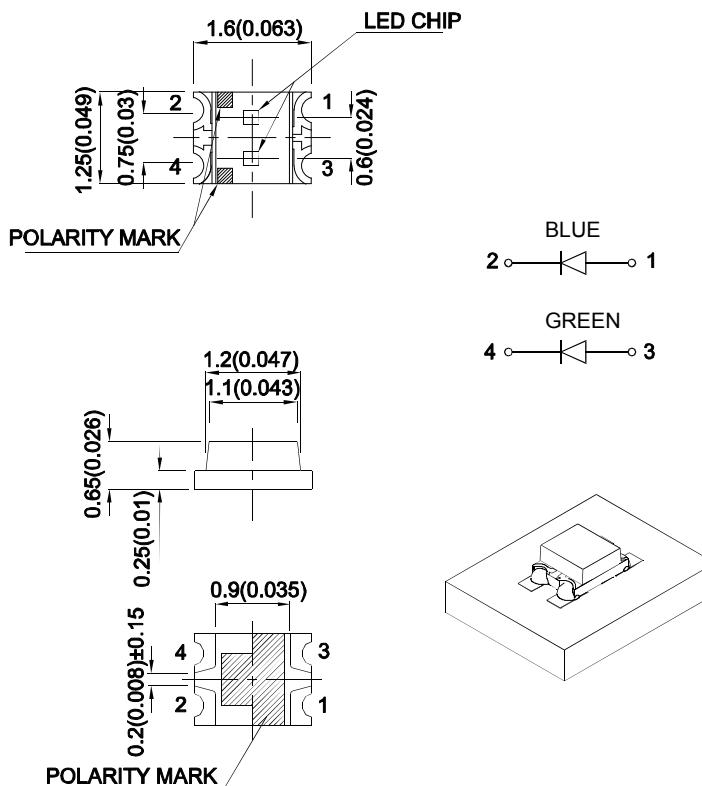
## Features

- 1.6mmx1.25mm SMD 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.
- Low current IF=2mA operating.
- RoHS compliant.

## Descriptions

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

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.



# Kingbright

## Selection Guide

Part No.	Emitting Color (Material)	Lens Type	I <sub>v</sub> (mcd) [2] @ 2mA		Viewing Angle [1]
			Min.	Typ.	
APTB1612LVBDZGKC	Blue (InGaN)	Water Clear	10	20	120°
	Green (InGaN)		30	50	

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	Emitting Color	Min.	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Green		465 515		nm	I <sub>f</sub> =2mA
λD [1]	Dominant Wavelength	Blue Green		470 525		nm	I <sub>f</sub> =2mA
Δλ1/2	Spectral Line Half-width	Blue Green		22 35		nm	I <sub>f</sub> =2mA
C	Capacitance	Blue Green		100 45		pF	V <sub>f</sub> =0V;f=1MHz
V <sub>F</sub> [2]	Forward Voltage	Blue Green	2.2 2.2	2.65 2.65	3 3.1	V	I <sub>f</sub> =2mA
I <sub>R</sub>	Reverse Current	Blue Green			50 50	uA	V <sub>R</sub> = 5V

Notes:

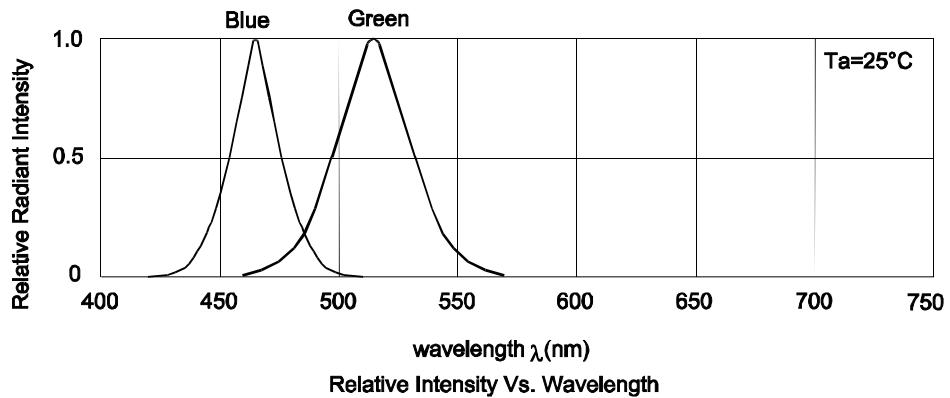
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

## Absolute Maximum Ratings at TA=25°C

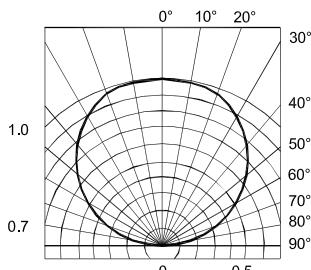
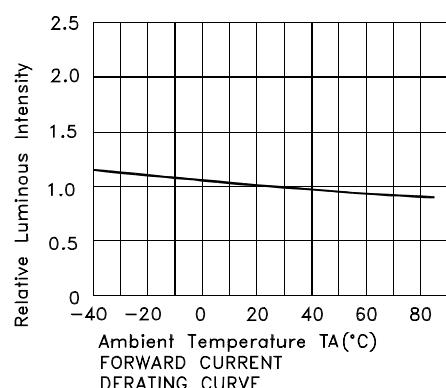
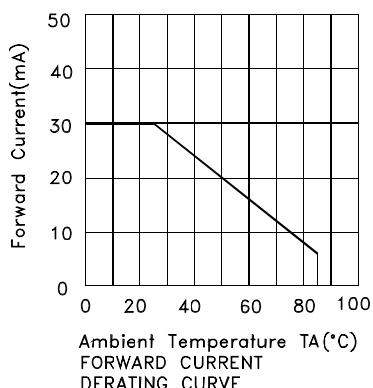
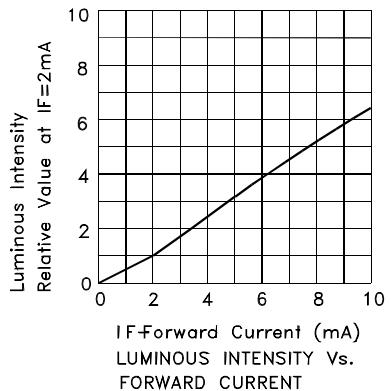
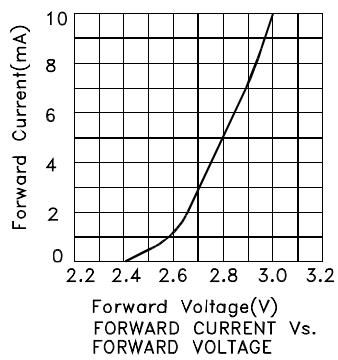
Parameter	Blue	Green	Units
Power dissipation	90	77.5	mW
DC Forward Current	30	25	mA
Peak Forward Current [1]	100	150	mA
Electrostatic Discharge Threshold (HBM)	250	450	V
Reverse Voltage	5		V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

Note:

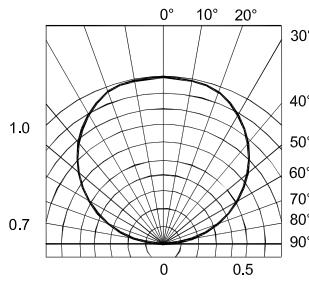
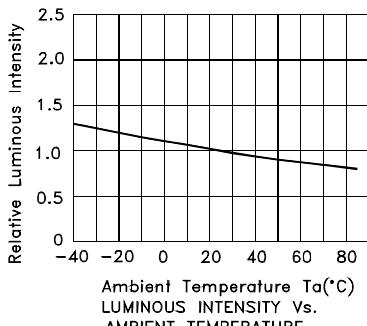
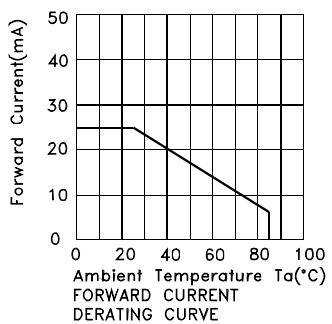
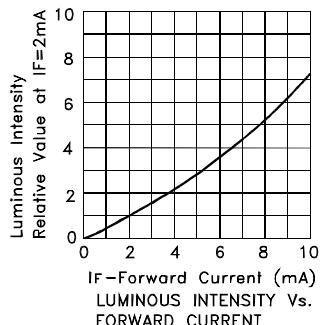
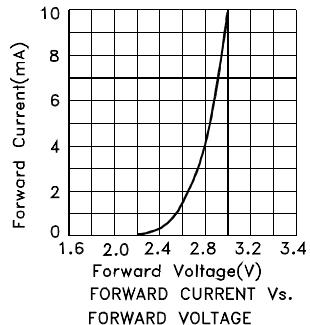
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



APTB1612LVBDZGKC  
Blue



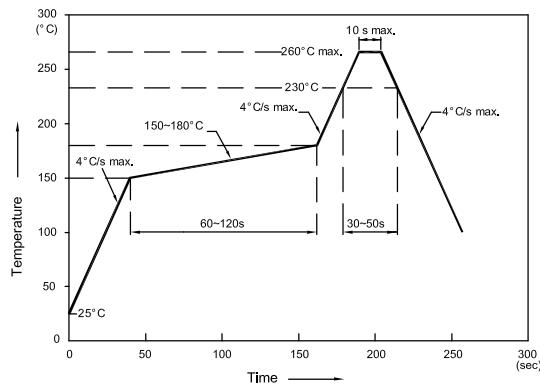
## Green



APTB1612LVBDZGKC

**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.**

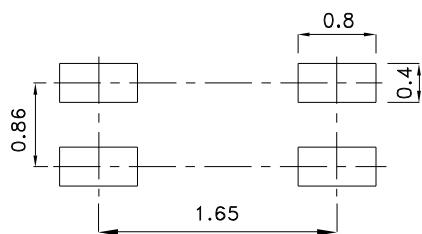
## Reflow Soldering Profile For Lead-free SMT Process.



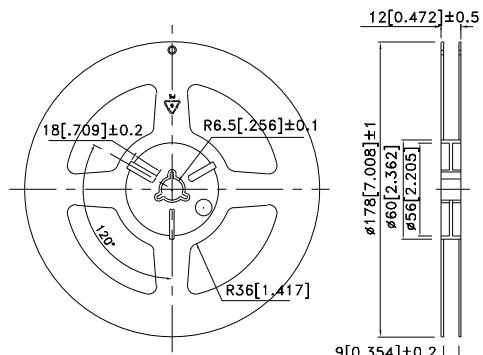
## NOTES:

- 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.

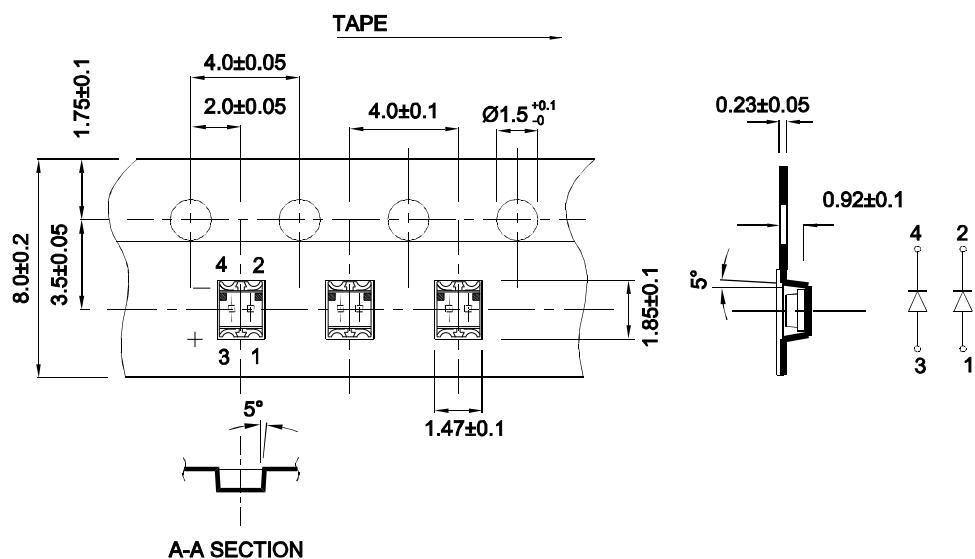
## Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



## Reel Dimension

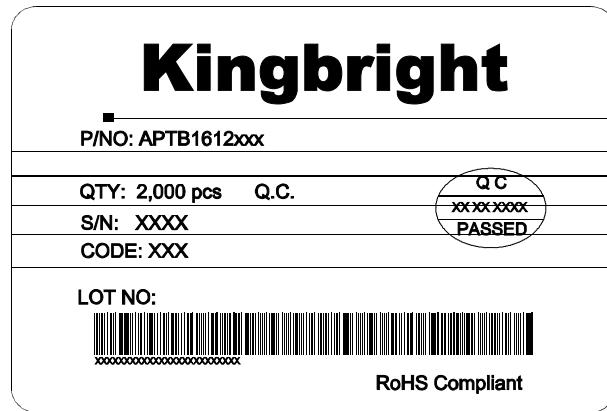
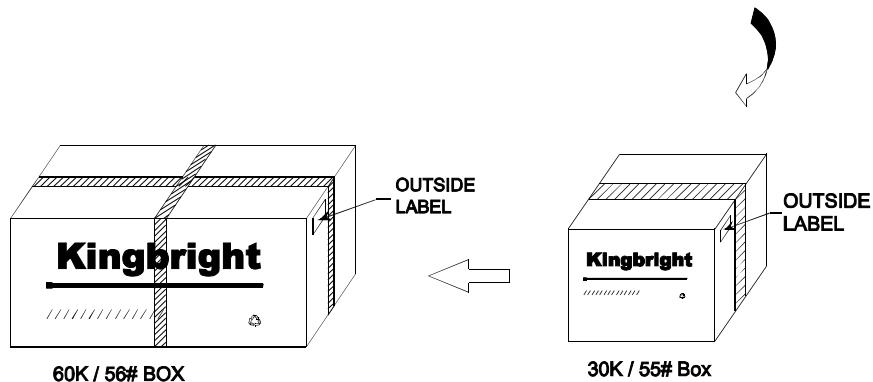
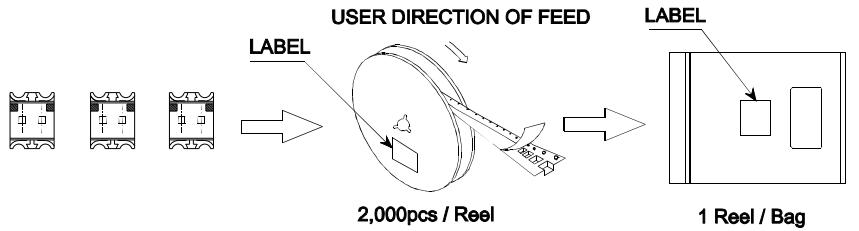


## **Tape Dimensions (Units : mm)**



## PACKING & LABEL SPECIFICATIONS

APTB1612LVBDZGKC



### Terms and conditions for the usage of this document

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
4. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.
5. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright.
6. All design applications should refer to Kingbright application notes available at <http://www.KingbrightUSA.com/ApplicationNotes>