Part Number: APTB1612LQBDCGKC

Blue
Green

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

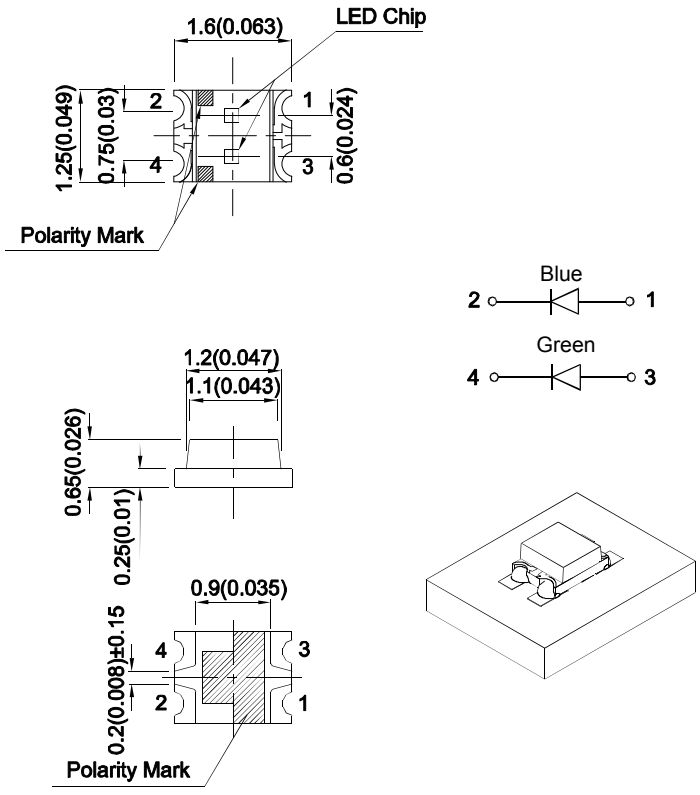
Features

- 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 AlGaInP on GaAs substrate 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.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 2mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APTB1612LQBDCGKC	Blue (InGaN)	Water Clear	6	12	150°
	Green (AlGaInP)		1.2	3	

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 CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

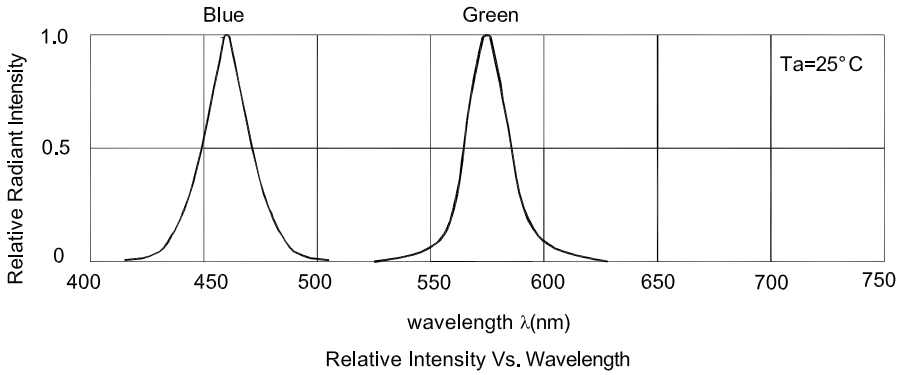
Symbol	Parameter	Emitting Color	Min.	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Green		460 574		nm	I_F=2mA
λD [1]	Dominant Wavelength	Blue Green		465 570		nm	I_F=2mA
Δλ1/2	Spectral Line Half-width	Blue Green		25 20		nm	I_F=2mA
C	Capacitance	Blue Green		100 15		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Blue Green	2.2 1.5	2.65 1.9	3 2.1	V	I_F=2mA
I_R	Reverse Current	Blue Green			50 10	uA	V_R = 5V

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

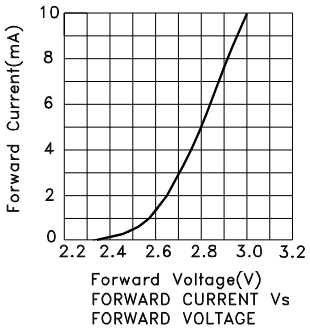
Parameter	Blue	Green	Units
Power dissipation	90	63	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	150	150	mA
Electrostatic Discharge Threshold (HBM)	250	3000	V
Reverse Voltage	5		V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

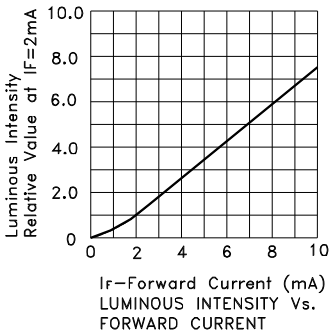


Relative Intensity Vs. Wavelength

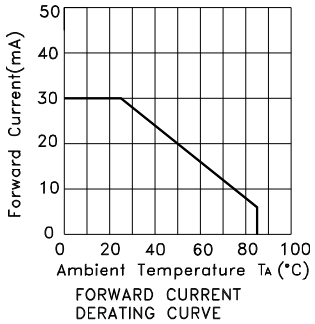
APTB1612LQBDCGKC
Blue



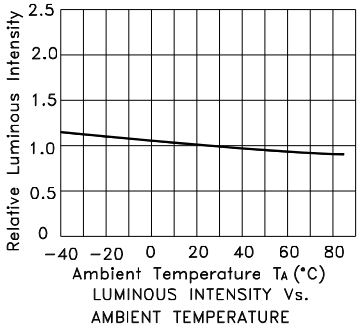
FORWARD CURRENT Vs
FORWARD VOLTAGE



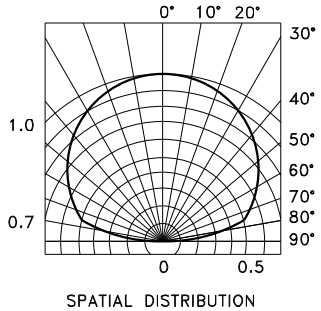
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

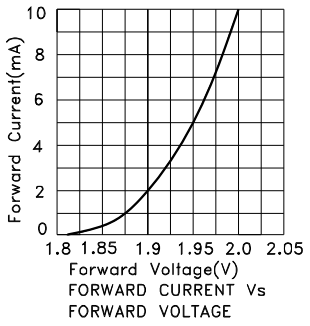


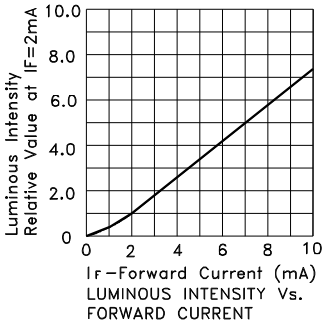
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

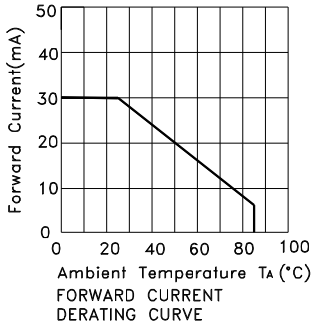


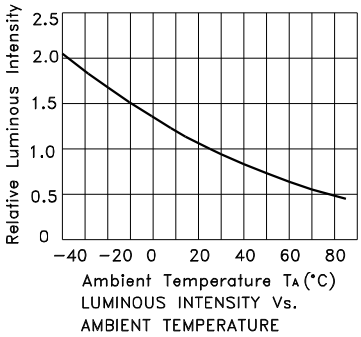
SPATIAL DISTRIBUTION

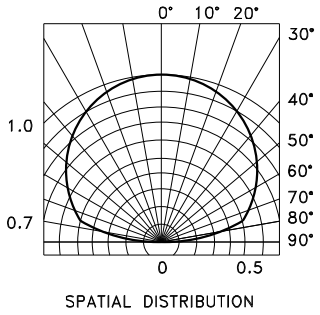
Green


Forward Current(mA)
10
8
6
4
2
0
1.8 1.85 1.9 1.95 2.0 2.05
Forward Voltage(V)
FORWARD CURRENT Vs
FORWARD VOLTAGE


Luminous Intensity
Relative Value at IF=2mA
10.0
8.0
6.0
4.0
2.0
0
0 2 4 6 8 10
IF–Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT


Forward Current(mA)
50
40
30
20
10
0
0 20 40 60 80 100
Ambient Temperature TA (°C)
FORWARD CURRENT
DERATING CURVE


Relative Luminous Intensity
2.5
2.0
1.5
1.0
0.5
0
–40 –20 0 20 40 60 80
Ambient Temperature TA (°C)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE


0° 10° 20°
30°
40°
50°
60°
70°
80°
90°
1.0
0.7
0
0.5
SPATIAL DISTRIBUTION

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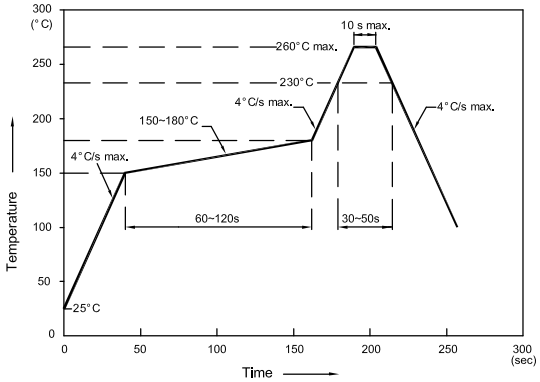
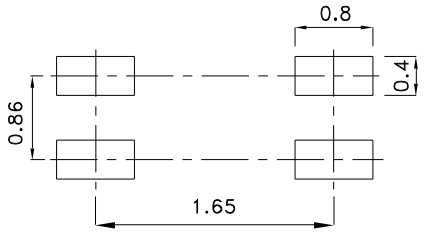
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

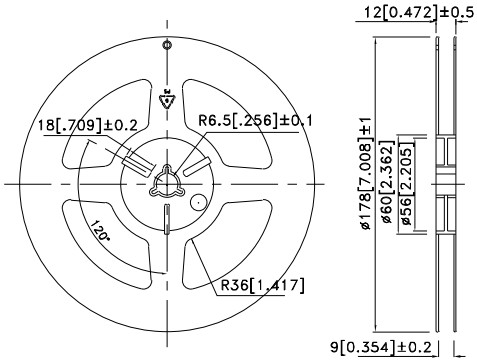


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

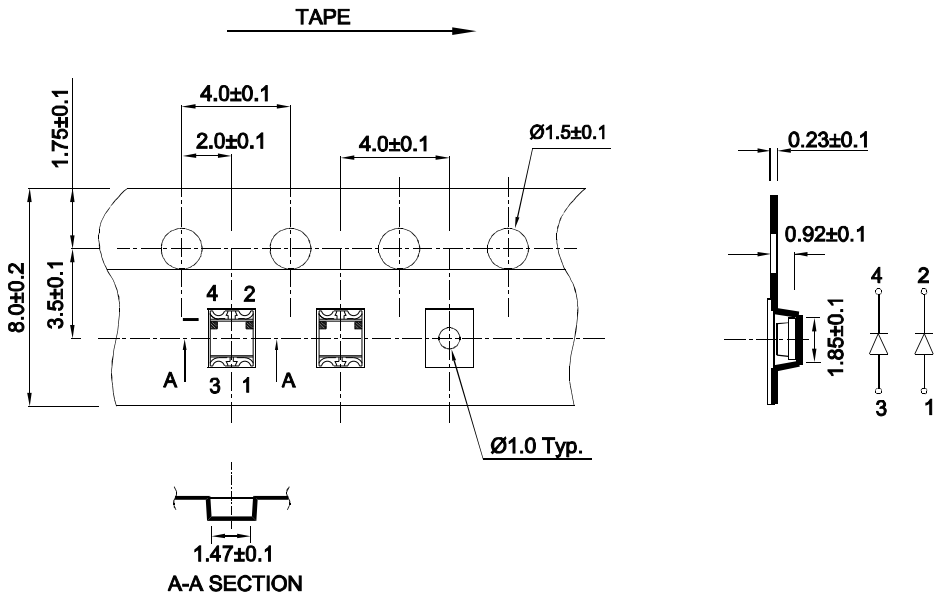
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



Tape Dimensions (Units : mm)



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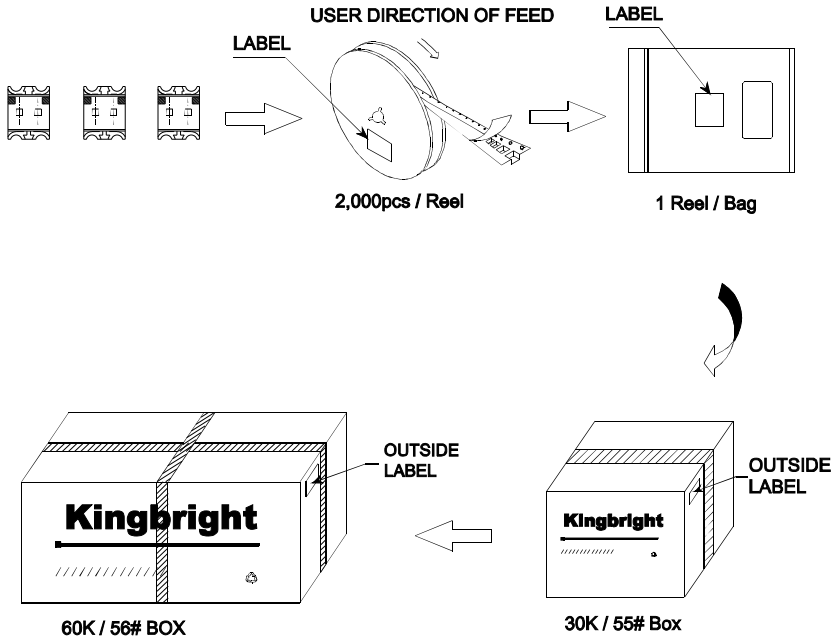
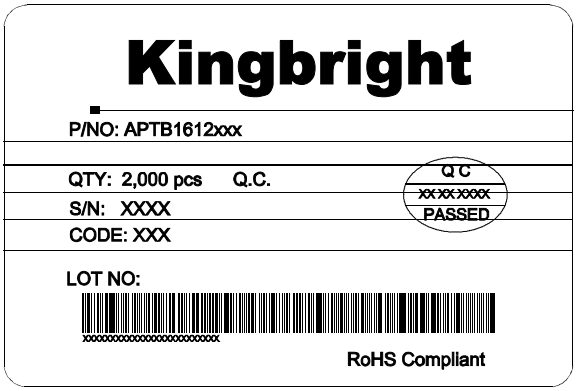
PACKING & LABEL SPECIFICATIONS **APTB1612LQBDCGKC**





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