Kingbright

2.0x1.25mm BI-COLOR SMD CHIP LED LAMP

Part Number: APB2012QBDZGC

Blue
Green

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

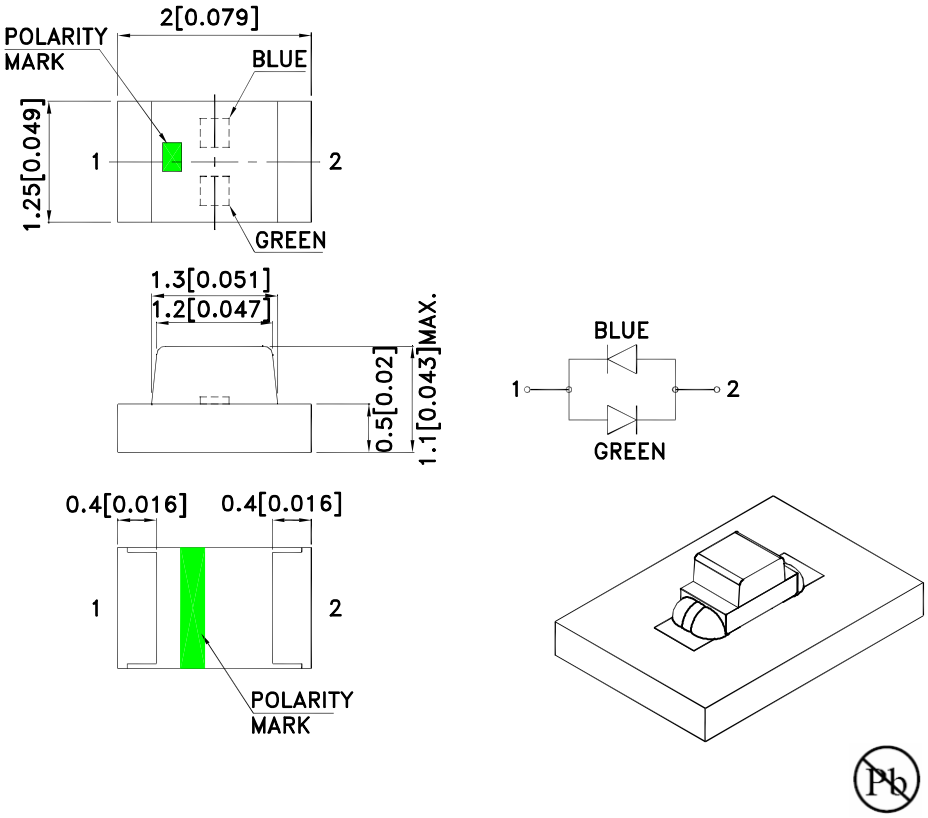
Features

- 2.0mmx1.25mm SMT LED, 1.1mm thickness.
- Bi -color,Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Description

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.
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



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.15(0.006") 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
APB2012QBDZGC	Blue (InGaN)	Water Clear	40	80	150°
	Green (InGaN)		200	300	

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

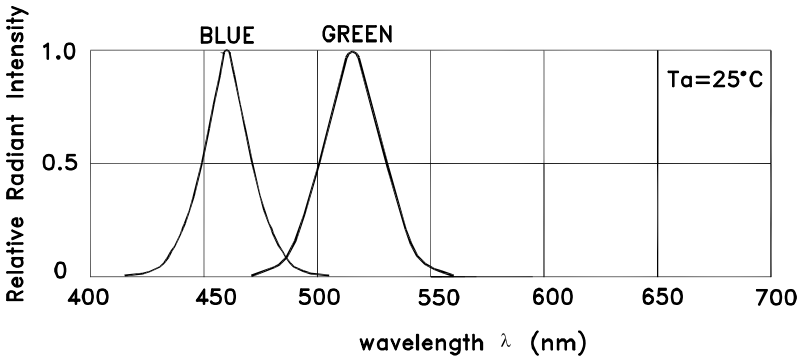
Symbol	Parameter	Device	Typ.		Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Green	468 515	*460 *515		nm	I_F=20mA
λD [1]	Dominant Wavelength	Blue Green	470 525	*465 *525		nm	I_F=20mA
Δλ1/2	Spectral Line Half-width	Blue Green	25 30			nm	I_F=20mA
C	Capacitance	Blue Green	100 45			pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Blue Green	3.3 3.3		4 4.1	V	I_F=20mA

Notes:
1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
*Wavelength value is traceable to the CIE127-2007 compliant national standards.

Absolute Maximum Ratings at TA=25°C

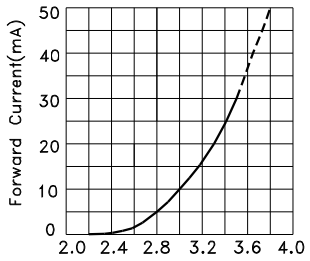
Parameter	Blue	Green	Units
Power dissipation	120	102.5	mW
DC Forward Current	30	25	mA
Peak Forward Current [1]	150	150	mA
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

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

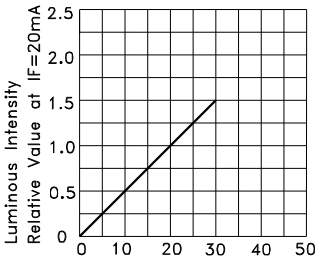


RELATIVE INTENSITY Vs. WAVELENGTH

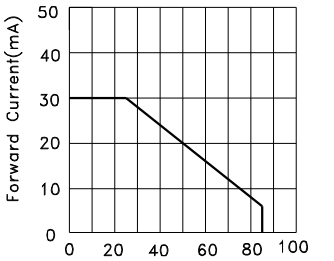
APB2012QBDZGC
Blue



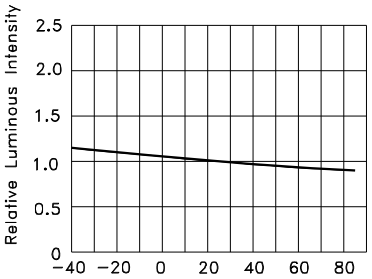
FORWARD CURRENT Vs.
FORWARD VOLTAGE



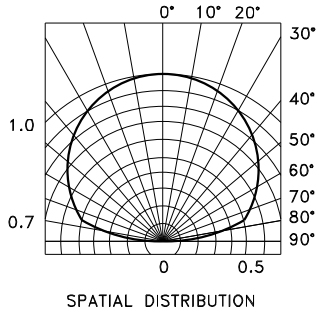
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE

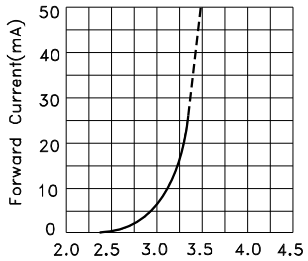


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

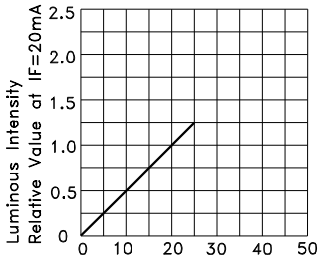


SPATIAL DISTRIBUTION

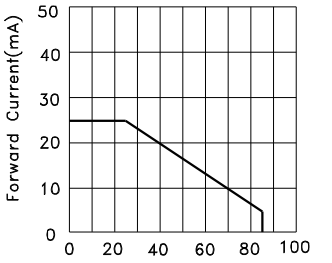
Green



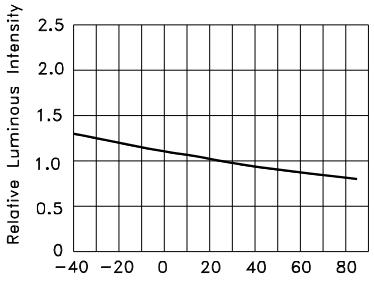
FORWARD CURRENT Vs.
FORWARD VOLTAGE



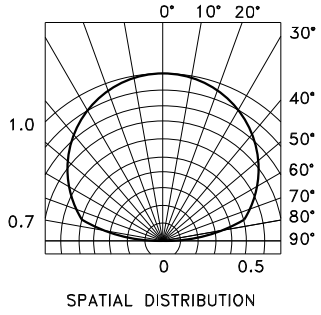
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

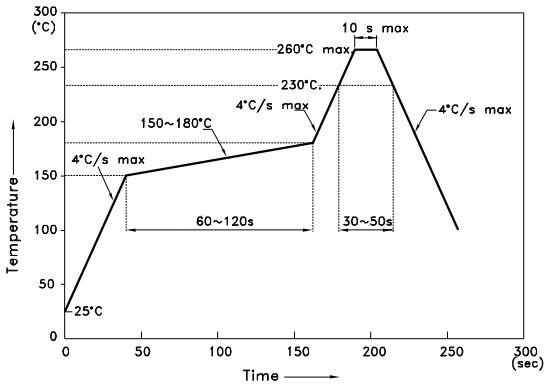


SPATIAL DISTRIBUTION

APB2012QBDZGC

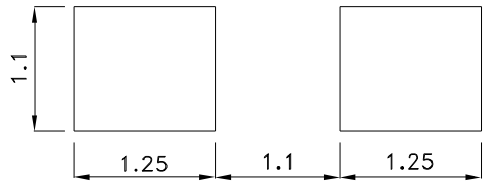
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

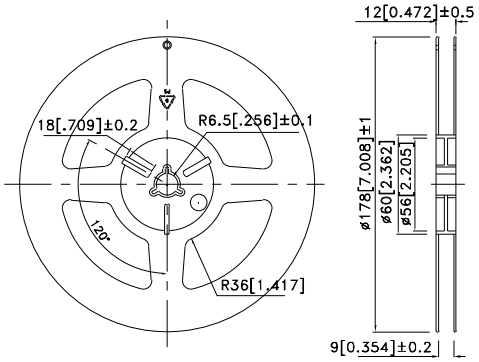


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

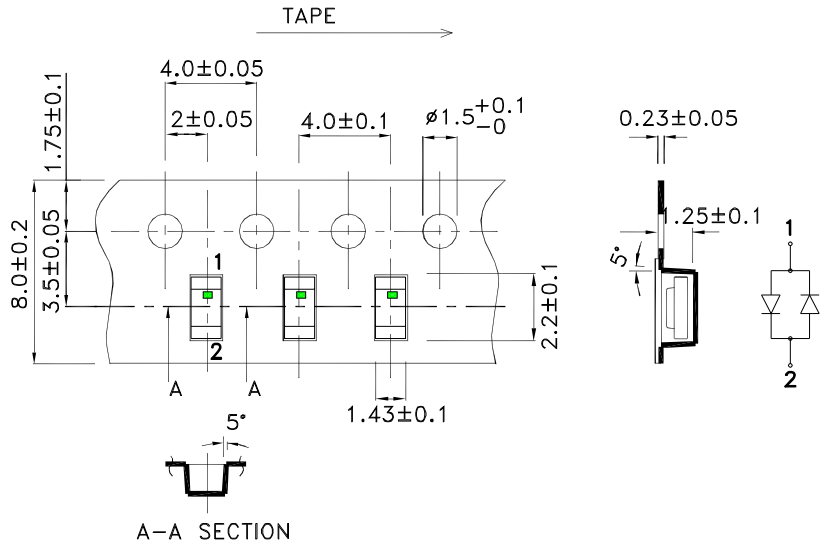
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



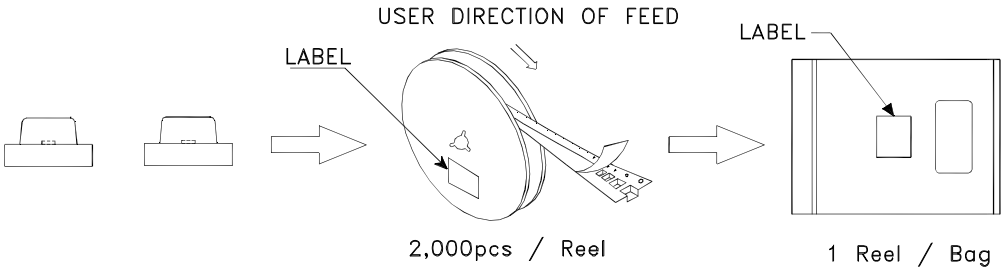
Reel Dimension

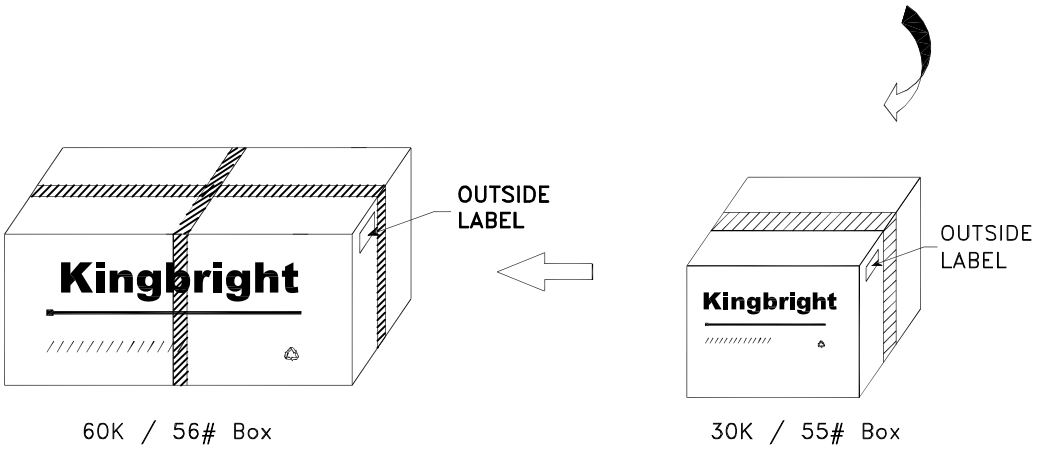


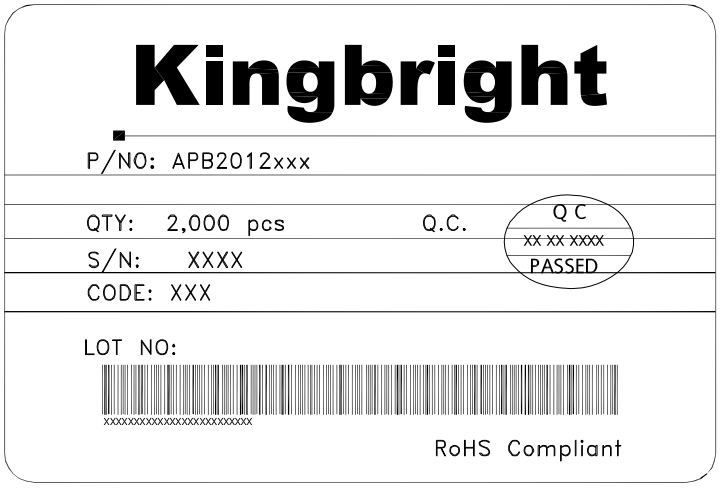
Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS **APB2012QBDZGC**







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