

# APTB1612LVBDSYKJ3C

1.6 x 1.25 mm Bi-Color SMD Chip LED Lamp



## DESCRIPTIONS

- The Blue source color devices are made with InGaN Light Emitting Diode
- The Super Bright Yellow device is based on light emitting diode chip made from AlGaInP
- · 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

### **FEATURES**

- 1.6 mm x 1.25 mm SMD LED. 0.65 mm thickness
- · Bi-color, low power consumption
- Wide viewing angle
- · Ideal for backlight and indicator
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- RoHS compliant

### **APPLICATIONS**

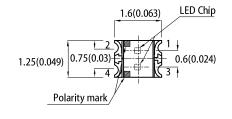
- Backlight
- Status indicator
- Home and smart appliances
- · Wearable and portable devices
- Healthcare applications

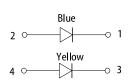
#### **ATTENTION**

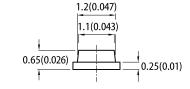
Observe precautions for handling electrostatic discharge sensitive devices

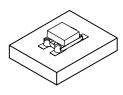


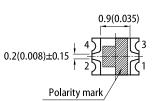
## PACKAGE DIMENSIONS





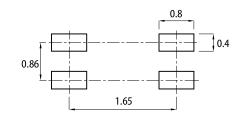






#### **RECOMMENDED SOLDERING PATTERN**

(units : mm; tolerance :  $\pm 0.1$ )



Notes

1. All dimensions are in millimeters (inches).

Tolerance is ±0.2(0.008") unless otherwise noted.
 The specifications, characteristics and technical data described in the datasheet are subject to

change without prior notice. The device has a single mounting surface. The device must be mounted according to the specifications 4.

#### SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	lv (mcd) @ 2mA <sup>[2]</sup>		Viewing Angle <sup>[1]</sup>
			Min.	Тур.	201/2
APTB1612LVBDSYKJ3C	Blue (InGaN)	Water Clear	10	20	150°
	Super Bright Yellow (AlGaInP)		20	35	150

Notes

- 1. 61/2 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.

# **Kingbright**

### ELECTRICAL / OPTICAL CHARACTERISTICS at T<sub>A</sub>=25°C

Parameter	Symbol	Emitting Color	Value			Unit
			Min.	Тур.	Max.	
Wavelength at Peak Emission $I_F = 2mA$	$\lambda_{peak}$	Blue Super Bright Yellow	-	465 590	-	nm
Dominant Wavelength $I_F = 2mA$	$\lambda_{dom}$ <sup>[1]</sup>	Blue Super Bright Yellow	-	470 590	-	nm
Spectral Bandwidth at 50% $\Phi$ REL MAX I <sub>F</sub> = 2mA	Δλ	Blue Super Bright Yellow	-	22 20	-	nm
Capacitance	С	Blue Super Bright Yellow	-	100 45	-	pF
Forward Voltage $I_F = 2mA$	V <sub>F</sub> <sup>[2]</sup>	Blue Super Bright Yellow	2.2 1.5	2.65 1.85	3.0 2.1	V
Reverse Current ( $V_R = 5V$ )	I <sub>R</sub>	Blue Super Bright Yellow	-	-	50 10	uA

Notes:

The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±1nm.)
 Forward voltage: ±0.1V.
 Wavelength value is traceable to CIE127-2007 standards.
 Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

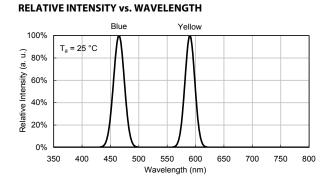
Parameter	Symbol	Va	Unit		
		Blue	Super Bright Yellow		
Power Dissipation	P <sub>D</sub>	120	75	mW	
Reverse Voltage	V <sub>R</sub>	5	5	V	
Junction Temperature	TJ	115	115	°C	
Operating Temperature	T <sub>op</sub>	-40 Te	°C		
Storage Temperature	T <sub>stg</sub>	-40 Te	°C		
DC Forward Current	I <sub>F</sub>	30	30	mA	
Peak Forward Current	I <sub>FM</sub> <sup>[1]</sup>	100	140	mA	
Electrostatic Discharge Threshold (HBM)	-	250	3000	V	

### ABSOLUTE MAXIMUM RATINGS at T<sub>A</sub>=25°C

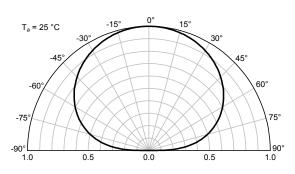
Notes: 1. 1/10 Duty Cycle, 0.1ms Pulse Width. 2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

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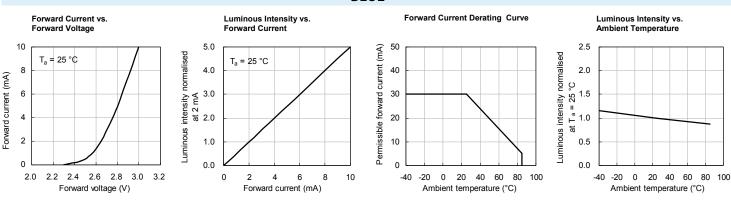
#### **TECHNICAL DATA**



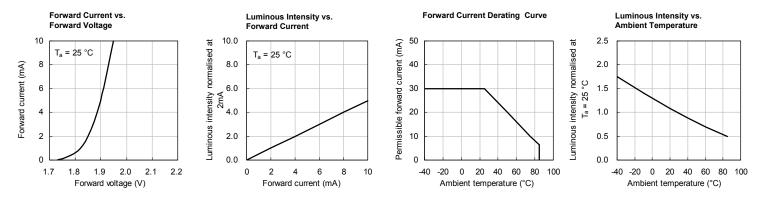
#### SPATIAL DISTRIBUTION



BLUE



#### **SUPER BRIGHT YELLOW**



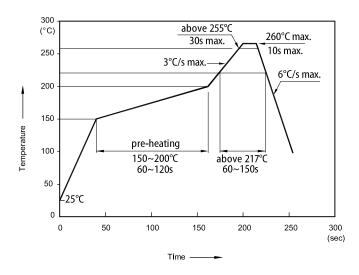
# **Kingbright**

# APTB1612LVBDSYKJ3C

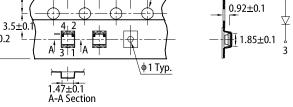
4 2

#### **TECHNICAL DATA**

#### **REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS**



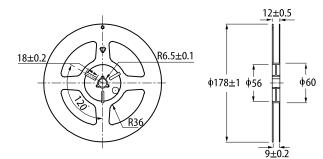
#### TAPE 4±0.1 \$1.5±0.1 0.23±0.1 2±0.1 4±0.1 $1.75 \pm 0.1$



#### **REEL DIMENSION** (units : mm)

8<u>±</u>0.2

TAPE SPECIFICATIONS (units : mm)

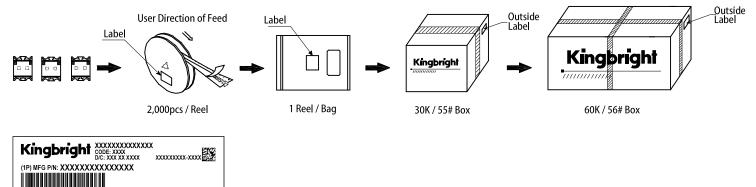


#### Notes

Don't cause stress to the LEDs while it is exposed to high temperature.
 The maximum number of reflow soldering passes is 2 times.
 Reflow soldering is recommended. Other soldering methods are not recommended as they might

cause damage to the product

#### **PACKING & LABEL SPECIFICATIONS**



#### **PRECAUTIONARY NOTES**

DE: XXXX (4L) COO: XX

- The information included in this document reflects representative usage scenarios and is intended for technical reference only.
- 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. 2
- 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. 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
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1 RoHS Comp