Kingbright

2.0x1.25mm SMD CHIP LED LAMP

Part Number: APHBM2012LVBDSEKJ3C

Blue
Hyper Red

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

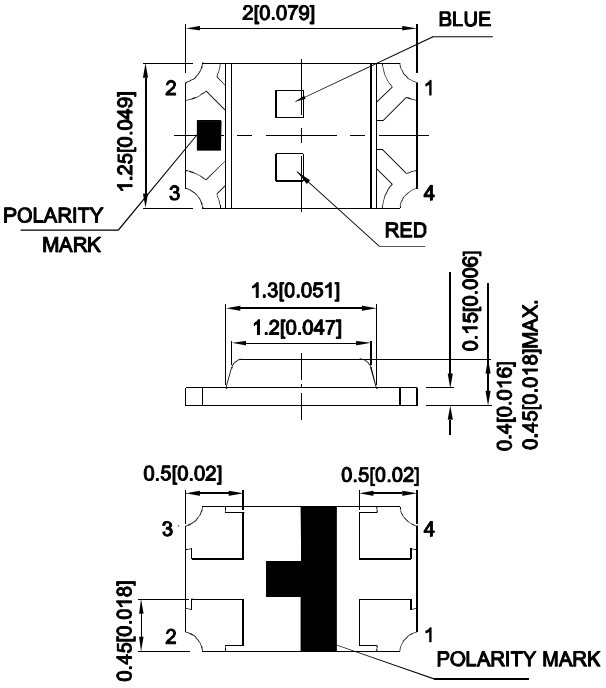
Features

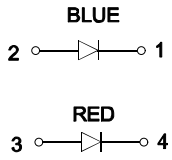
- 2.0mmx1.25mm SMD LED, 0.45mm max. thickness.
- Bi -color, low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- Low current IF=2mA operating.
- RoHS compliant.

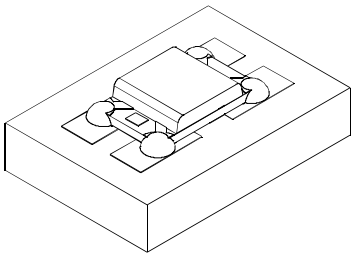
Descriptions

- The Blue source color devices are made with InGaN Light Emitting Diode.
- The Hyper Red 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.

Package Dimensions







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.

Selection Guide

Part No.	Emitting Color (Material)	Lens Type	Iv (mcd) [2] @ 2mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
APHBM2012LVBDSEKJ3C	Blue (InGaN)	Water Clear	10	20	120°
			*10	*20	
	Hyper Red (AlGaInP)		80	150	
			*30	*60	

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%.
* Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

Electrical / Optical Characteristics at TA=25°C

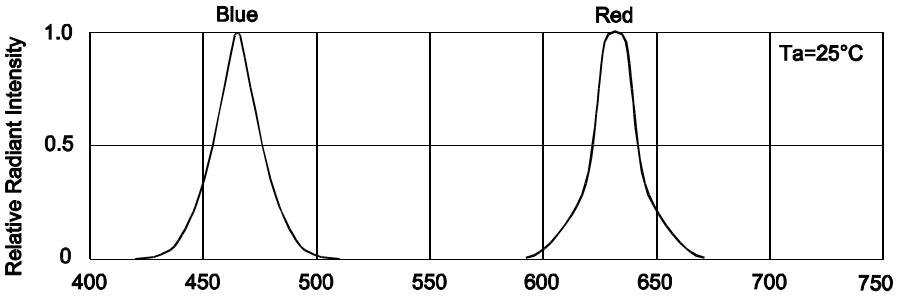
Symbol	Parameter	Emitting Color	Min.	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Hyper Red		465 640		nm	I_F=2mA
λD [1]	Dominant Wavelength	Blue Hyper Red		470 625		nm	I_F=2mA
Δλ1/2	Spectral Line Half-width	Blue Hyper Red		22 20		nm	I_F=2mA
C	Capacitance	Blue Hyper Red		100 27		pF	V_F=0V;f=1MHz
V_F [2]	Forward Voltage	Blue Hyper Red	2.2 1.5	2.65 1.8	3 2.1	V	I_F=2mA
I_R	Reverse Current	Blue Hyper Red			50 10	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.
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

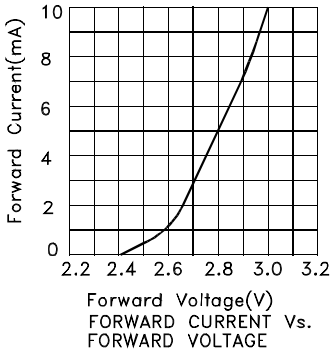
Parameter	Blue	Hyper Red	Units
Power dissipation	90	63	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	100	150	mA
Electrostatic Discharge Threshold (HBM)	250	3000	V
Reverse Voltage	5		V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

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

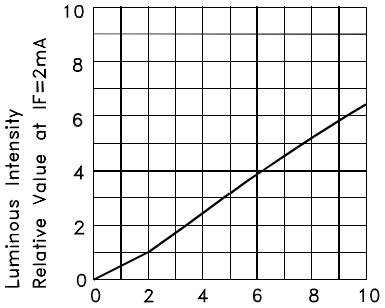


Relative Intensity Vs. Wavelength

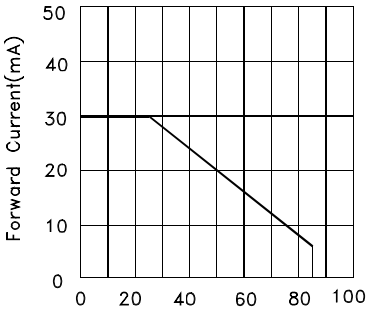
APHBM2012LVBDSEKJ3C
Blue



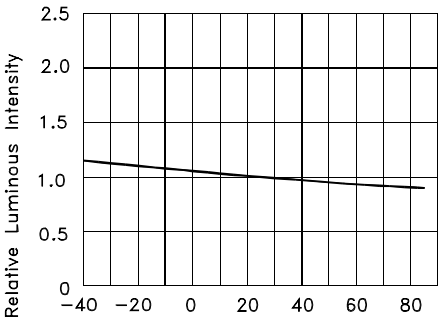
FORWARD CURRENT Vs. FORWARD VOLTAGE



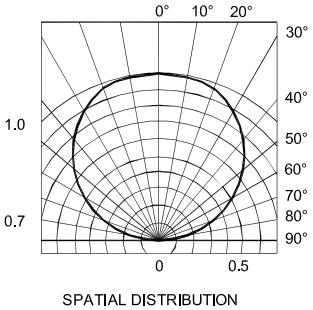
LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE

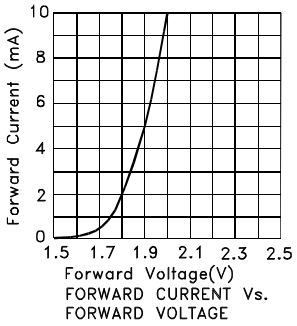


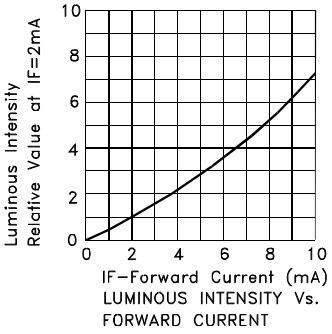
FORWARD CURRENT DERATING CURVE

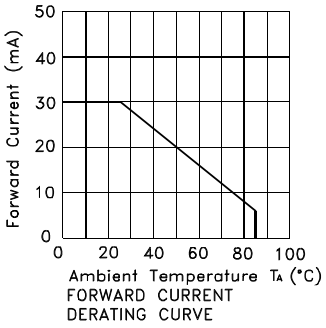


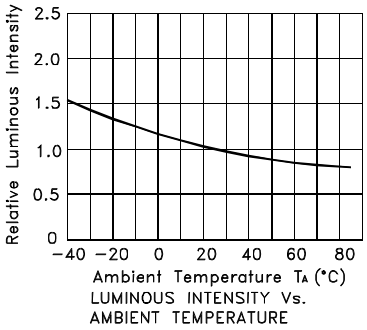
SPATIAL DISTRIBUTION

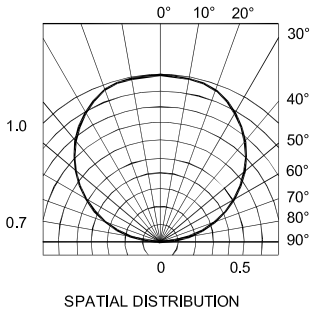
Hyper Red











SPATIAL DISTRIBUTION

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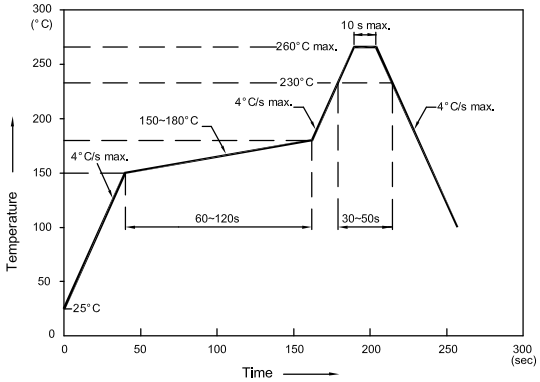
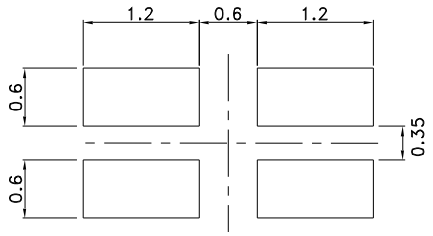
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

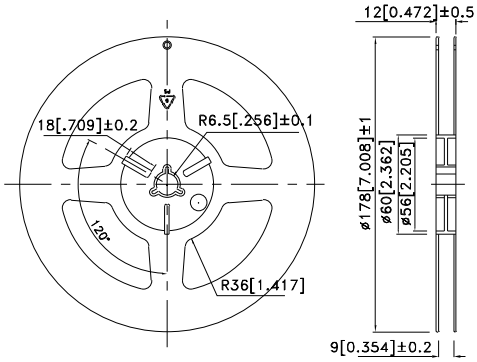


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

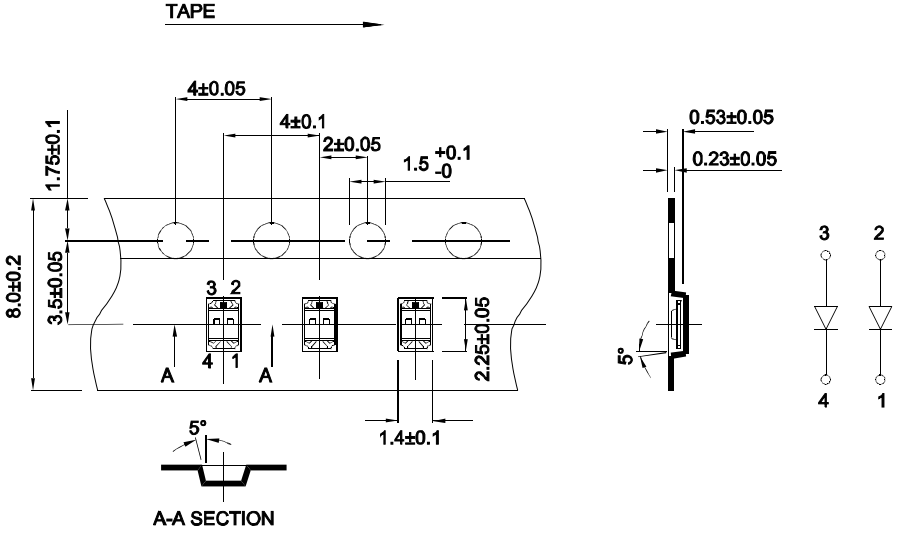
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



Tape Dimensions (Units : mm)



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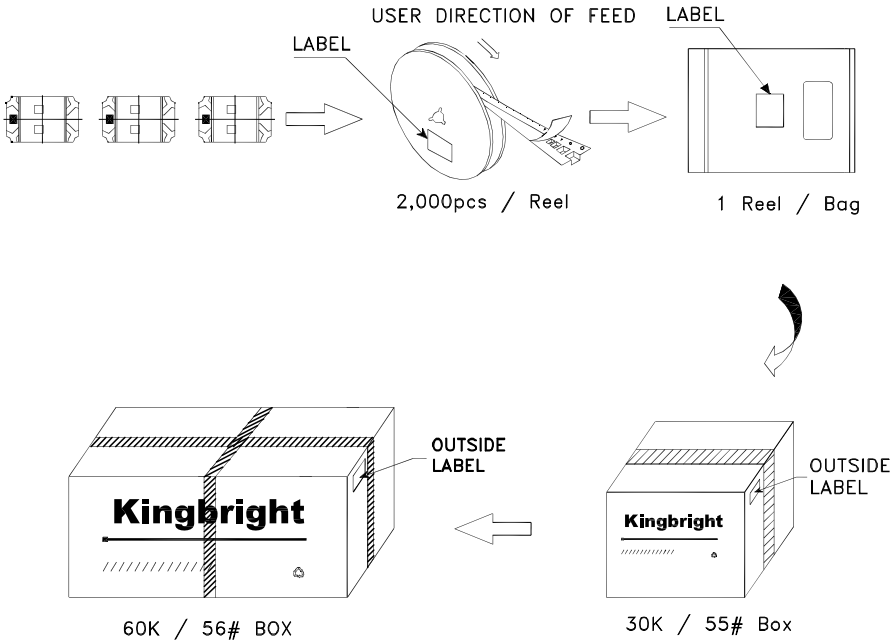
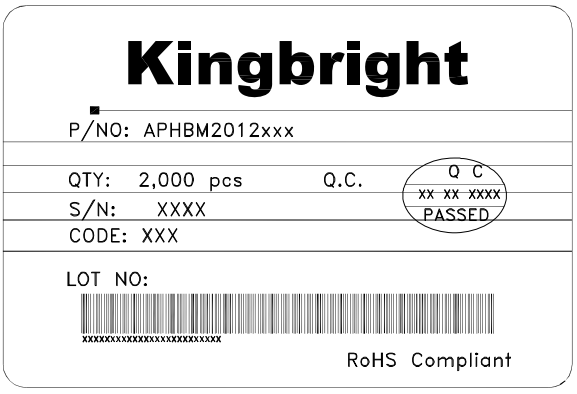
PACKING & LABEL SPECIFICATIONS **APHBM2012LVBDSEKJ3C**





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