



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

Part Number: KPHBM-2012QBDSURKC

Blue  
Hyper Red

### Features

- 2.0mmx1.25mm SMT 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.
- RoHS compliant.

### Description

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

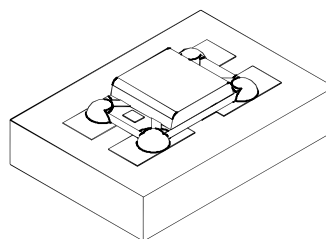
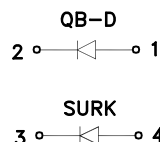
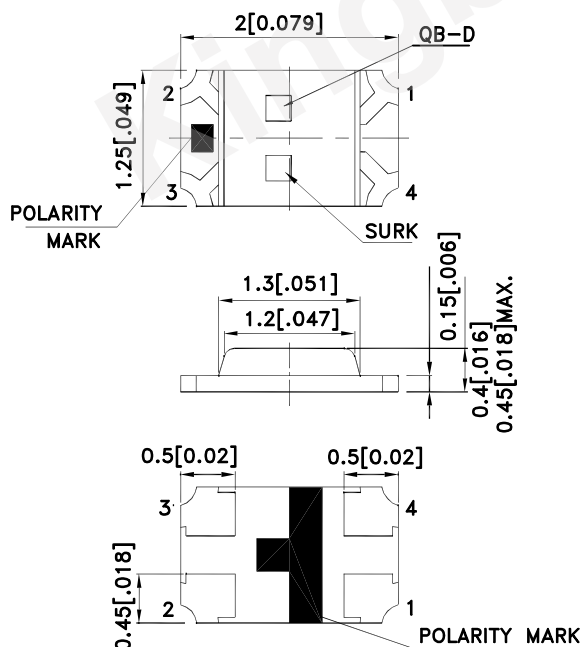
The Hyper Red source color devices are made with Al-GaN on GaAs substrate Light Emitting Diode.

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  $\pm 0.1$  (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.	Dice	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KPHBM-2012QBDSURKC	Blue (InGaN)	Water Clear	40	80	120°
			*40	*80	
	Hyper Red (AlGaInP)		120	250	
			*40	*80	

### 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	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue Hyper Red	460 645		nm	IF=20mA
λD [1]	Dominant Wavelength	Blue Hyper Red	465 630		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Blue Hyper Red	25 28		nm	IF=20mA
C	Capacitance	Blue Hyper Red	100 35		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue Hyper Red	3.3 1.95	4 2.5	V	IF=20mA
IR	Reverse Current	Blue Hyper Red		50 10	uA	VR = 5V

### Notes:

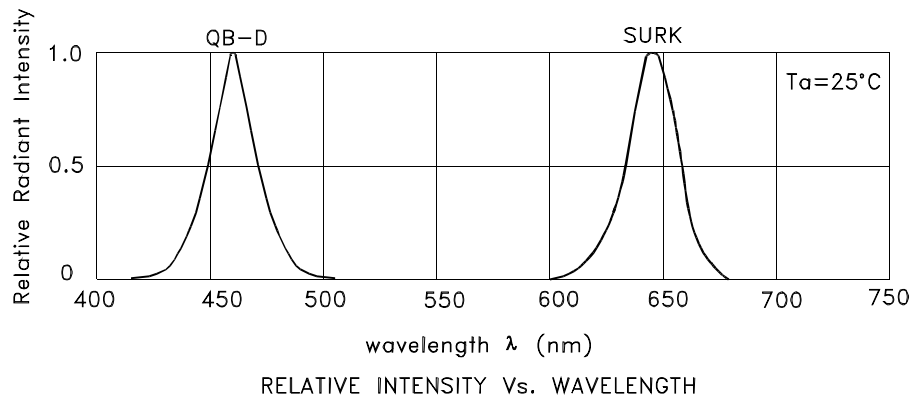
- 1.Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
- 3.Wavelength value is traceable to the CIE127-2007 compliant national standards.

## Absolute Maximum Ratings at TA=25°C

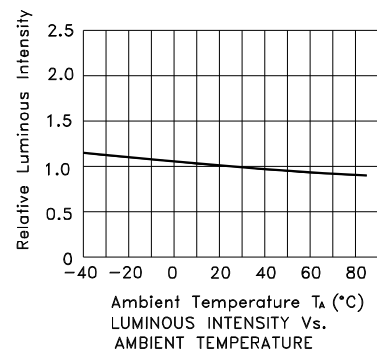
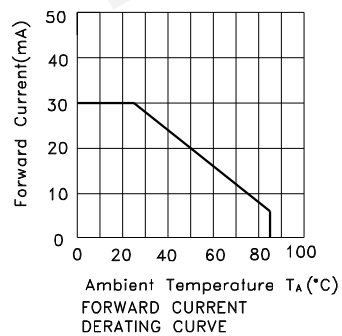
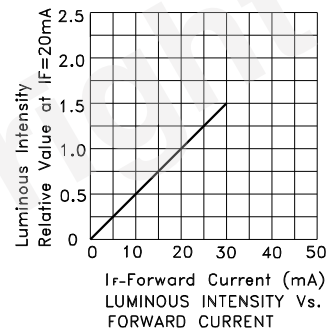
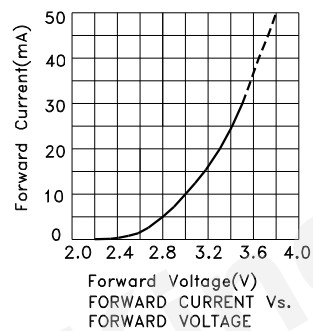
Parameter	Blue	Hyper Red	Units
Power dissipation	120	75	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	150	185	mA
Reverse Voltage	5		V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

### Note:

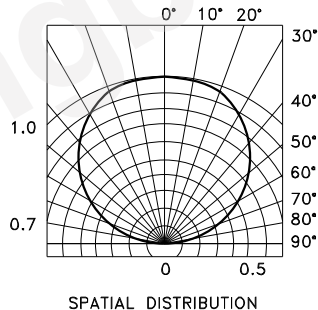
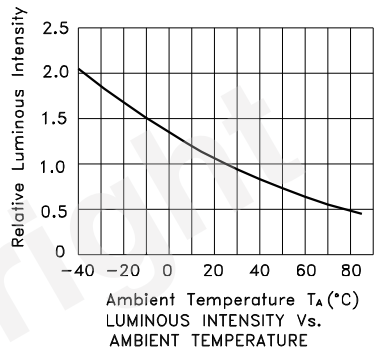
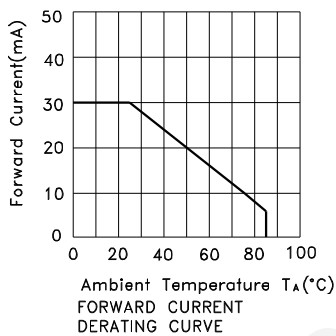
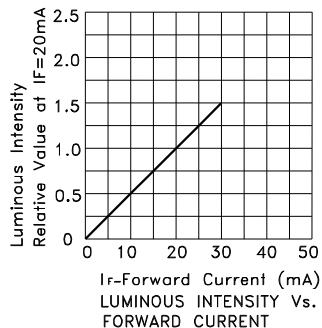
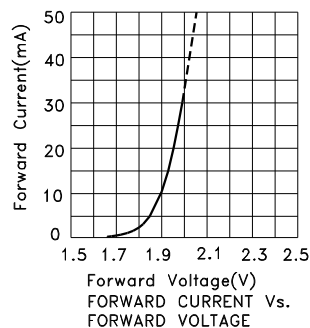
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



## KPHBM-2012QBDSURKC Blue



## Hyper Red



## KPHBM-2012QBDSURKC

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.

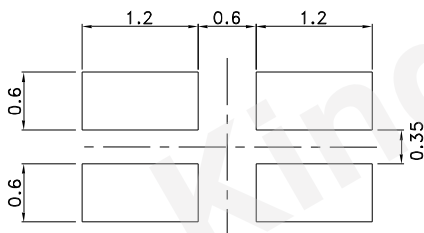
Reflow Soldering Profile For Lead-free SMT Process.



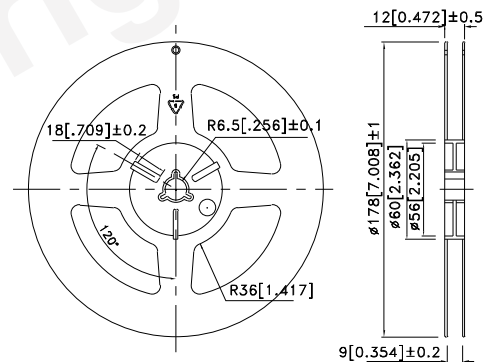
### NOTES:

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.

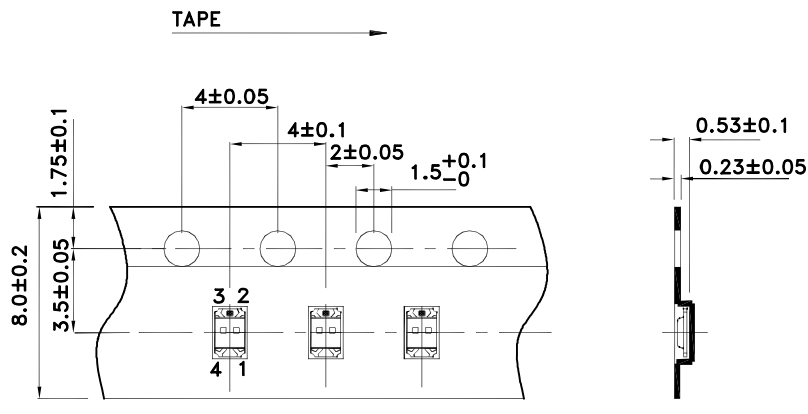
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



### Reel Dimension

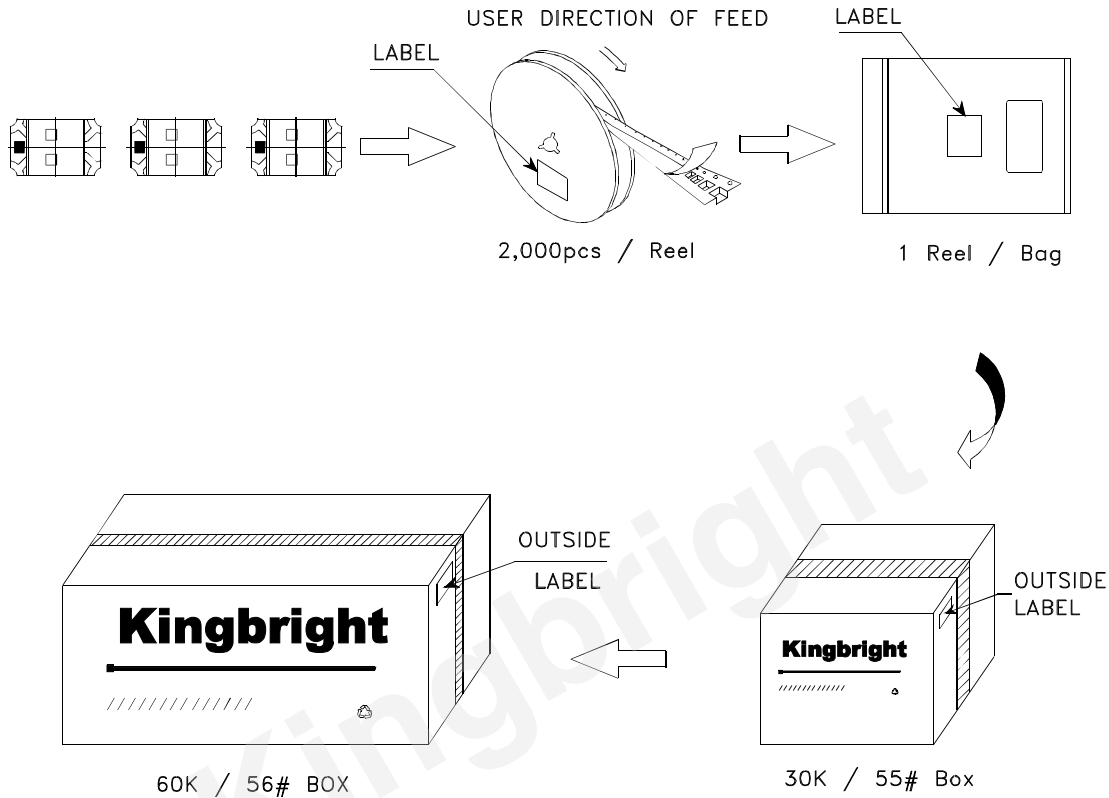



### Tape Dimensions (Units : mm)



PACKING & LABEL SPECIFICATIONS

KPHBM-2012QBDSURKC



<b>Kingbright</b>		
P/NO: KPHBM-2012xxx		
QTY: 2,000 pcs	Q.C.	<div>Q C XX XX XXXX PASSED</div>
S/N: XXXX		
CODE: XXX		
LOT NO:		
 XXXXXXXXXXXXXXXXXXXXXXXXXXXX		
RoHS Compliant		

Detailed application notes are listed on our website.  
[http://www.kingbright.com/application\\_notes](http://www.kingbright.com/application_notes)