Kingbright

3.0mmx1.0mm RIGHT ANGLE SMD CHIP LED LAMP

Part Number: KPBA-3010SURKCGKC

Hyper Red
Green

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- 3.0x2.0x1.0mm right angle SMD LED, 1.0mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000 pcs / reel.
- Moisture sensitivity level : level 3.
- Tinned pads for improved solderability
- RoHS compliant.

Descriptions

- The Hyper Red source color devices are made with Al GaInP on GaAs substrate 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
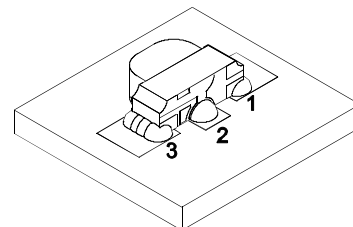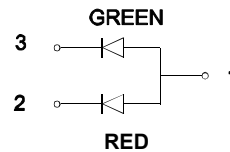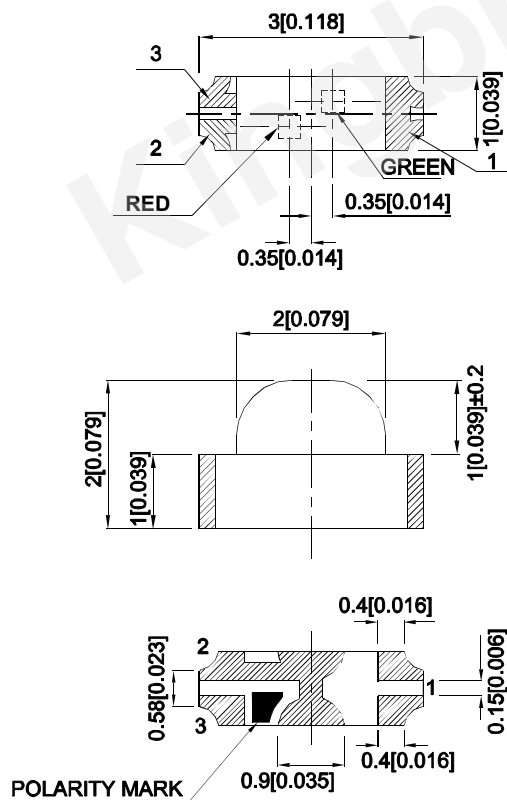
Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.15(0.006") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

Kingbright

Selection Guide

| Part No. | Emitting Color (Material) | Lens Type | Iv (mcd) [2] @ 20mA | | Viewing Angle [1] |
			Min.	Typ.	2θ1/2
KPBA-3010SURKCGKC	Hyper Red (AlGaInP)	Water Clear	120	300	140°
			*40	*80	
	Green (AlGaInP)		40	70	
			*40	*70	

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 CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

| Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Hyper Red Green	645 574		nm	IF=20mA
λD [1]	Dominant Wavelength	Hyper Red Green	630 570		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Hyper Red Green	28 20		nm	IF=20mA
C	Capacitance	Hyper Red Green	35 15		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Hyper Red Green	1.95 2.1	2.5 2.5	V	IF=20mA
IR	Reverse Current	Hyper Red Green		10 10	uA	VR = 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

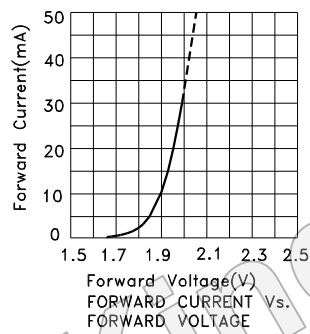| Parameter	Hyper Red	Green	Units
Power dissipation	75	75	mW
DC Forward Current	30	30	mA
Peak Forward Current [1]	185	150	mA
Reverse Voltage	5		V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

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.
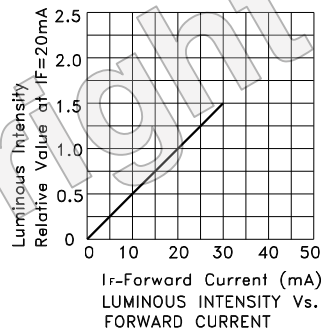
Kingbright
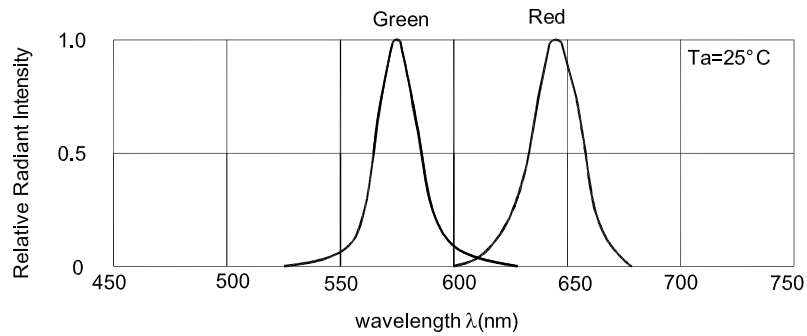
Relative Intensity Vs. Wavelength

KPBA-3010SURKCGKC
Hyper Red

FORWARD CURRENT Vs.
FORWARD VOLTAGE

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

FORWARD CURRENT
DERATING CURVE

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

SPATIAL DISTRIBUTION

Kingbright

Green

Forward Current(mA) vs. Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE

Luminous Intensity Relative Value at IF=20mA vs. Ir-Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT
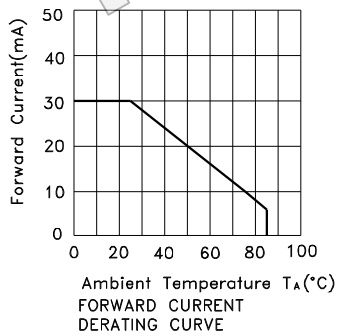
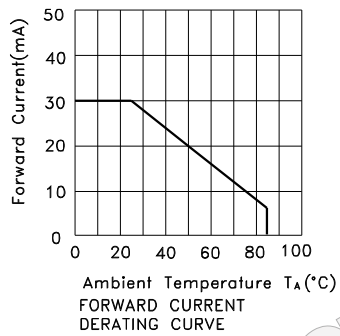Forward Current(mA) vs. Ambient Temperature TA(°C)
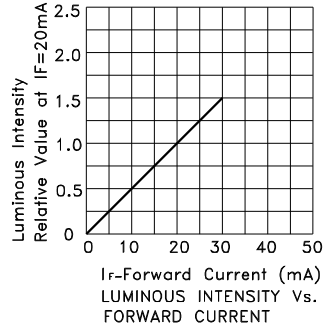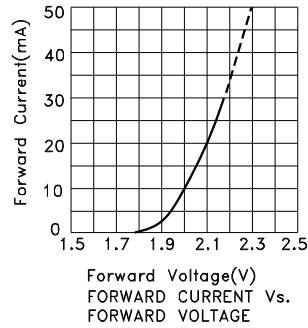FORWARD CURRENT
DERATING CURVE
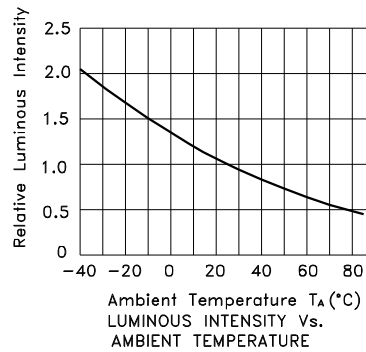
Relative Luminous Intensity vs. Ambient Temperature TA(°C)
LUMINOUS INTENSITY Vs.
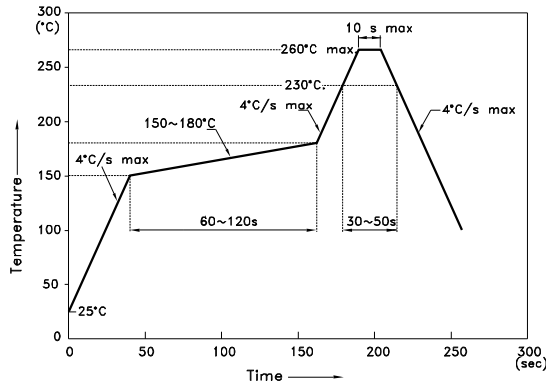AMBIENT TEMPERATURE

SPATIAL DISTRIBUTION

Kingbright
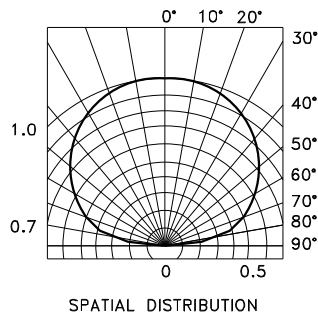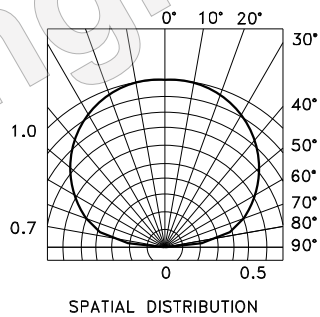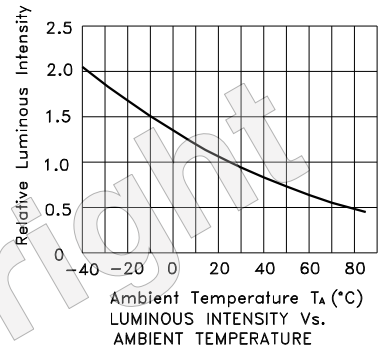
KPBA-3010SURKCGKC

Reflow soldering is recommended and the soldering profile is shown below.
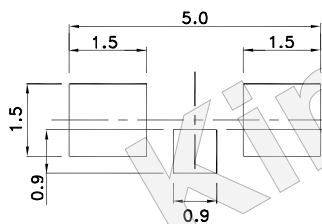**Other soldering methods are not recommended as they might cause damage to the product.**
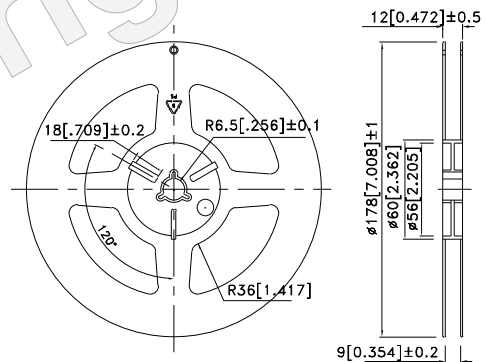
Reflow Soldering Profile For Lead-free SMT Process.

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.
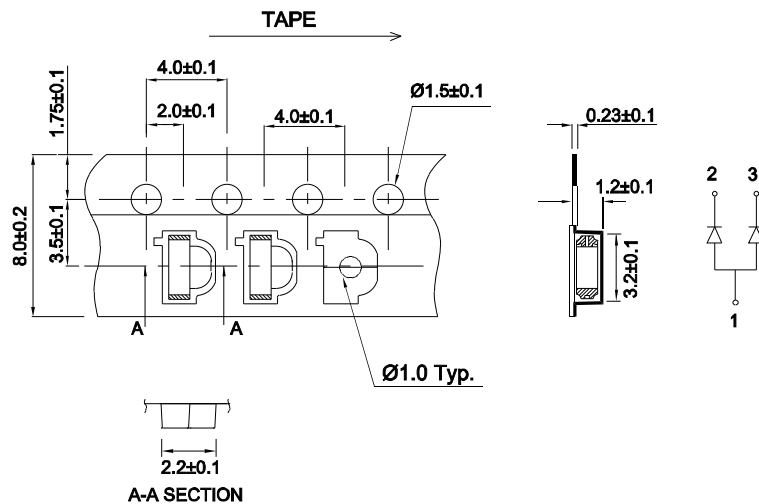3. Number of reflow process shall be 2 times or less.

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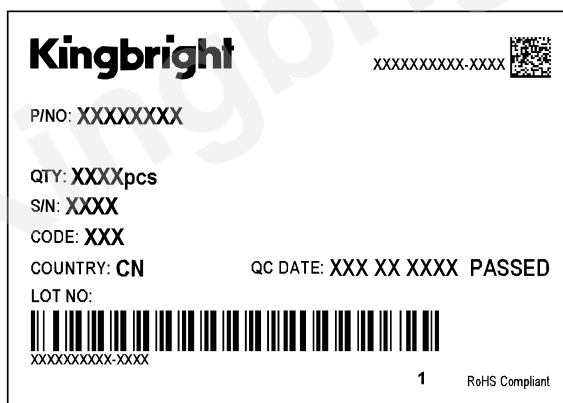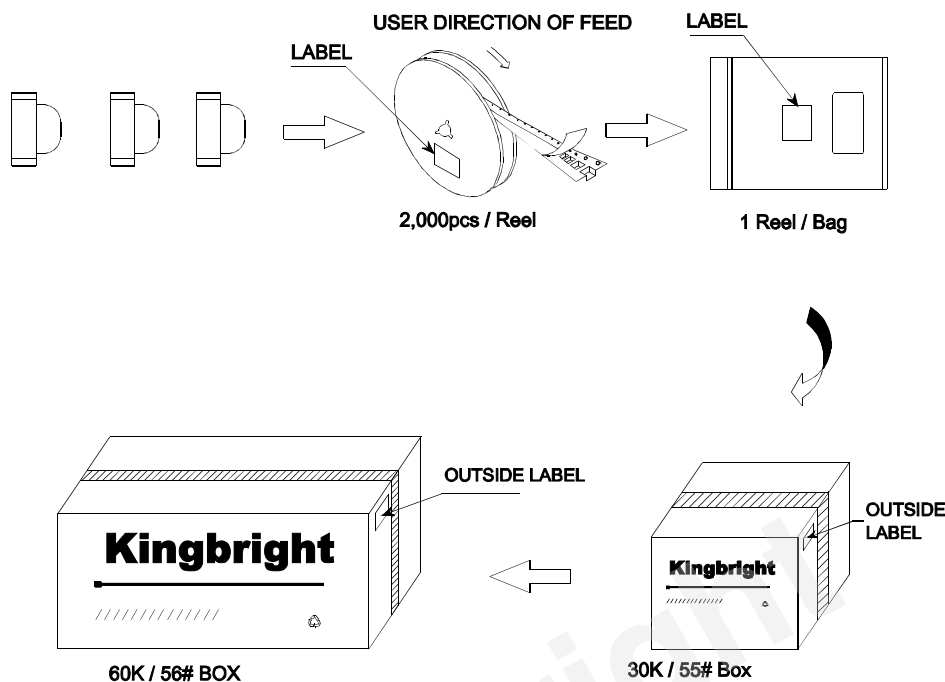(Units : mm; Tolerance: ± 0.1)

Reel Dimension

Tape Dimensions
(Units : mm)

Kingbright

PACKING & LABEL SPECIFICATIONS **KPBA-3010SURKCGKC**

USER DIRECTION OF FEED LABEL

LABEL

2,000pcs / Reel 1 Reel / Bag

OUTSIDE LABEL OUTSIDE LABEL

Kingbright **Kingbright**

60K / 56# BOX 30K / 55# Box

Kingbright

XXXXXXXXXX-XXXX

P/NO: XXXXXXXX

QTY: XXXXpcs
S/N: XXXX
CODE: XXX
COUNTRY: CN   QC DATE: XXX XX XXXX PASSED
LOT NO:

XXXXXXXXXX-XXXX   1   RoHS Compliant

Terms and conditions for the usage of this document

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

2. 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.

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.

4. 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 liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.

5. The contents and information of this document may not be reproduced or re-transmitted without permission by Kingbright.

6. All design applications should refer to Kingbright application notes available at http://www.kingbright.com/application_notes