Kingbright

1.6x0.8x0.2mm (0603) SMD CHIP LED LAMP

Part Number: KPG1-1608PBC-TT-5MAV Blue

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- 1.6mmX0.8mm SMD LED, 0.2mm thickness.
- Low power consumption.
- Wide viewing angle.
- Compatible with automatic placement equipment.
- Ideal for backlight and indicator.
- Package: 4000pcs / reel.
- Moisture sensitivity level : level 3.
- Low current IF=5mA operating.
- RoHS compliant.

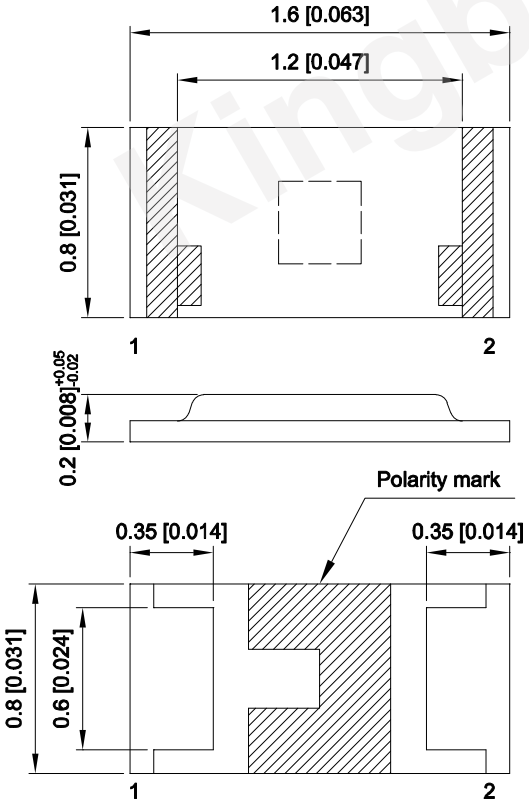
Descriptions

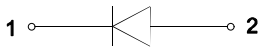
- The Blue source color devices are made with InGaN on SiC substrate Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

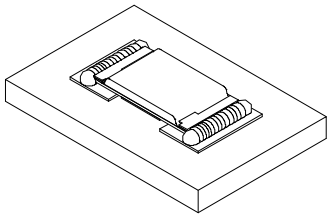
Applications

1.Mobile phone Keypad indicator and backlight.
2.Flat backlight for LCD, switch and symbol.
3.Toys.

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] @ 5mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KPG1-1608PBC-TT-5MAV	Blue (InGaN)	Water Clear	8	20	120°

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 CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Emitting Color	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue	461		nm	I_F=5mA
λD [1]	Dominant Wavelength	Blue	467		nm	I_F=5mA
Δλ1/2	Spectral Line Half-width	Blue	22		nm	I_F=5mA
V_F [2]	Forward Voltage	Blue	2.9	3.1	V	I_F=5mA
I_R	Reverse Current	Blue		50	uA	V_R=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.

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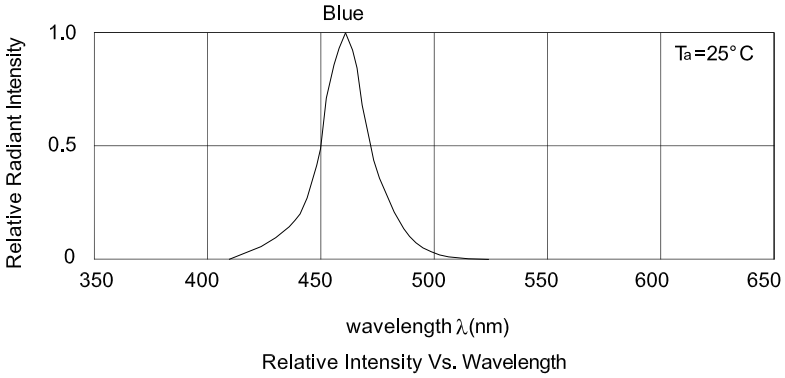
Absolute Maximum Ratings at TA=25°C

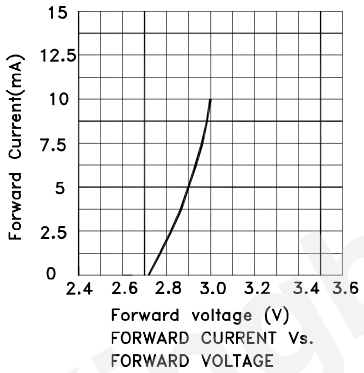
Parameter	Values	Units
Power dissipation	32	mW
DC Forward Current	10	mA
Peak Forward Current [1]	50	mA
Reverse Voltage	5	V
Electrostatic Discharge Threshold (HBM)	1000	V
Operating Temperature	-40°C To +85°C	
Storage Temperature	-40°C To +85°C	

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.

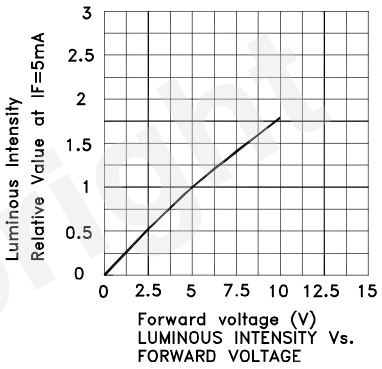


Relative Intensity Vs. Wavelength

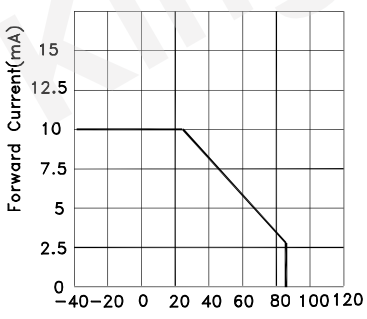
Blue **KPG1-1608PBC-TT-5MAV**



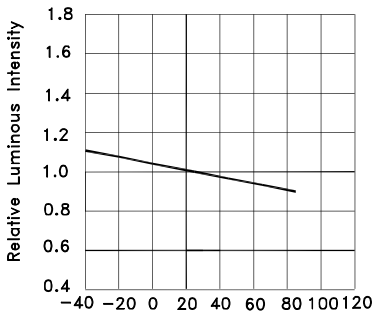
FORWARD CURRENT Vs. FORWARD VOLTAGE



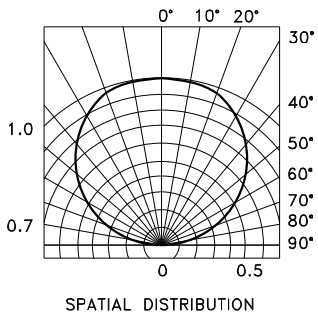
LUMINOUS INTENSITY Vs. FORWARD VOLTAGE



FORWARD CURRENT DERATING CURVE



LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

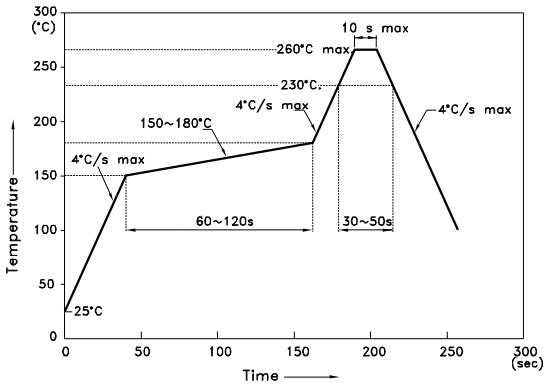


SPATIAL DISTRIBUTION

KPG1-1608PBC-TT-5MAV

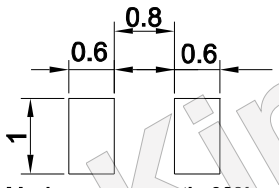
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.



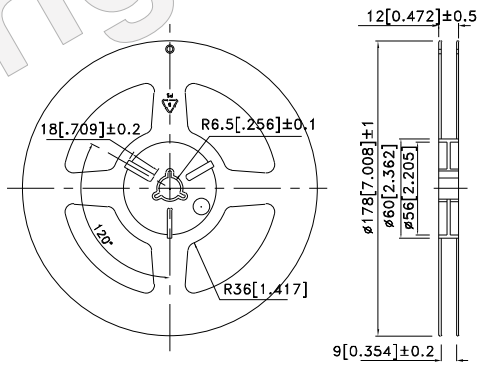
NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

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

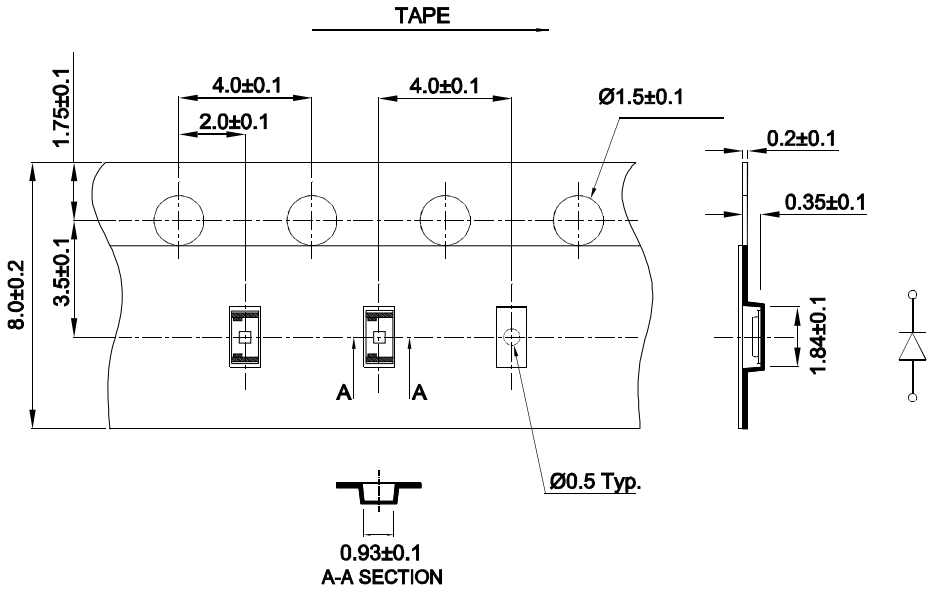


Mask open area ratio:80%;
Mask thickness:80~100um;

Reel Dimension



Tape Dimensions
(Units : mm)



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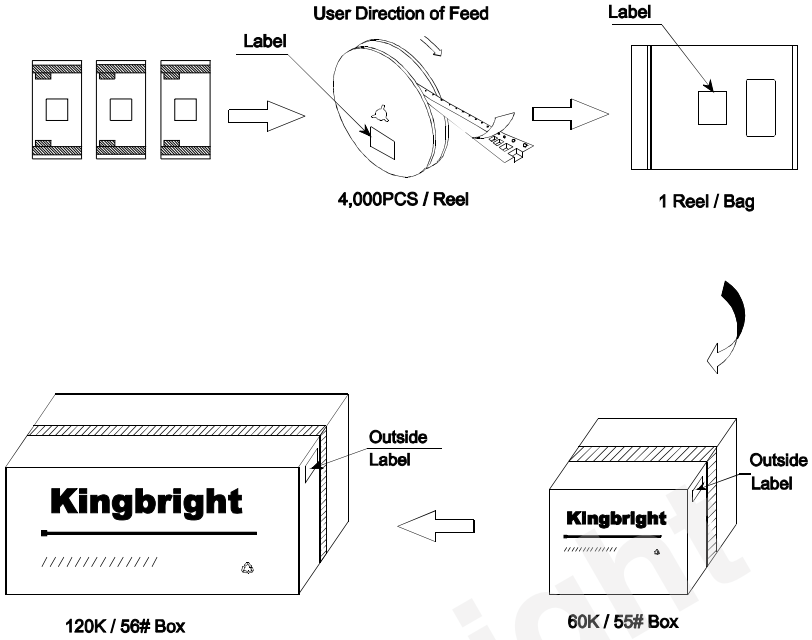
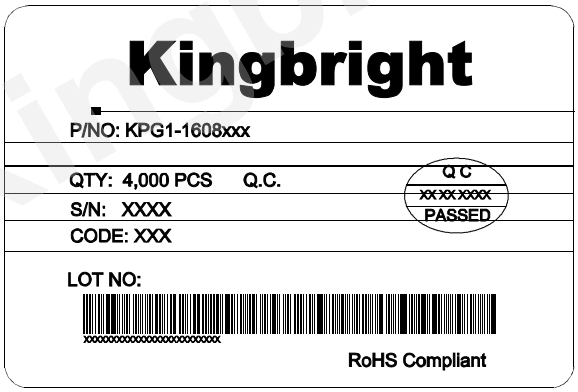
PACKING & LABEL SPECIFICATIONS **KPG1-1608PBC-TT-5MAV**





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