

Part Number: KPHBM-2012SURKCGKC

Hyper Red
Green

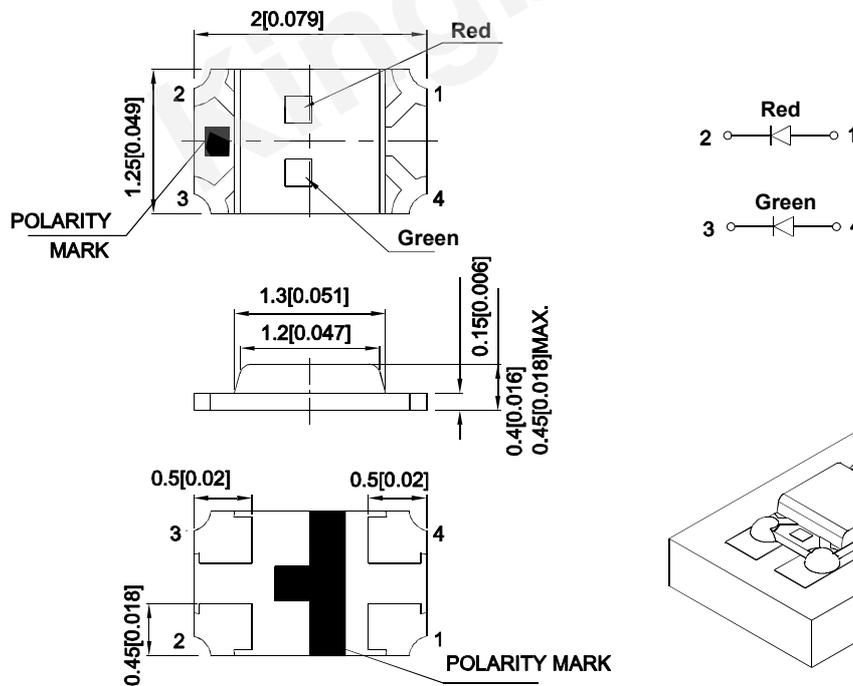
Features

- 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.
- RoHS compliant.

Descriptions

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

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] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
KPHBM-2012SURKCGKC	Hyper Red (AlGaInP)	Water Clear	120	250	120°
			*40	*80	
	Green (AlGaInP)		20	50	
			*20	*50	

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:

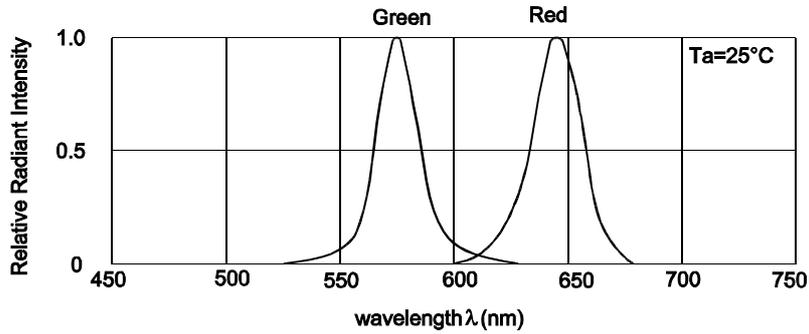
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

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		

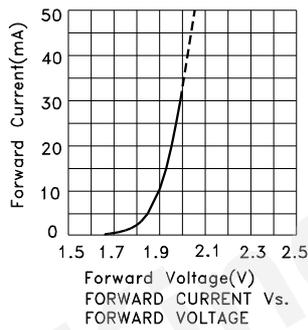
Notes:

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.

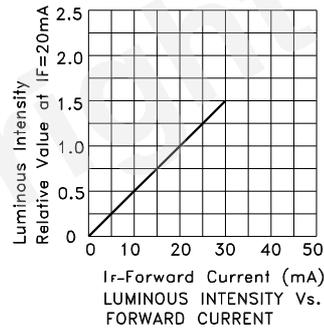


Relative Intensity Vs. Wavelength

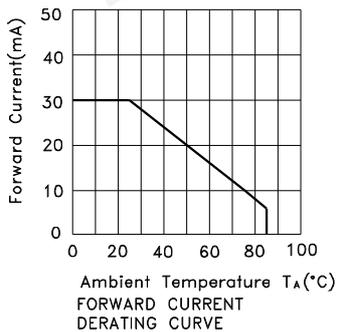
KPHBM-2012SURKCGKC Hyper Red



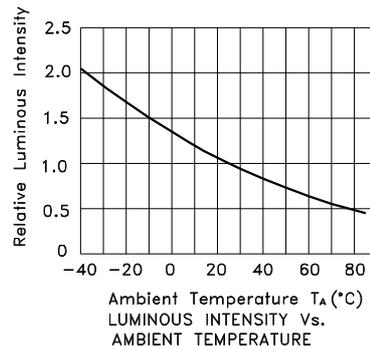
Forward Current(mA)
Forward Voltage(V)
FORWARD CURRENT Vs.
FORWARD VOLTAGE



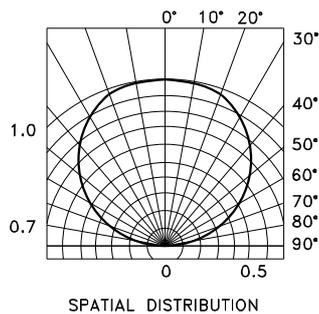
Luminous Intensity
Relative Value at $I_f = 20\text{mA}$
 I_f -Forward Current (mA)
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



Forward Current(mA)
Ambient Temperature T_a ($^\circ\text{C}$)
FORWARD CURRENT
DERATING CURVE

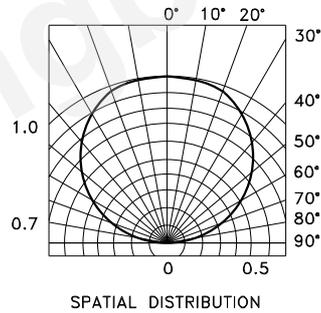
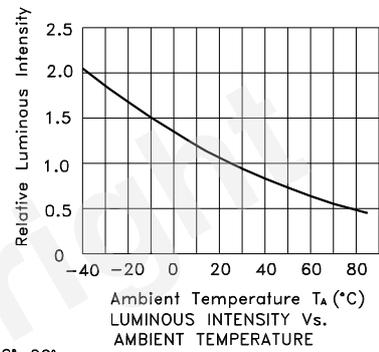
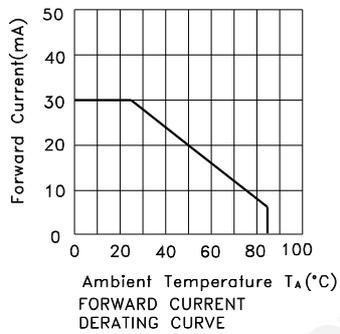
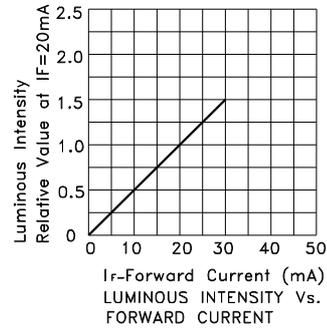
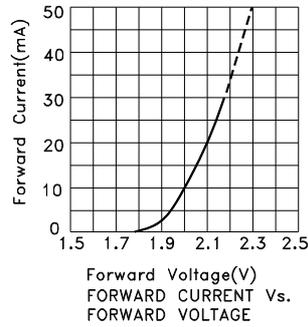


Relative Luminous Intensity
Ambient Temperature T_a ($^\circ\text{C}$)
LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



SPATIAL DISTRIBUTION

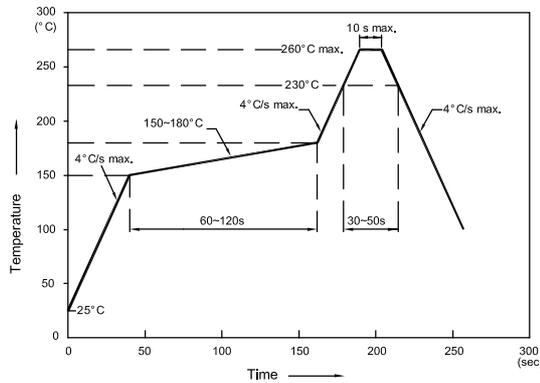
Green



KPHBM-2012SURKCGKC

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.

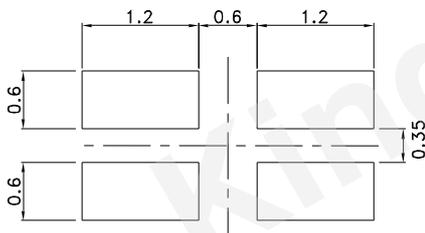
Reflow Soldering Profile For Lead-free SMT Process.



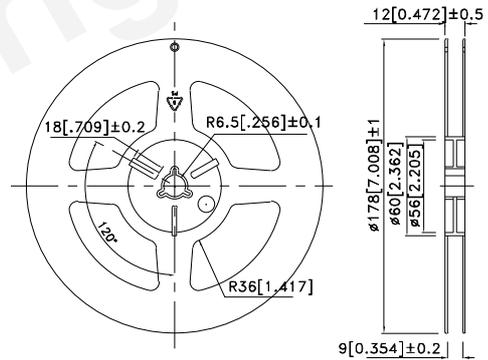
NOTES:

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.

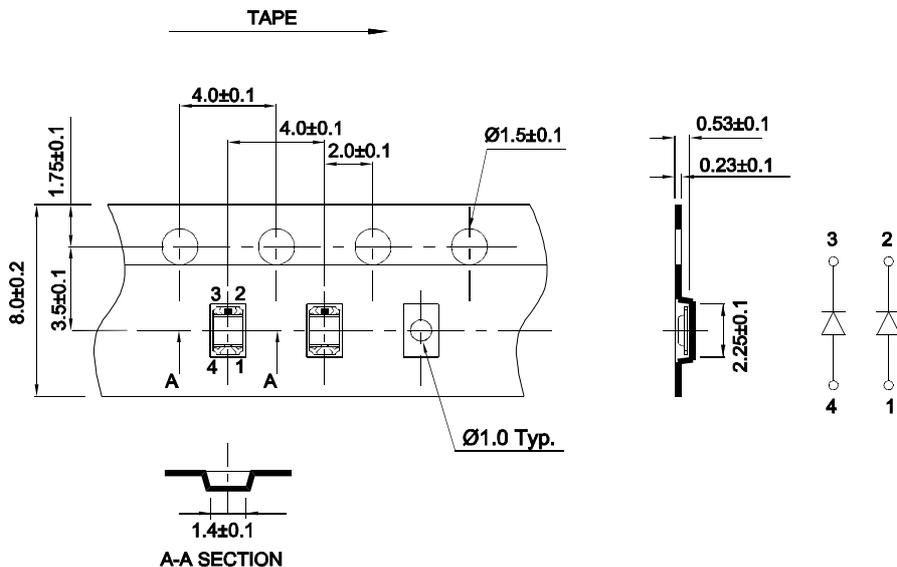
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)

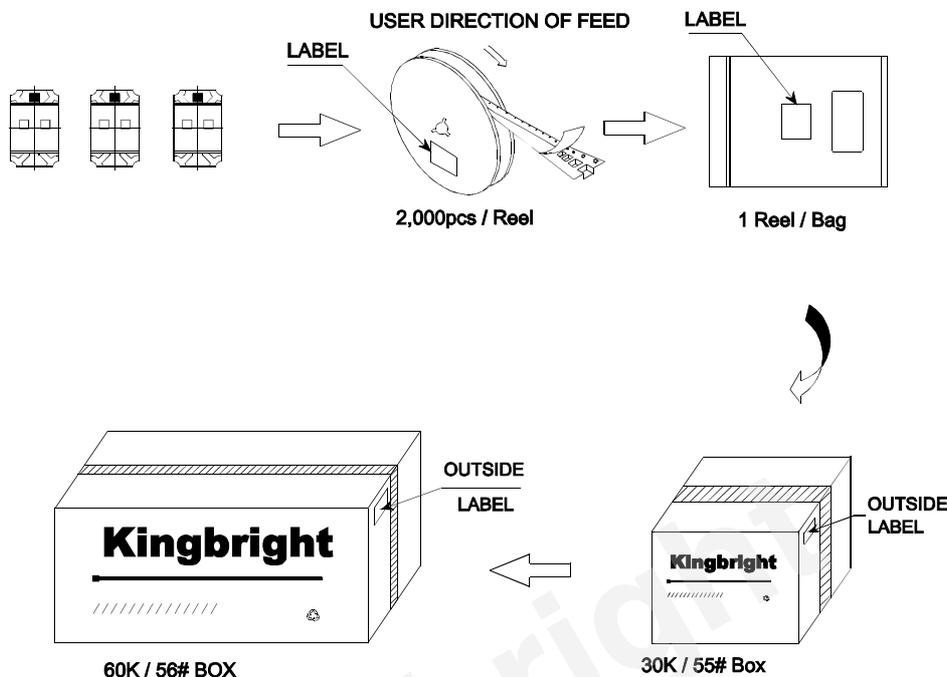


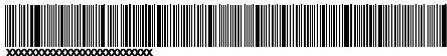
Reel Dimension



Tape Dimensions (Units : mm)





Kingbright		
P/NO: KPHBM-2012xxx		
QTY: 2,000 pcs	Q.C.	QC xxxxxxx PASSED
S/N: XXXX		
CODE: XXX		
LOT NO:		
		
RoHS Compliant		

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