



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KPHBM-2012QBDSURKC

Blue
Hyper Red

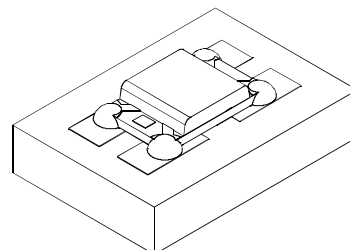
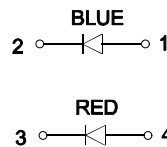
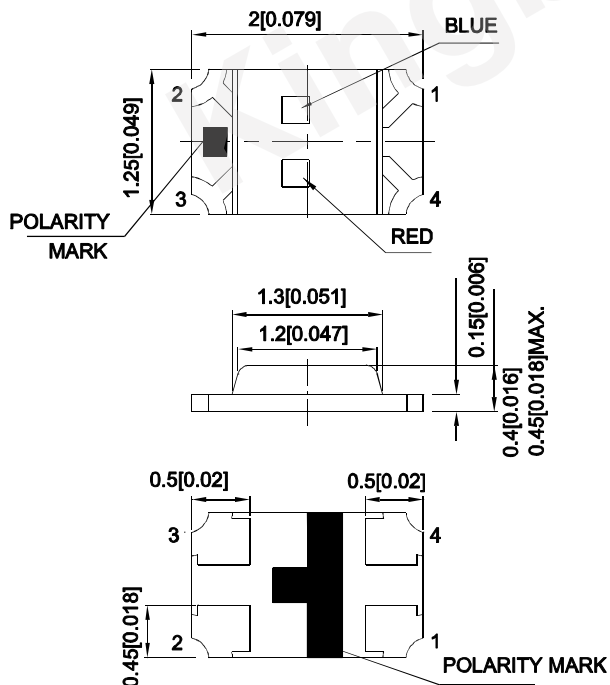
Features

- 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 Blue source color devices are made with InGaN Light Emitting Diode.
- The Hyper Red 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 ± 0.1 (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-2012QBDSURKC | Blue (InGaN) | Water Clear | 40 | 80 | 120° |
| | Hyper Red (AlGaInP) | | *40 | *80 | |
| | | | 120 | 250 | |
| | | | *40 | *80 | |

Notes:

1. $\theta_{1/2}$ 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 |
|-----------------------|--------------------------|-------------------|-------------|----------|-------|----------------------------|
| λ_{peak} | Peak Wavelength | Blue Hyper Red | 460 645 | | nm | I _F =20mA |
| λ_D [1] | Dominant Wavelength | Blue Hyper Red | 465 630 | | nm | I _F =20mA |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | Blue Hyper Red | 25 28 | | nm | I _F =20mA |
| C | Capacitance | Blue Hyper Red | 100 35 | | pF | V _F =0V; f=1MHz |
| V _F [2] | Forward Voltage | Blue Hyper Red | 3.3 1.95 | 4 2.5 | V | I _F =20mA |
| 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 CIE127-2007 standards.

4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

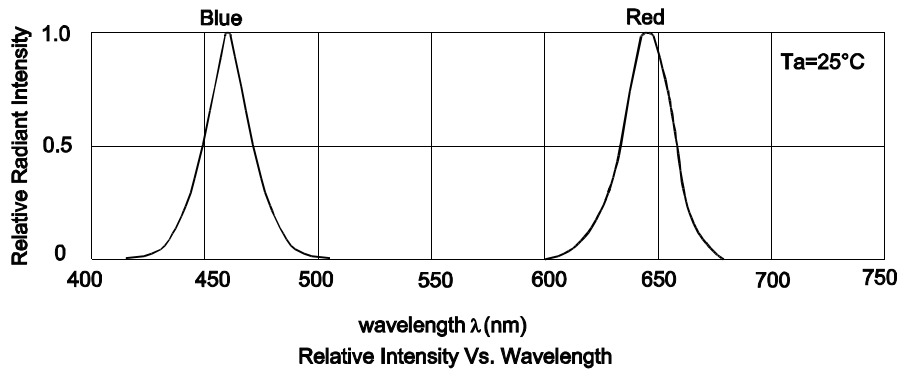
Absolute Maximum Ratings at TA=25°C

| Parameter | Blue | Hyper Red | Units |
|---|----------------|-----------|-------|
| Power dissipation | 120 | 75 | mW |
| DC Forward Current | 30 | 30 | mA |
| Peak Forward Current [1] | 150 | 185 | 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 | | |

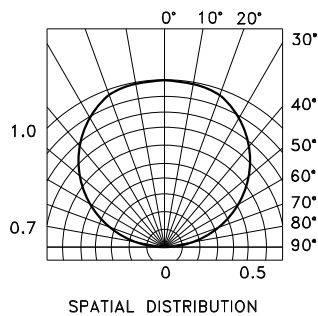
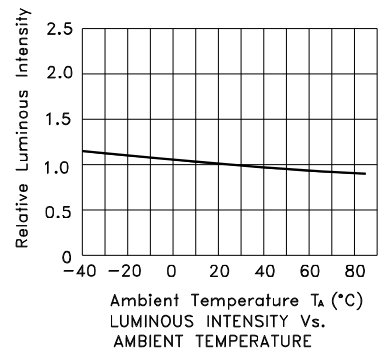
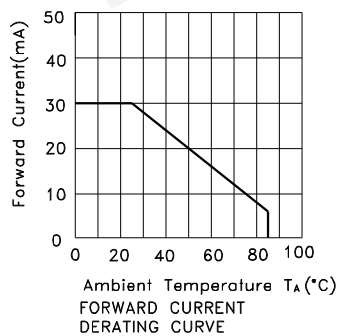
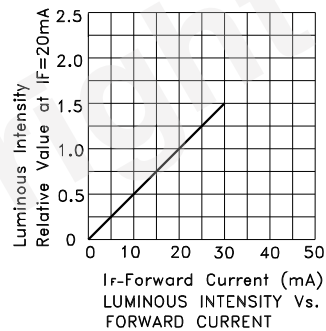
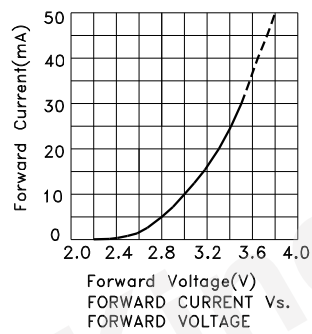
Notes:

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

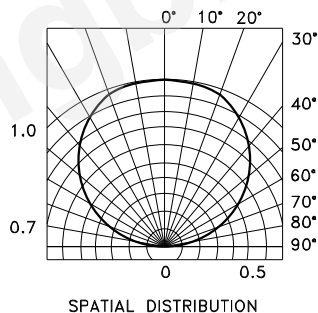
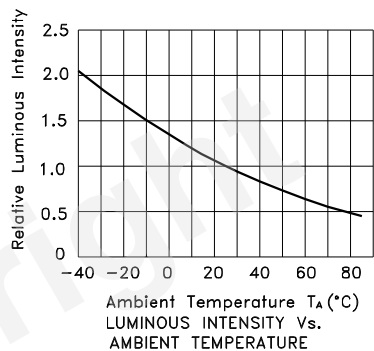
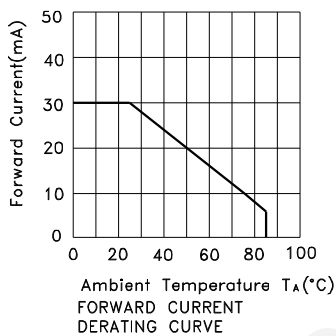
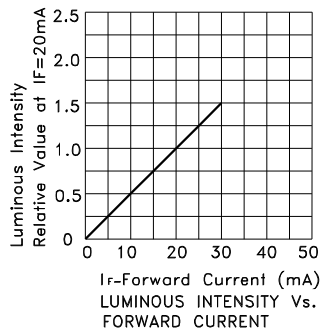
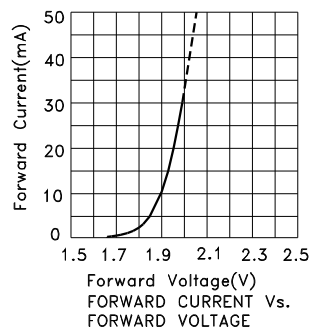
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.



KPHBM-2012QBDSURKC Blue

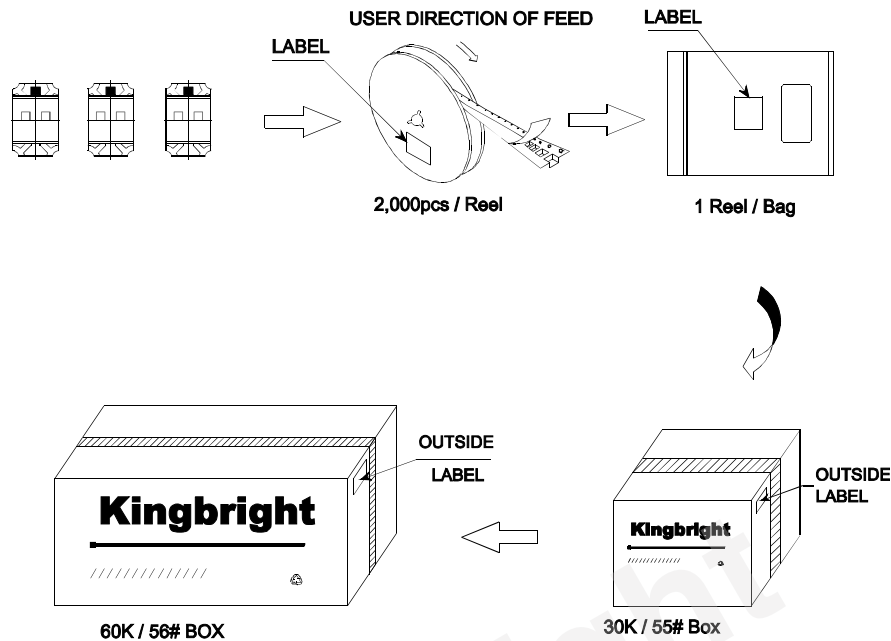



Hyper Red



PACKING & LABEL SPECIFICATIONS

KPHBM-2012QBDSURKC



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

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