



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

Part Number: KPBD-3224QBDSEKC

Blue  
Super Bright Orange

### Features

- 3.2x2.4mm SMT LED, 2.4mm thickness.
- Low power consumption.
- Ideal for backlight and indicator.
- Various colors and lens types available.
- Package : 1500pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

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

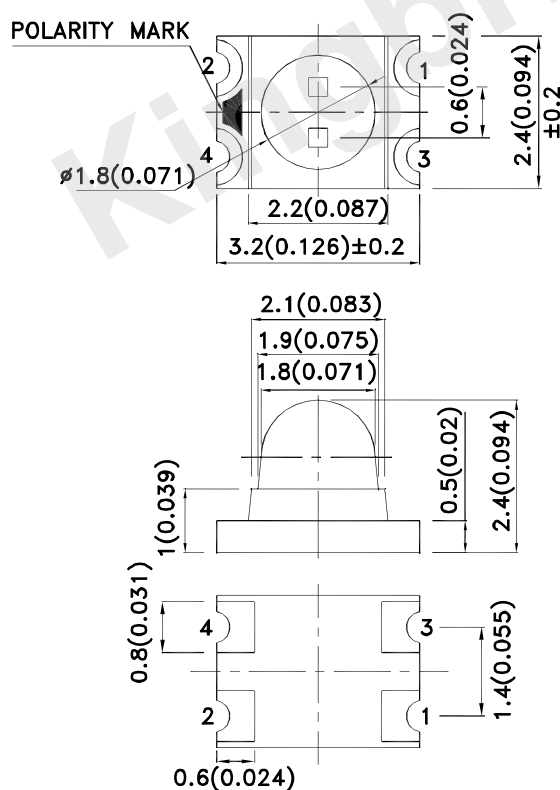
The Super Bright Orange device is made with AlGaInP (on GaAs substrate) light emitting diode chip.

Static electricity and surge damage the LEDs.

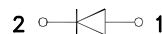
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

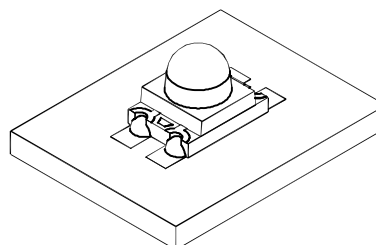
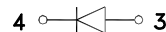
### Package Dimensions



QB-D



SEK



#### 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.         | Dice                          | Lens Type   | Iv (mcd) [2]<br>@ 20mA |      | Viewing<br>Angle [1] |
|------------------|-------------------------------|-------------|------------------------|------|----------------------|
|                  |                               |             | Min.                   | Typ. | 2θ1/2                |
| KPBD-3224QBDSEKC | Blue (InGaN)                  | Water Clear | 120                    | 300  | 20°                  |
|                  | Super Bright Orange (AlGaInP) |             | *120                   | *300 |                      |
|                  |                               |             | 500                    | 700  |                      |
|                  |                               |             | *300                   | *400 |                      |

### 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<br>Super Bright Orange | 460<br>610 |          | nm    | IF=20mA         |
| λD [1] | Dominant Wavelength      | Blue<br>Super Bright Orange | 465<br>601 |          | nm    | IF=20mA         |
| Δλ1/2  | Spectral Line Half-width | Blue<br>Super Bright Orange | 25<br>29   |          | nm    | IF=20mA         |
| C      | Capacitance              | Blue<br>Super Bright Orange | 100<br>15  |          | pF    | VF=0V;f=1MHz    |
| VF [2] | Forward Voltage          | Blue<br>Super Bright Orange | 3.3<br>2.1 | 4<br>2.5 | V     | IF=20mA         |
| IR     | Reverse Current          | Blue<br>Super Bright Orange |            | 50<br>10 | uA    | VR = 5V         |

### Notes:

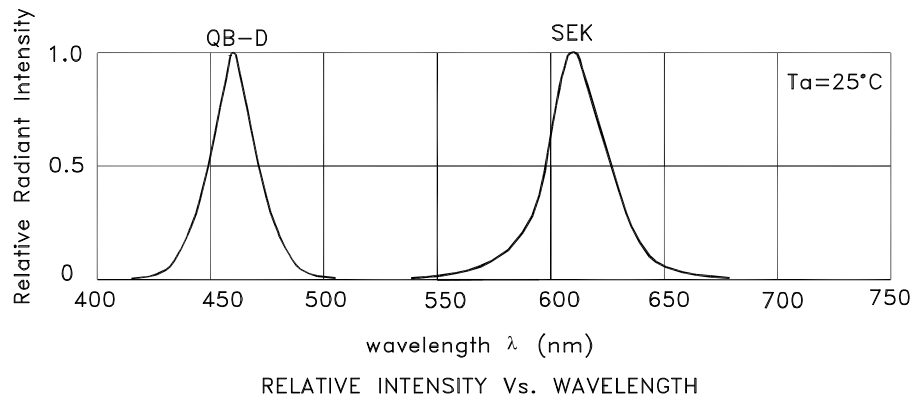
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.
3. Wavelength value is traceable to the CIE127-2007 compliant national standards.

## Absolute Maximum Ratings at TA=25°C

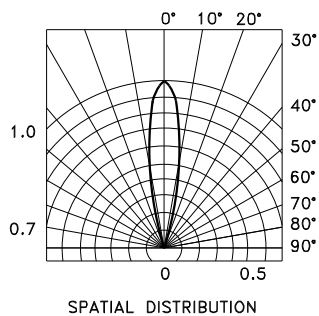
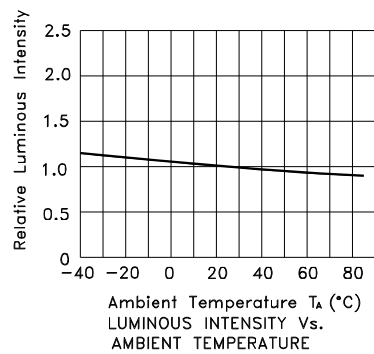
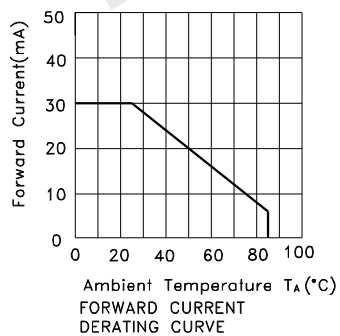
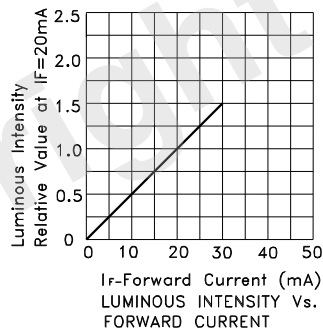
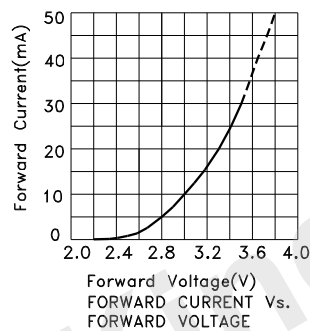
| Parameter                | Blue           | Super Bright Orange | Units |
|--------------------------|----------------|---------------------|-------|
| Power dissipation        | 120            | 75                  | mW    |
| DC Forward Current       | 30             | 30                  | mA    |
| Peak Forward Current [1] | 150            | 195                 | mA    |
| Reverse Voltage          | 5              |                     | V     |
| Operating Temperature    | -40°C To +85°C |                     |       |
| Storage Temperature      | -40°C To +85°C |                     |       |

### Note:

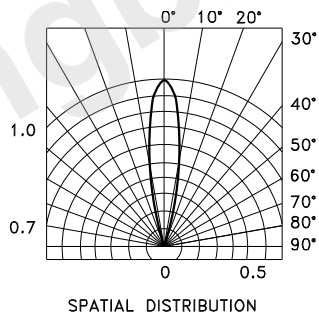
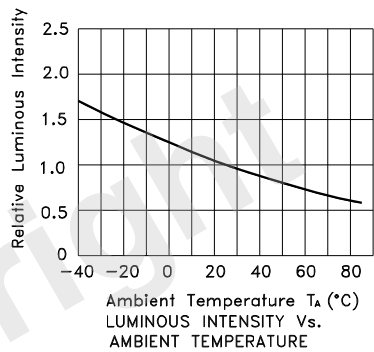
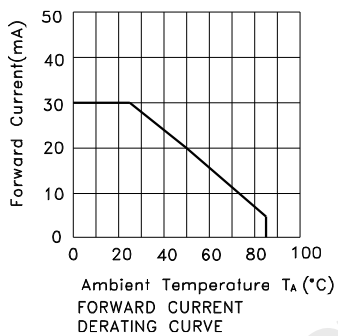
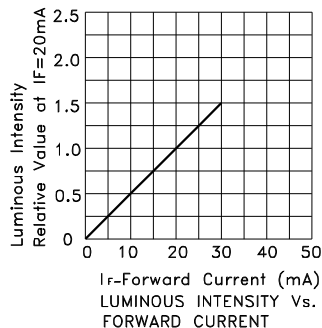
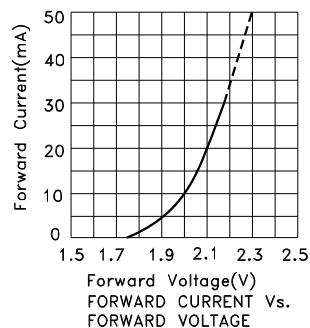
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



KPBD-3224QBDSEKC  
Blue



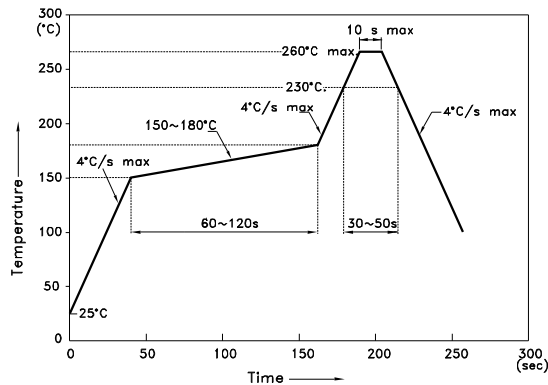
## Super Bright Orange



## KPBD-3224QBDSEKC

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.

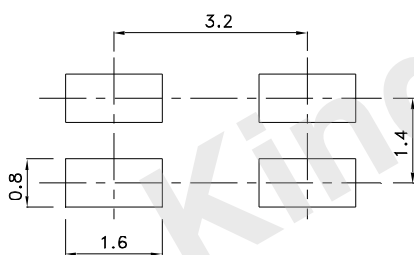
Reflow Soldering Profile For Lead-free SMT Process.



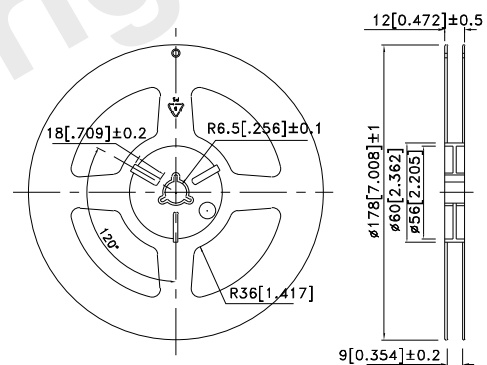
### NOTES:

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.

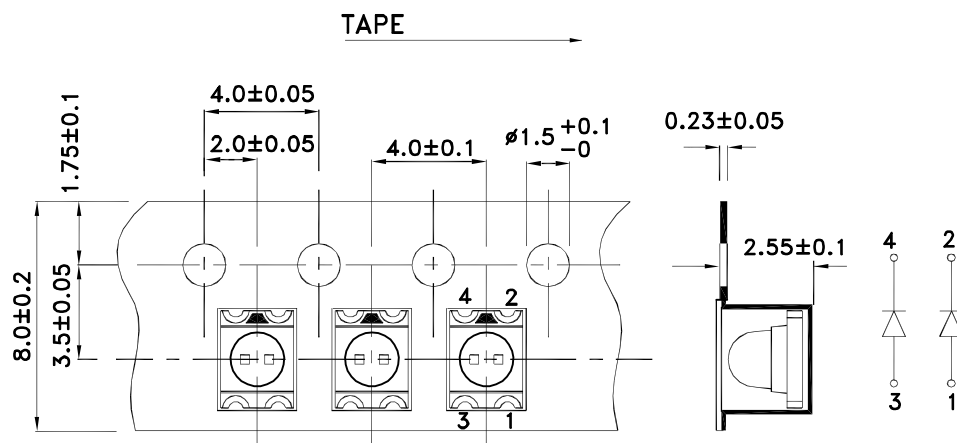
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



### Reel Dimension

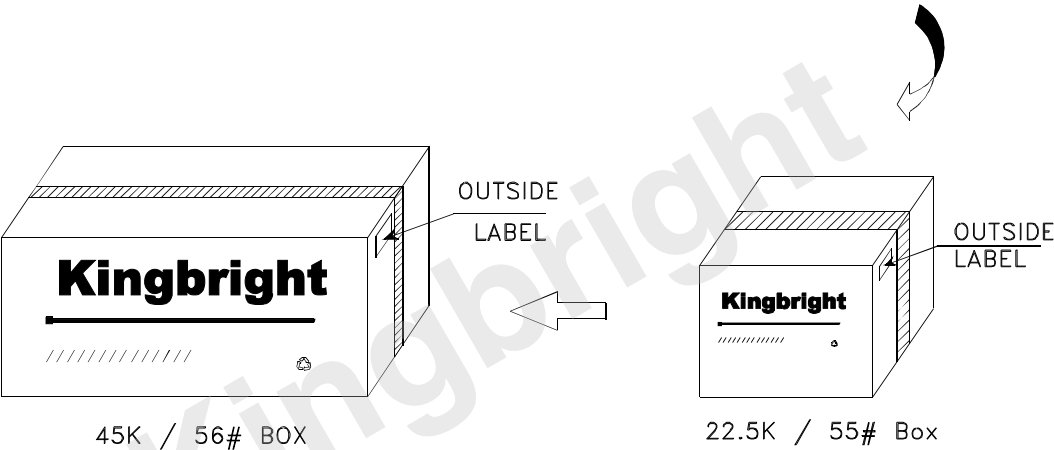
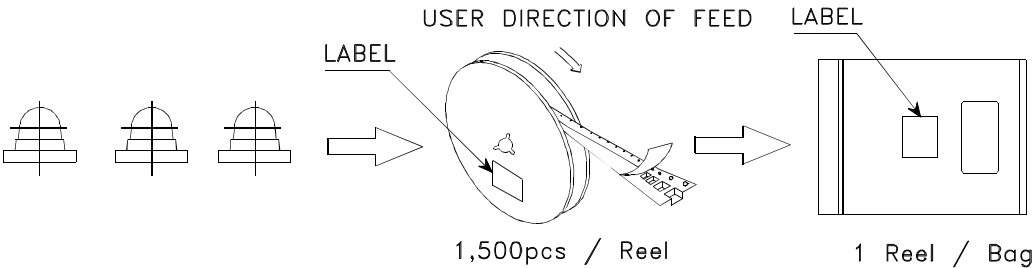



### Tape Dimensions (Units : mm)



## PACKING & LABEL SPECIFICATIONS

KPBD-3224QBDSEKC



|                                                                                      |                                                                                                                    |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <b>Kingbright</b>                                                                    |                                                                                                                    |
| P/NO: KPBD-3224xxx                                                                   |                                                                                                                    |
| QTY: 1,500 pcs                                                                       | Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C<br/>XX XX XXXX<br/>PASSED</span> |
| S/N: XXXX                                                                            |                                                                                                                    |
| CODE: XXX                                                                            |                                                                                                                    |
| LOT NO:                                                                              |                                                                                                                    |
|  |                                                                                                                    |
| RoHS Compliant                                                                       |                                                                                                                    |

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