

Part Number: KPA-1606EC

High Efficiency Red

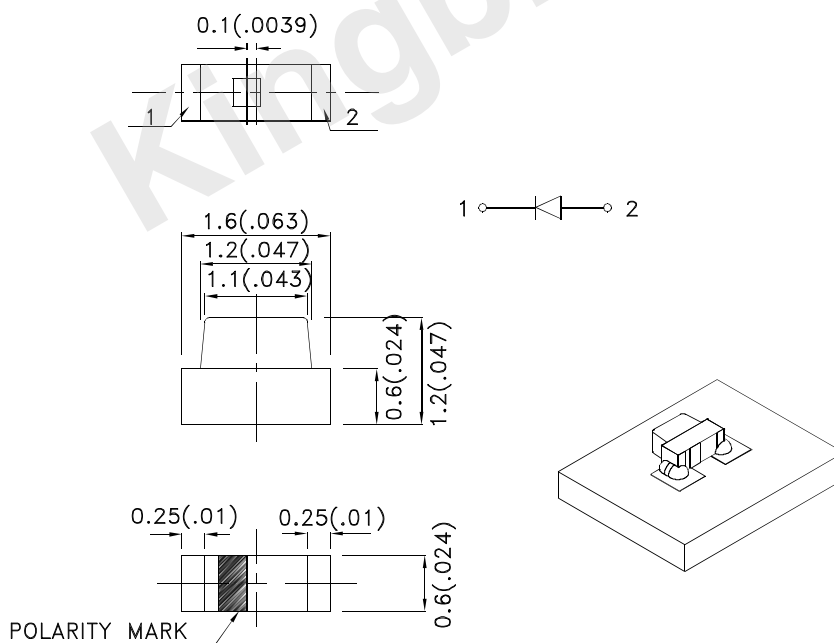
### Features

- 1.6mmx0.6mm right angle SMT LED, 1.2mm thickness.
- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Various colors and lens types available.
- Package :2000pcs / reel.
- Moisture sensitivity level : level 3.
- Tinned pads for improved solderability.
- RoHS compliant.

### Description

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.1$  (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                |
| KPA-1606EC | High Efficiency Red (GaAsP/GaP) | Water Clear | 8                      | 15   | 110°                 |
|            |                                 |             | *3                     | *6   |                      |

### 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          | High Efficiency Red | 627  |      | nm    | IF=20mA         |
| λD [1] | Dominant Wavelength      | High Efficiency Red | 617  |      | nm    | IF=20mA         |
| Δλ1/2  | Spectral Line Half-width | High Efficiency Red | 45   |      | nm    | IF=20mA         |
| C      | Capacitance              | High Efficiency Red | 15   |      | pF    | VF=0V;f=1MHz    |
| VF [2] | Forward Voltage          | High Efficiency Red | 2    | 2.5  | V     | IF=20mA         |
| IR     | Reverse Current          | High Efficiency Red |      | 10   | uA    | VR=5V           |

### Notes:

1.Wavelength: +/-1nm.

2. Forward Voltage: +/-0.1V.

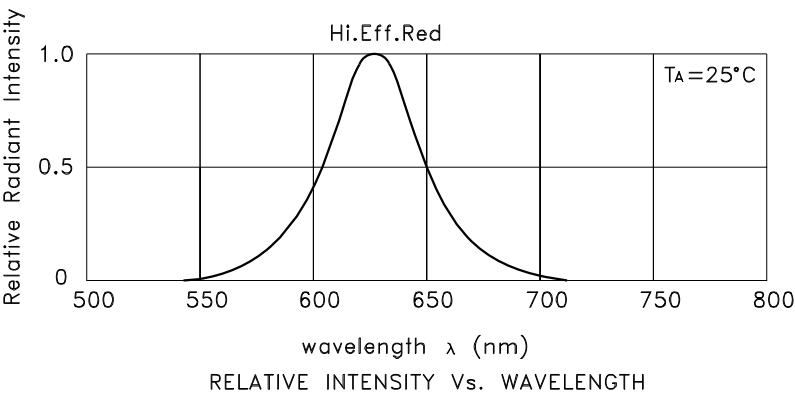
3.Wavelength value is traceable to the CIE127-2007 compliant national standards.

## Absolute Maximum Ratings at TA=25°C

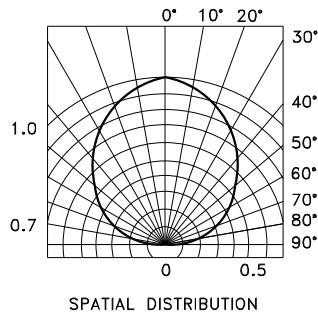
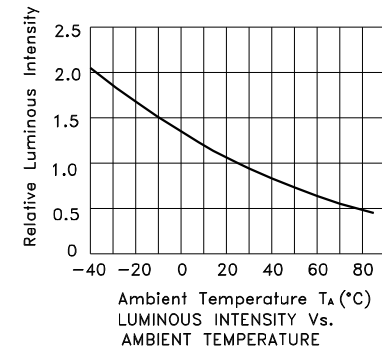
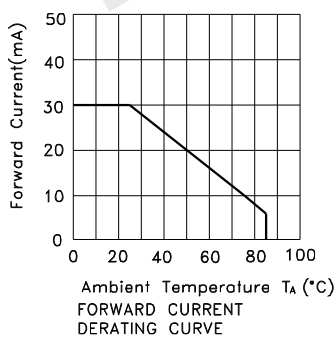
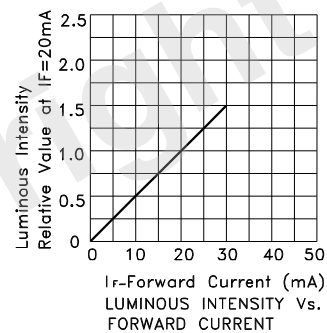
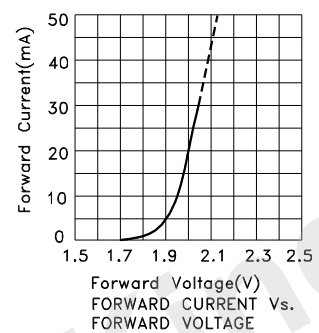
| Parameter                | High Efficiency Red | Units |
|--------------------------|---------------------|-------|
| Power dissipation        | 75                  | mW    |
| DC Forward Current       | 30                  | mA    |
| Peak Forward Current [1] | 160                 | mA    |
| Reverse 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.



High Efficiency Red KPA-1606EC



## KPA-1606EC

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.

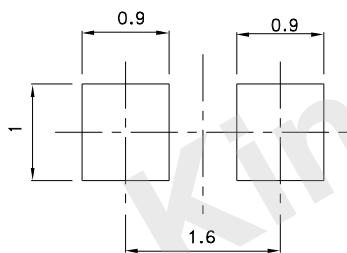
Reflow Soldering Profile For Lead-free SMT Process.



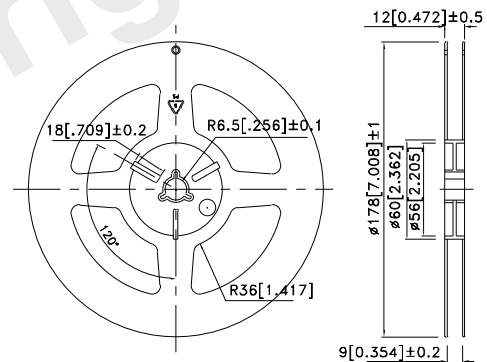
### NOTES:

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.

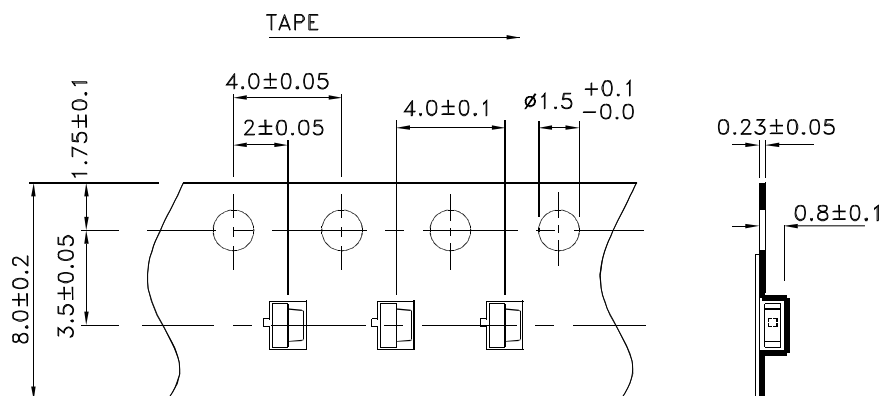
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



### Reel Dimension

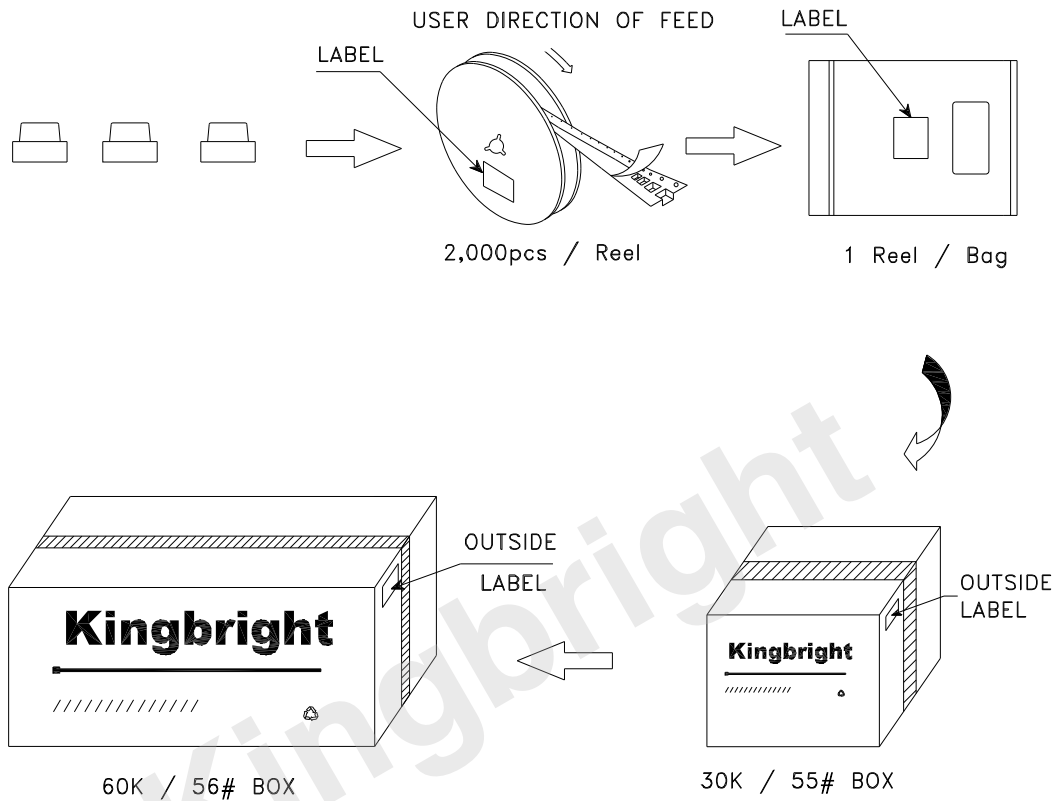



### Tape Dimensions (Units : mm)



## PACKING & LABEL SPECIFICATIONS

KPA-1606EC



|   |      |                             |
|---|------|-----------------------------|
| <b>Kingbright</b>   |      |                             |
| P/N0: KPA-1606xxx   |      |                             |
| QTY: 2,000 pcs  | Q.C. | Q C<br>xx xx xxxx<br>PASSED |
| S/N: XXXX   |      |                             |
| CODE: XXX   |      |                             |
| LOT NO:<br><br>xxxxxxxxxxxxxxxxxxxxxxxx |      |                             |
| RoHS Compliant  |      |                             |

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