

Part Number: APHBM2012ETSGTC

High Efficiency Red  
Super Bright Green

### Features

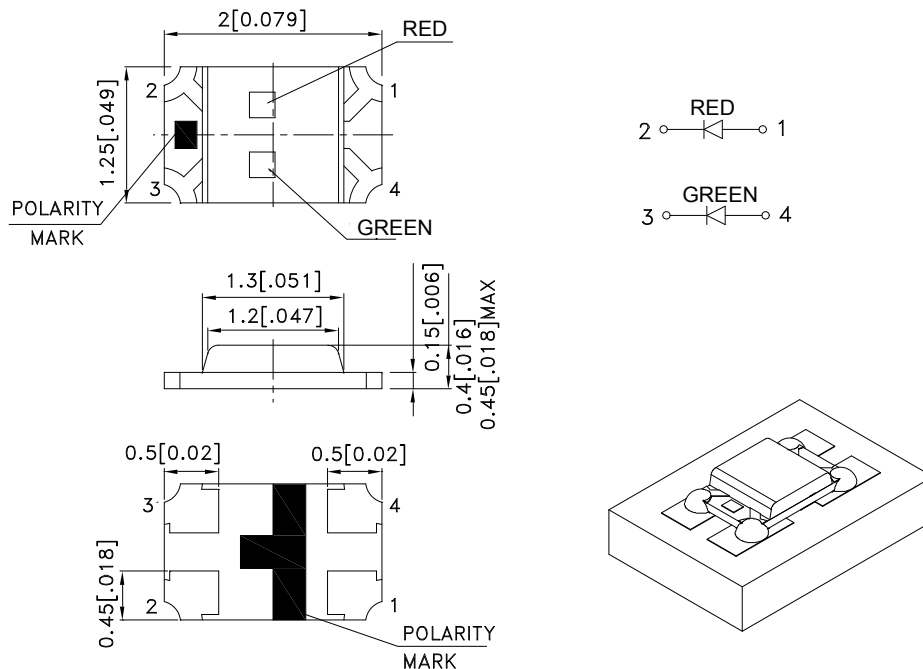
- 2.0mmx1.25mm SMT LED, 0.45mm max. thickness.
- Bi -color, low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

### Description

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

The Super Bright Green source color devices are made with Gallium Phosphide Green 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                |
| APHBM2012ETSGTC | High Efficiency Red (GaAsP/GaP) | Water Clear | 8                      | 15   | 120°                 |
|                 | Super Bright Green (GaP)        |             | 8                      | 15   |                      |

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%.

## Electrical / Optical Characteristics at TA=25°C

| Symbol                | Parameter                | Device                                    | Typ.       | Max.       | Units | Test Conditions           |
|-----------------------|--------------------------|-------------------------------------------|------------|------------|-------|---------------------------|
| $\lambda_{peak}$      | Peak Wavelength          | High Efficiency Red<br>Super Bright Green | 627<br>565 |            | nm    | I <sub>F</sub> =20mA      |
| $\lambda_D$ [1]       | Dominant Wavelength      | High Efficiency Red<br>Super Bright Green | 625<br>568 |            | nm    | I <sub>F</sub> =20mA      |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | High Efficiency Red<br>Super Bright Green | 45<br>30   |            | nm    | I <sub>F</sub> =20mA      |
| C                     | Capacitance              | High Efficiency Red<br>Super Bright Green | 15<br>15   |            | pF    | V <sub>F</sub> =0V;f=1MHz |
| V <sub>F</sub> [2]    | Forward Voltage          | High Efficiency Red<br>Super Bright Green | 2<br>2.2   | 2.5<br>2.5 | V     | I <sub>F</sub> =20mA      |
| I <sub>R</sub>        | Reverse Current          | High Efficiency Red<br>Super Bright Green |            | 10<br>10   | uA    | V <sub>R</sub> = 5V       |

Notes:

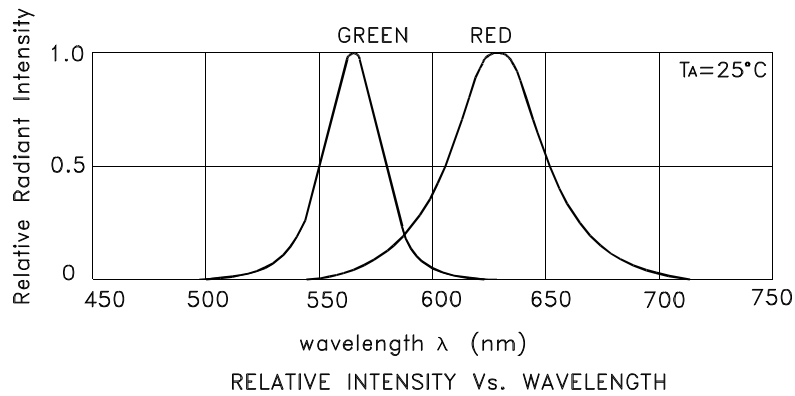
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

## Absolute Maximum Ratings at TA=25°C

| Parameter                | High Efficiency Red | Super Bright Green | Units |
|--------------------------|---------------------|--------------------|-------|
| Power dissipation        | 75                  | 62.5               | mW    |
| DC Forward Current       | 30                  | 25                 | mA    |
| Peak Forward Current [1] | 160                 | 140                | mA    |
| Reverse Voltage          | 5                   |                    | V     |
| Operating Temperature    | -40°C To +85°C      |                    |       |
| Storage Temperature      | -40°C To +85°C      |                    |       |

Note:

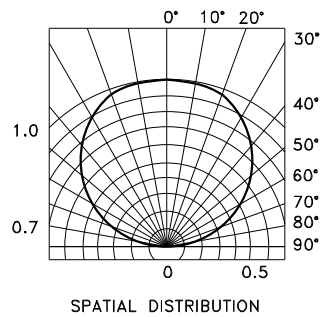
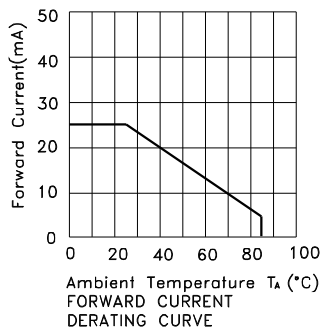
1. 1/10 Duty Cycle, 0.1ms Pulse Width.



## APHBM2012ETSGTC High Efficiency Red



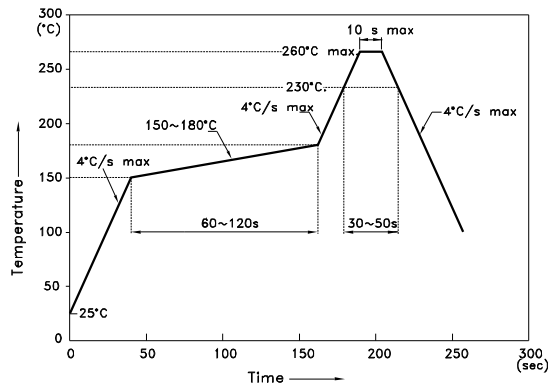
## Super Bright Green



## APHBM2012ETSGTC

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.

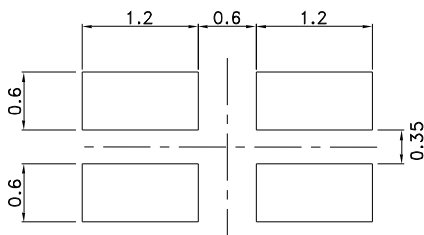
Reflow Soldering Profile For Lead-free SMT Process.



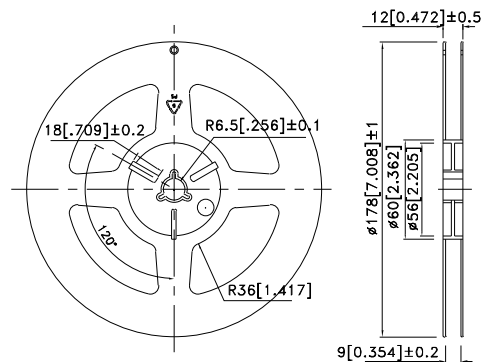
NOTES:

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.

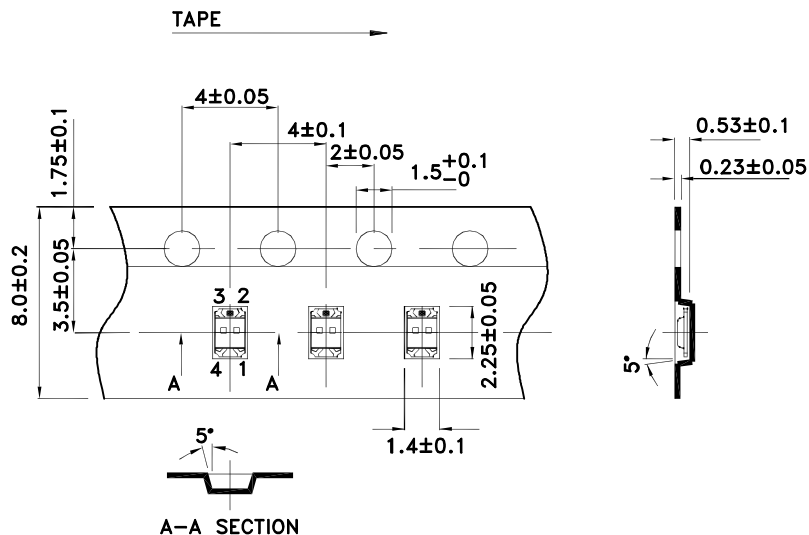
### Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



### Reel Dimension



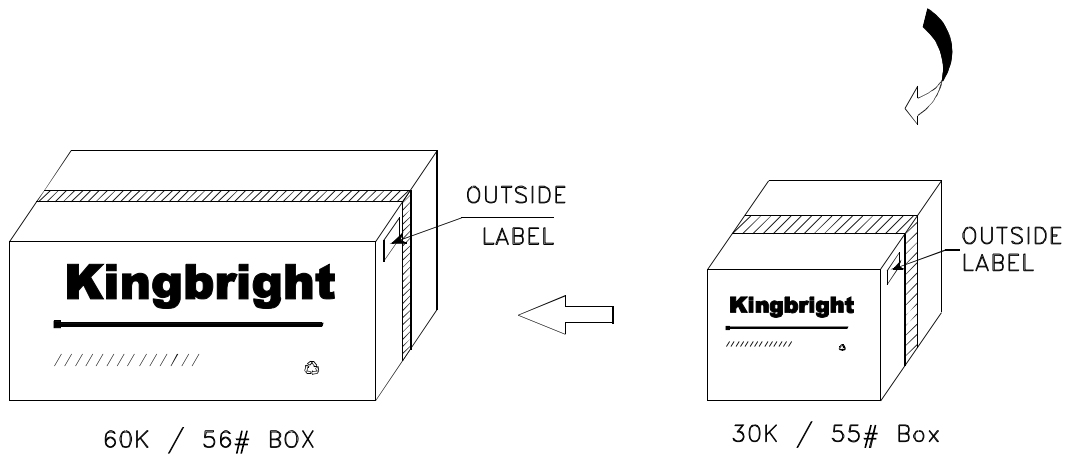
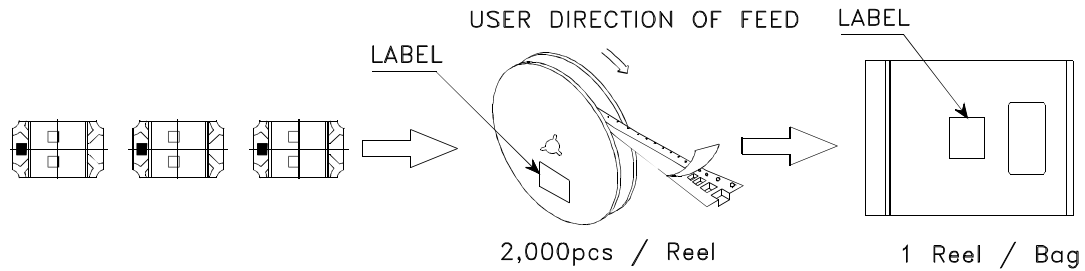
### Tape Dimensions (Units : mm)




# Kingbright

## PACKING & LABEL SPECIFICATIONS

## APHBM2012ETSGTC



|                                                                                                                      |                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <h1>Kingbright</h1>                                                                                                  |                                                                                                                    |
| P/NO: APHBM2012xxx                                                                                                   |                                                                                                                    |
| QTY: 2,000 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:                                                                                                              |                                                                                                                    |
| <br>XXXXXXXXXXXXXXXXXXXXXXXXXXXX |                                                                                                                    |
| RoHS Compliant                                                                                                       |                                                                                                                    |