

## L1W33-B463

### LED 1W BLUE 463nm COB K1

#### FEATURES

- REACH and RoHS Compliant
- High Power COB K1 Package provides excellent heat dissipation for the LED
- High brightness, high light efficiency, low attenuation
- Long life=50,000 Hours
- Support surface mount technology
- All copper brackets with bonded alloy wires
- More efficient than fluorescent lamps
- Wide luminous beam angle: 140°



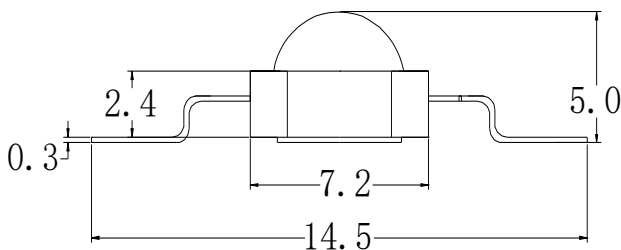
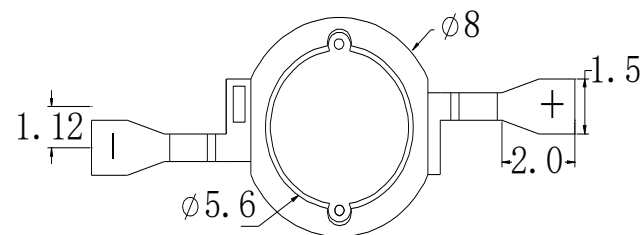
COB K1 Package

#### APPLICATIONS

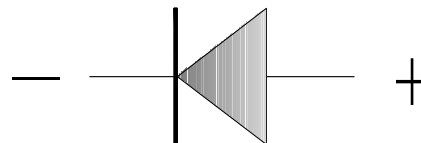
- Street lamp, Desk lamp, anti-riot flashlight
- Wall washer, Mining Lamps, Outdoor lights
- Spotlights, Ground lights

#### DIMENSION SPECIFICATION

Unit: mm



COB K1 Package



Notes: Tolerances unless otherwise specified  $\pm 0.25$

**PHOTOELECTRIC CHARACTERISTICS (T<sub>A</sub>=25°C)**

| Parameter       | Symbol            | Min. | Typical | Max. | Unit | Condition |
|-----------------|-------------------|------|---------|------|------|-----------|
| Forward Voltage | V <sub>F</sub>    | 3.2  | -       | 3.4  | V    | IF= 350mA |
| Luman           | ΦV                | 20   | -       | 30   | LM   |           |
| Wavelength      | λ <sub>d</sub>    | 460  | -       | 465  | nm   |           |
| Beam Angle      | 2θ <sup>1/2</sup> | -    | 140     | -    | deg  |           |
| Leakage Current | IR                | 0    | -       | 5    | μA   | VR=5V     |

Remarks: 2θ<sup>1/2</sup> means that the angle between the luminous intensity value and the radiation axial (normal) is called θ<sup>1/2</sup>, and 2 times the viewing angle (or half power angle) of θ<sup>1/2</sup> is the viewing angle (or half power angle).

**ABSOLUTE MAXIMUM RATING (T<sub>A</sub>=25°C)**

| Item                  | Symbol           | Value      | Unit |
|-----------------------|------------------|------------|------|
| Forward Current       | I <sub>F</sub>   | 350        | mA   |
| Power Dissipation     | P <sub>D</sub>   | 1          | W    |
| Junction Temperature  | T <sub>J</sub>   | 125        | °C   |
| Operating Temperature | T <sub>OPR</sub> | -30 ~ +85  | °C   |
| Storage Temperature   | T <sub>STG</sub> | -40 ~ +100 | °C   |

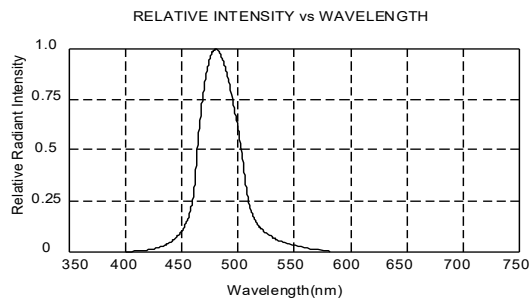
Remark:

1. Luminous intensity tolerance: ± 10%
2. The forward voltage tolerance: ± 0.1V
3. CIE color coordinate test tolerance: ± 0.005

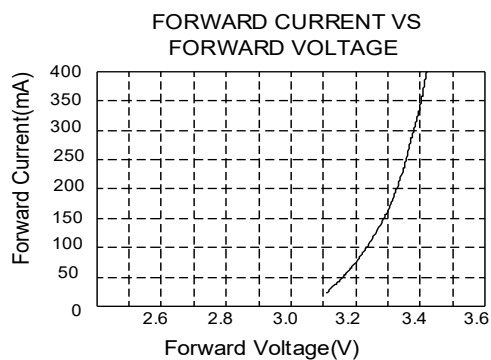
## PHOTOELECTRIC CHARACTERISTIC CURVE ( $I_F=350\text{mA}$ ) ( $T_A=25^\circ\text{C}$ )

Spectral relative energy distribution curve and CIE1931 diagram

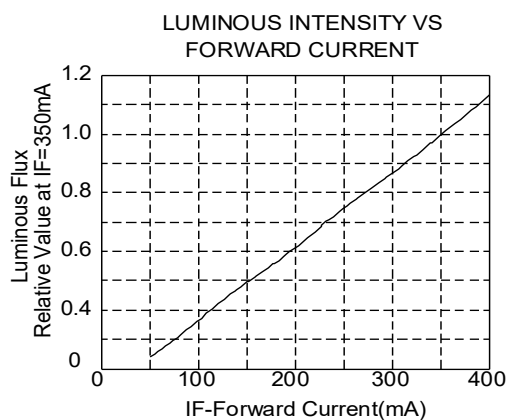
### ■ Spectrum Distribution



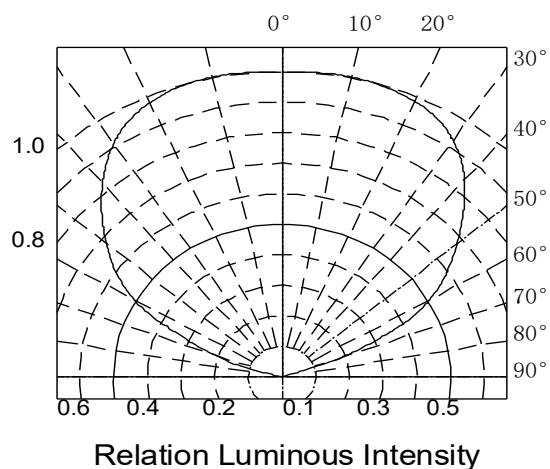
### ■ VF-IF Characteristics



### ■ IF- F V Characteristics



### ■ Radiation Diagram



## PART NUMBER CODING SYSTEM

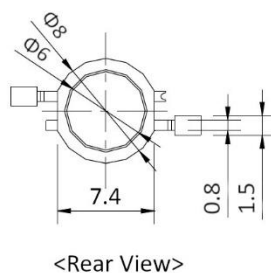
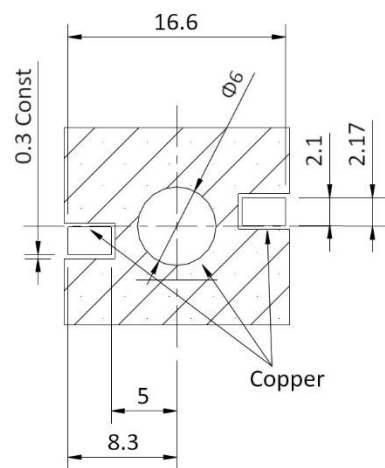
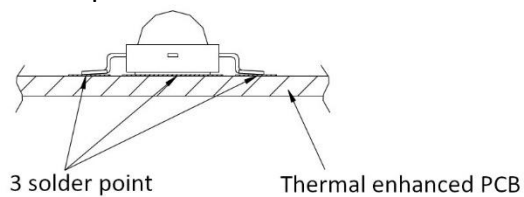
L                      1W                      33                      13000K  
 (1)                      (2)                      (3)                      (4)

|     |                                |                                                                       |
|-----|--------------------------------|-----------------------------------------------------------------------|
| (1) | Series                         | L = Lumimax High Power COB K1 LED series                              |
| (2) | Power of the LED               | 1W<br>3W<br>5W                                                        |
| (3) | Die Size of the COB Chip       | 33 = 33 Mil<br>2448 = 24 Mil +48 mil Dual Chip<br>42 = 42 Mil         |
| (4) | Wavelength / Color Temperature | R625: Red Color 625nm<br>13000K: 13000K (Typ.)<br>4250K: 4250K (Typ.) |

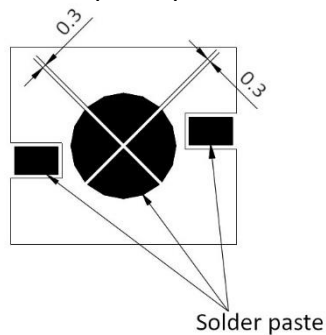
| Items/Objects                        | Parameter description                                                                                                                              |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Aluminum heatsinks                   | It is necessary to add a large enough heat dissipation surface area to ensure that the temperature of the aluminum substrate does not exceed 60°C  |
| Anti-static                          | Human Model: 2.4V                                                                                                                                  |
| soldering iron soldering temperature | 350°C for 3 seconds                                                                                                                                |
| Solder paste                         | Solder paste with a melting point of 138°C                                                                                                         |
| Heating platform Temperature         | The maximum temperature should not exceed 160°C, and it is guaranteed that it should be lowered as much as possible under the condition of welding |
| Reflow Temperature                   | The maximum temperature should not exceed 170°C, and it should be lowered as much as possible under the condition of welding                       |
| Storage Temperature                  | -30 ~ 85°C                                                                                                                                         |
| Store Humidity                       | 10% ~ 90%                                                                                                                                          |
| Corrosion Resistance                 | Strong                                                                                                                                             |
| Waterproof rating                    | IP30                                                                                                                                               |

## RECOMMENDED SOLDER PAD

### 1. Solder pad



### 2. Solder paste pattern



#### Note:

1. All dimensions are in millimeters (tolerance:  $\pm 0.2$ )
2. Scale none

## **PRECAUTIONS FOR PRODUCT USE**

### **1. Conditions**

The LED conditions used must operate within the rated parameters.

### **2. Installation**

When installing lamps, do not use a high-temperature soldering iron to burn the luminous layer of the product to avoid dead lamps or affect the luminous effect.

### **3. Electrostatics**

Static electricity or surge voltages can render the product ineffective. We recommend that you wear anti-static wrists or anti-static gloves when using the product, all devices, equipment and machines must be grounded, and it is recommended to take precautions to prevent the surge voltage generated by the equipment from acting on the product. When inspecting a single product into a finished product, it is recommended to check whether each product is damaged by static electricity, and the inspection can be tested by an indicator light or a positive on-voltage test at a low current (current 300mA is the most suitable), and the damaged product will show different characteristics from the normal product, such as the forward voltage change is lower or does not emit light at a small current.

### **4. Cooling**

The heat dissipation design of the end product is particularly important. When designing a system, the increase in the input temperature coefficient of the product's electrical power is determined by the thermal resistance of the board and the density of the product on the board and its components. Therefore, it is necessary to avoid a large amount of concentrated heat dissipation and to operate in strict accordance with the parameters given in the specification sheet. Please decide to consider the current ambient temperature and refer to the ambient temperature vs. allowable forward current characteristics on the specification sheet before using the current passing through each product, and take measures to improve the operational characteristics of the product by dissipating the heat around the product thermal sinking.

### **5. Cleaning**

Alcohol is recommended as a cleaning solvent for LED products. When cleaning with other solvents, it is necessary to determine whether it will damage the packaging and the luminous area of the product. According to international practice, Freon cannot be used as a solvent for cleaning LED products, do not use ultrasonic cleaning, when it is really necessary to use ultrasonic cleaning, before cleaning, it is necessary to test in advance to determine whether it will cause damage to LED products. The role of ultrasonic cleaning LED products depends on factors such as ultrasonic intensity and associated conditions.

### **6. Other**

LED integrated products emit light of sufficient intensity may damage the human eye, do not directly look at the product without wearing an eye mask, glare makes people feel uncomfortable and irritating, so precautions can be taken during use, and necessary protective measures should also be taken when using modules assembled from a single product.