

Pure Green Backlight Displays  
Technical Data Sheet

Part No.: KWB-R7039PG/6PG

## Features:

- Low power requirements.
- Large area, uniform, bright light emitting surface.
- Easy for installation.
- Color: Pure Green.
- The product itself will remain within RoHS compliant Version.

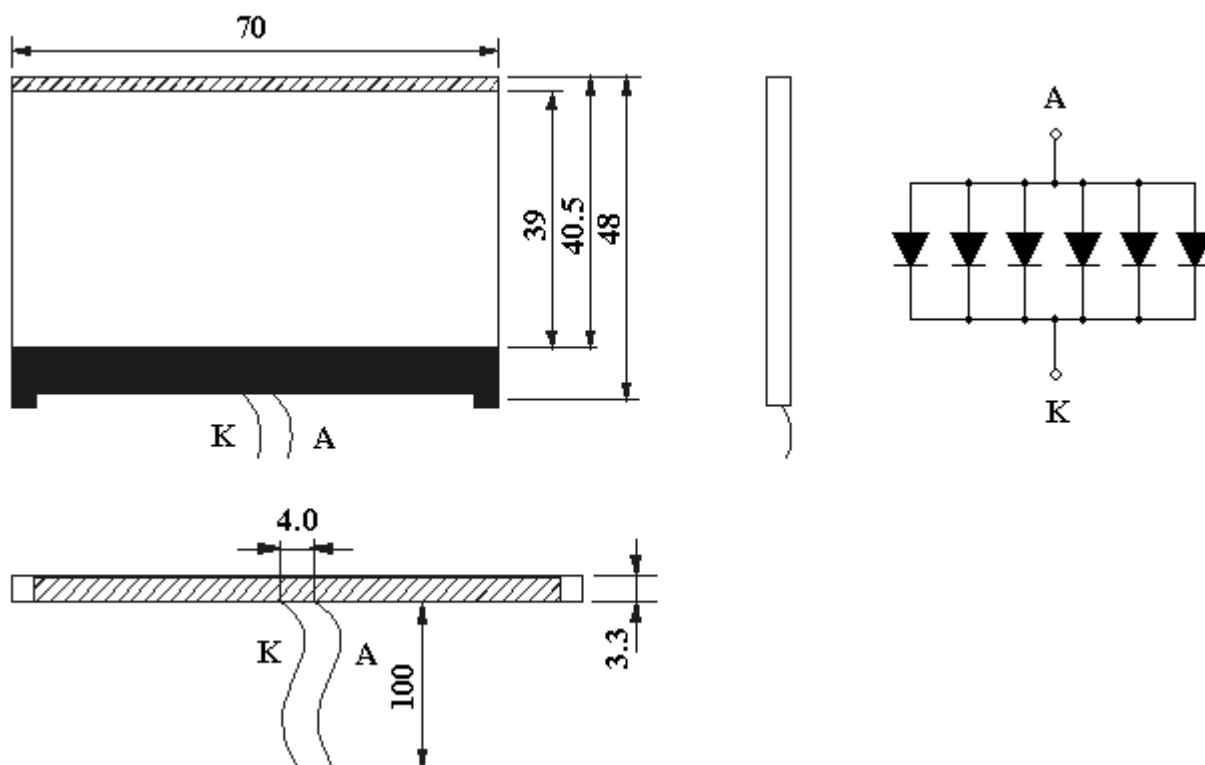
## Descriptions:

The pure green source color devices are made with InGaN on sapphire substrate light emitting diode.

## Applications:

- Flat backlight for LCD, switches and symbols.
- Indicator and backlight in office equipment.
- Indicator and backlight for battery driven equipment.
- Indicator and backlight for audio and video equipment.
- Automotive: Backlighting in dashboards and switches.
- Telecommunication: Indicator and backlighting in telephone and fax.

## Package Dimension:



| Part No.        | Chip Material | Face Color | Source Color |
|-----------------|---------------|------------|--------------|
| KWB-R7039PG/6PG | InGaN         | White      | Pure Green   |

### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm (.010") unless otherwise specified.
3. Specifications are subject to change without notice.

## Absolute Maximum Ratings at Ta=25

| Parameters   | Symbol | Max.              | Unit |
|--|--------|-------------------|------|
| Power Dissipation  | PD     | 540               | mW   |
| Peak Forward Current<br>(1/10 Duty Cycle, 0.1ms Pulse Width) | IFP    | 300               | mA   |
| Forward Current  | IF     | 150               | mA   |
| Reverse Voltage  | VR     | 5                 | V    |
| Electrostatic Discharge (HBM)                                | ESD    | 400               | V    |
| Operating Temperature Range                                  | Topr   | -20 to +70        |      |
| Storage Temperature Range                                    | Tstg   | -25 to +75        |      |
| Lead Soldering Temperature<br>[4mm (.157") From Body]        | Tsld   | 260 for 5 Seconds |      |

## Electrical Optical Characteristics at Ta=25

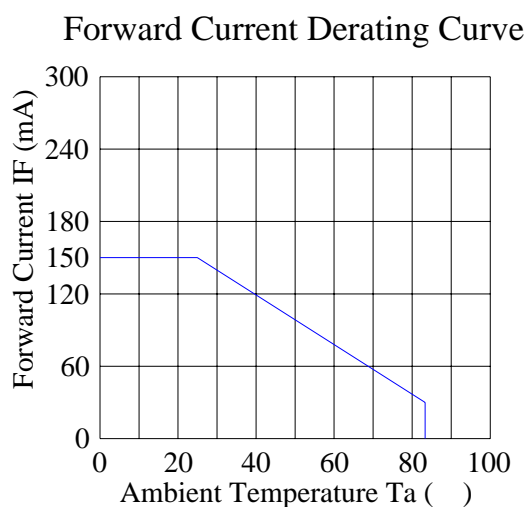
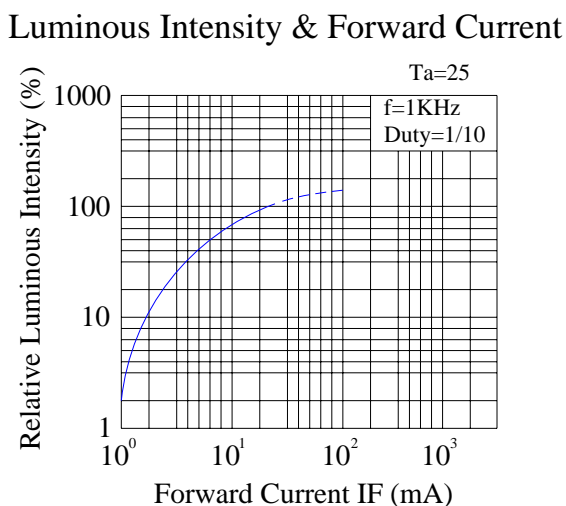
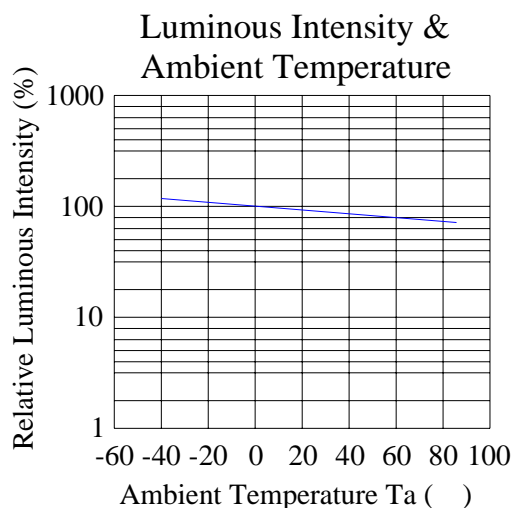
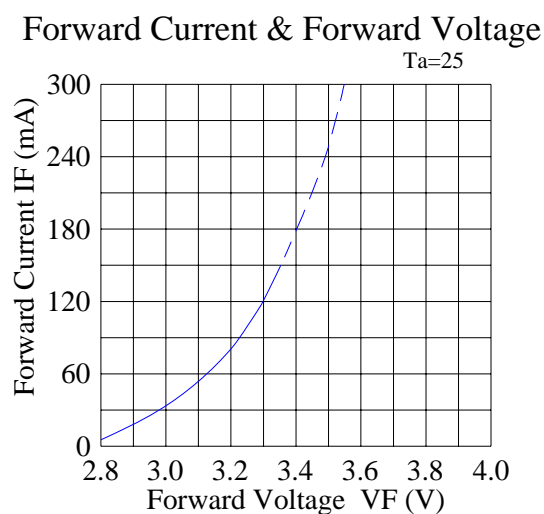
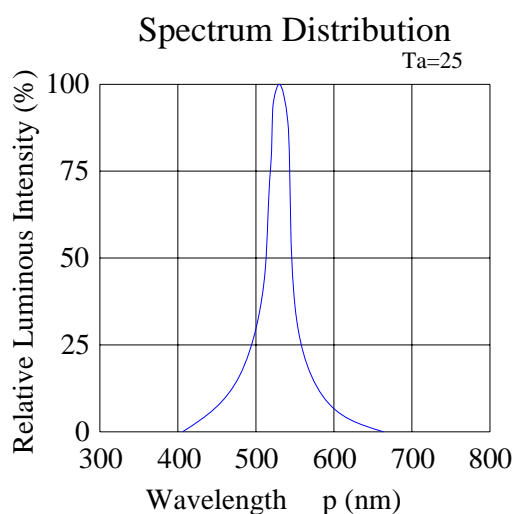
| Parameters                       | Symbol      | Min. | Typ. | Max. | Unit              | Test Condition    |
|----------------------------------|-------------|------|------|------|-------------------|-------------------|
| Luminous Intensity               | Lv          | 80   | 120  | ---  | cd/m <sup>2</sup> | IF=90mA (Note 1)  |
| Forward Current<br>(Recommended) | IF          | 60   | 90   | 120  | mA                | VF=3.20V          |
| Luminous Uniformity              |             | ---  | 75%  | ---  |                   | IF=90mA           |
| Peak Emission Wavelength         | $\lambda_p$ | ---  | 520  | ---  | nm                | IF=120mA          |
| Dominant Wavelength              | $\lambda_d$ | ---  | 525  | ---  | nm                | IF=120mA (Note 2) |
| Spectral Line Half-Width         | $\lambda$   | ---  | 35   | ---  | nm                | IF=120mA          |
| Forward Voltage                  | VF          | 2.80 | 3.30 | 3.60 | V                 | IF=120mA          |
| Reverse Current                  | IR          | ---  | ---  | 50   | $\mu$ A           | VR=5V             |

### Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. The dominant wavelength ( $\lambda_d$ ) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

## Typical Electrical / Optical Characteristics Curves

(25 Ambient Temperature Unless Otherwise Noted)



## Please read the following notes before using the product:

### 1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

### 2. Storage

2.1 If the package contains a moisture proof bag inside, please don't open the package before using.

2.2 Before opening the package, the LEDs should be kept at 30 °C or less and 80%RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30 °C or less and 60%RH or less.

### 3. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260 °C for 5 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

### 4. Soldering

When soldering, for Lamp without stopper type and must be leave a minimum of 3mm clearance from the base of the lens to the soldering point.

To avoided the Epoxy climb up on lead frame and was impact to non-soldering problem, dipping the lens into the solder must be avoided.

Do not apply any external stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering conditions:

| Soldering Iron |                                | Wave Soldering |              |
|----------------|--------------------------------|----------------|--------------|
| Temperature    | 300 °C Max.                    | Pre-heat       | 100 °C Max.  |
| Soldering Time | 3 sec. Max.<br>(one time only) | Pre-heat Time  | 60 sec. Max. |
|                |                                | Solder Wave    | 260 °C Max.  |
|                |                                | Soldering Time | 5 sec. Max.  |

Note: Excessive soldering temperature and / or time might result in deformation of the LED lens or catastrophic failure of the LED.

### 5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

### 6. Caution in ESD

Static Electricity and surge damages the LED. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED. All devices equipment and machinery must be properly grounded.