

White Backlight Displays

Technical Data Sheet

Part No.: KWB-R9221W/2W

## Features:

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

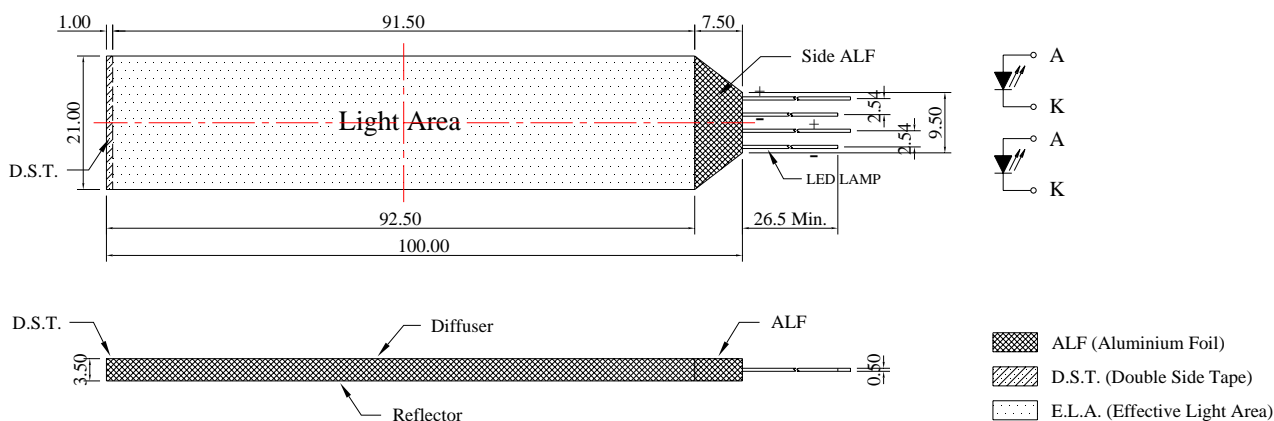
## Descriptions:

The white 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-R9221W/2W	InGaN	White	White

### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (.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	2×90	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	2×100	mA
Forward Current	IF	2×25	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 [4mm (.157") From Body]	Tsld	260 for 5 Seconds	

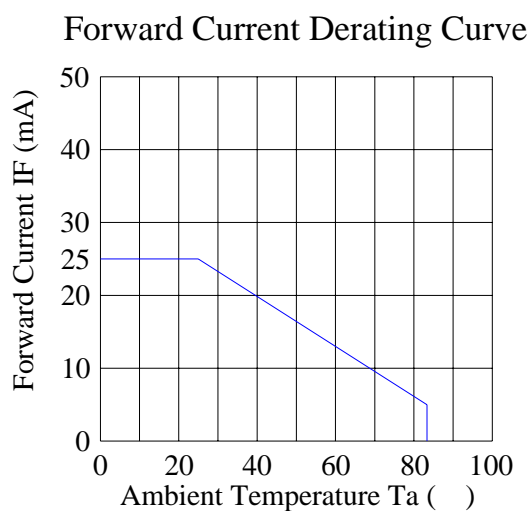
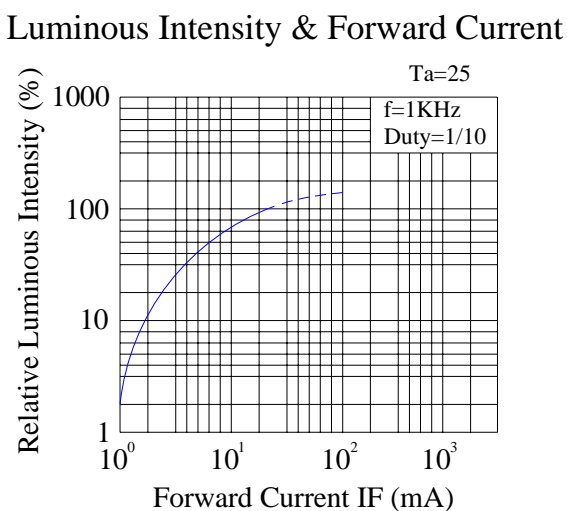
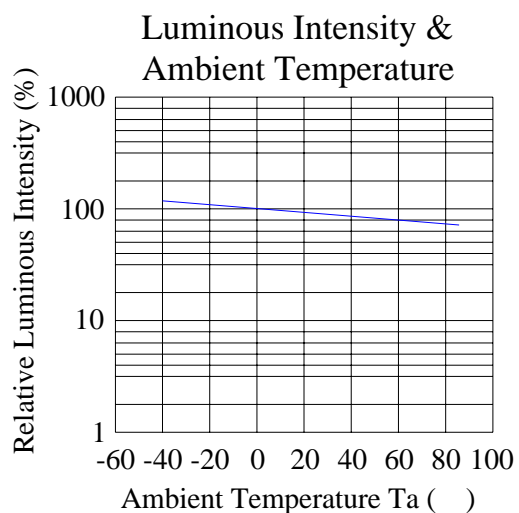
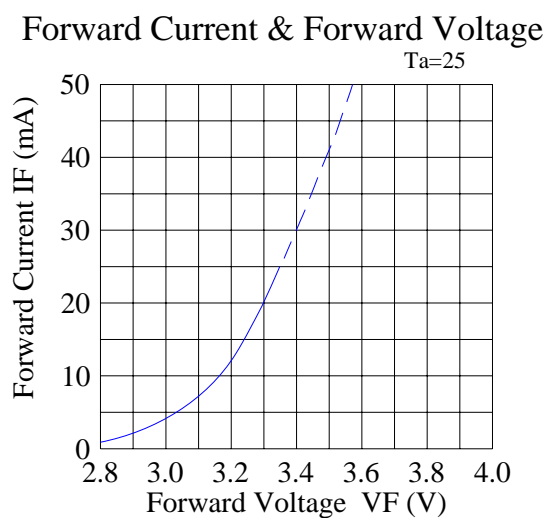
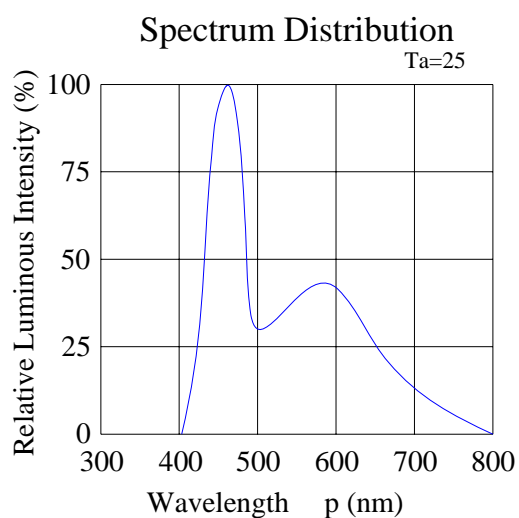
### Electrical Optical Characteristics at Ta=25

Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	Lv	120	180	---	cd/m <sup>2</sup>	IF=2×15mA (Note 1)
Forward Current (Recommended)	IF	10	15	20	mA	VF=3.20V (Per Chip)
Luminous Uniformity		---	75%	---		VF=3.30V (Per Chip)
Chromaticity Coordinates	X	---	0.27	---		IF=20mA (Note 2) (Per Chip)
	Y	---	0.28	---		
Forward Voltage	VF	2.80	3.30	3.60	V	IF=20mA (Per Chip)
Reverse Current	IR	---	---	50	μA	VR=5V

#### Notes:

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- It use many parameters that correspond to the CIE 1931 2°. X, Y, and Z are CIE 1931 2° values of Red, Green and Blue content of the measurement.

Typical Electrical / Optical Characteristics Curves (Per Chip)  
 (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. (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.