

LG-05BB4C-5118Q

DATA SHEET

SPEC. NO. : SZ20090301
DATE : 2020/09/03
REV. : A/0

Approved By:

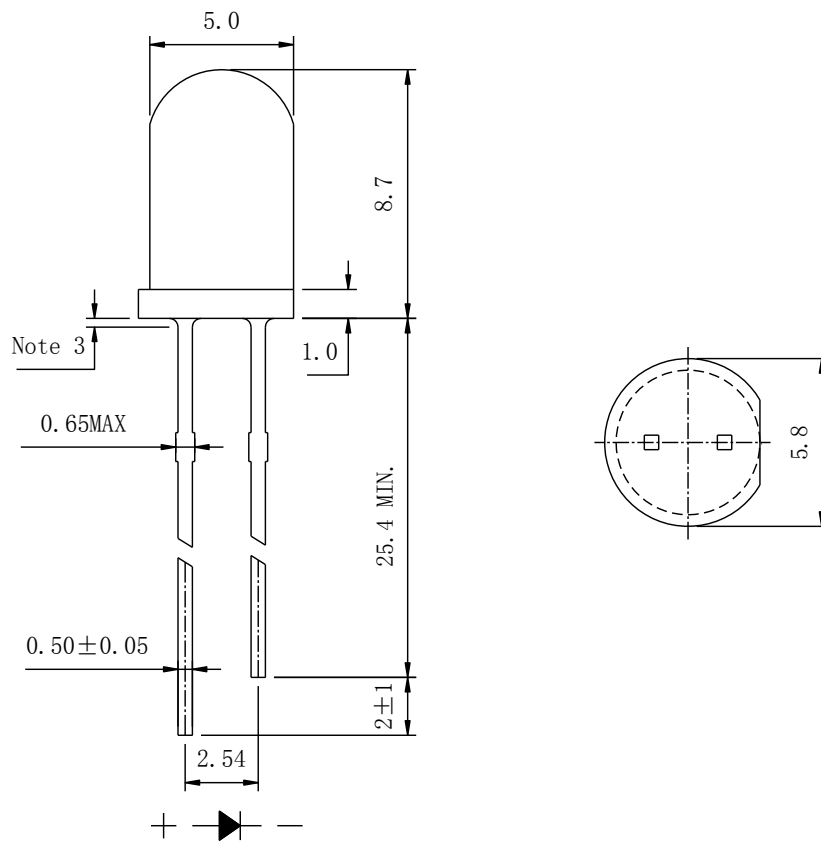
Checked By:

Prepared By:

Feature

- ◆ Pb free product – RoHS compliant
- ◆ Low power consumption, High efficiency
- ◆ General purpose leads
- ◆ Reliable and rugged
- ◆ Long life – solid state reliability

Package Dimensions



Part NO.	Lens Color	Source Color
LG-05BB4C-5118Q	Water Clear	Blue

Notes:

1. All dimensions are in millimeters.
2. Tolerance is ± 0.25 mm unless otherwise noted.
3. Protruded resin under flange is 1.0mm max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25 °C

Parameter	MAX	Unit
Power Dissipation	120	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	100	mA
Continuous Forward Current	30	mA
Electrostatic Discharge (HBM)*3	2000	V
Reverse Voltage	5	V
Operating Temperature Range	-40 °C to + 85 °C	
Storage Temperature Range	-40 °C to + 100 °C	
Lead Soldering Temperature [2mm From Body]	260 °C for 3 Seconds	
Lead Soldering Temperature [5mm From Body]	260 °C for 5 Seconds	

1. Storage:

The storage ambient for the LEDs should not exceed 30 °C temperature or 70% relative humidity.

It is recommended that LEDs out of their original packaging are used within three months.

For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in desiccators with nitrogen ambient.

2. Precautions in handling:

- When soldering, leave 2mm of minimum clearance from the resin to the soldering point.
- Dipping the resin to solder must be avoided.
- Correcting the soldered position after soldering must be avoided.
- In soldering, do not apply any stress to the lead frame particularly when heated.
- When forming a lead, make sure not to apply any stress inside the resin.
- Lead forming must be done before soldering.
- It is necessary to cut the lead frame at normal temperature.

3. Caution in ESD:

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

Electrical Optical Characteristics at Ta=25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I _v	2500	4000	5500	mcd	I _F =20mA (Note 1, 4)
Viewing Angle	2θ _{1/2}	---	20	---	Deg.	(Note 2)
Peak Emission Wavelength	λ _p	---	468	---	nm	I _F =20mA
Dominant Wavelength	λ _d	463	468	473	nm	I _F =20mA (Note 3)
Spectral Line Half-Width	Δλ	---	26	---	nm	I _F =20mA
Forward Voltage	V _F	2.7	2.9	3.2	V	I _F =20mA
Reverse Current	I _R	---	---	10	μA	V _R =5V

Notes:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve. Tolerance of Luminous Intensity: ±15%.
2. θ_{1/2} is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength, λ_d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device. Tolerance of Dominant Wavelength: ±1.0nm.
4. Tolerance of Forward Voltage: ±0.1V.

Recommended soldering conditions:

	Wave Soldering (Pb Free)	Soldering Iron
Pre-heat Temperature	100°C Max.	---
Pre-heat Time	60sec. Max.	---
Peak Temperature	260°C Max.	300°C Max.
Dwell Time	5sec. Max. (one time only)	3sec. Max. (one time only)

Notes:

Excessive soldering temperature and/or time might result in deformation of the LED lens or catastrophic failure of the LED. IR reflow is not suitable process for the LED lamp product.

Bin Code List For Reference:

Luminous Intensity Combination(mcd at 20mA)

Rank	Min	Max
S23	2500	3200
S24	3200	4200
S25	4200	5500

*Measurement Uncertainty of Luminous Intensity: $\pm 15\%$

Forward Voltage Combination (V at 20mA)

Rank	Min	Max
V6	2.7	3.0
V7	3.0	3.2

*Measurement Uncertainty of Forward Voltage: $\pm 0.1V$

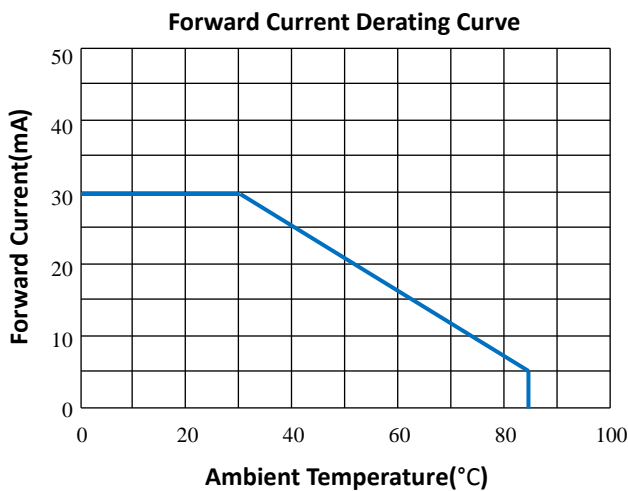
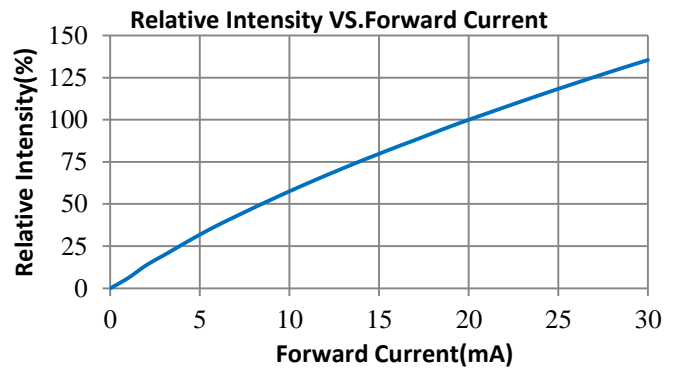
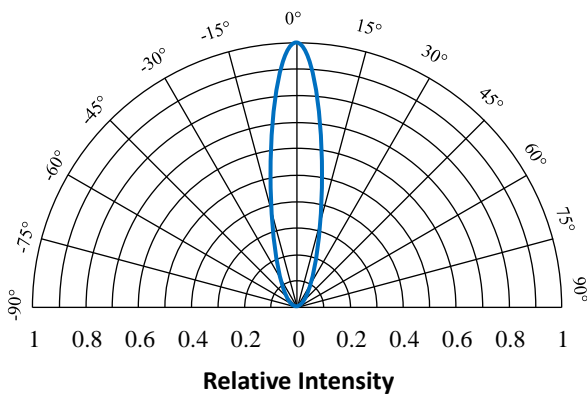
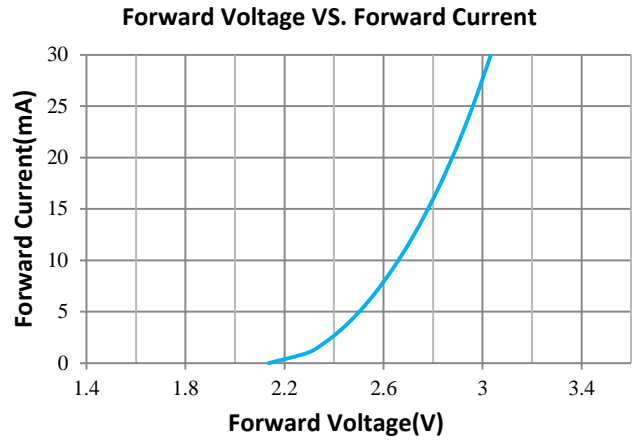
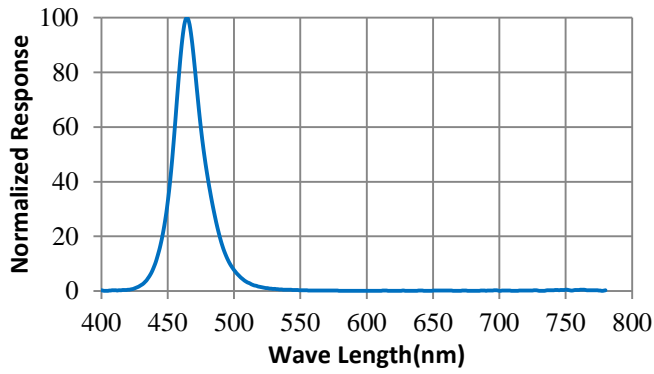
Dominant Wavelength Combination (V at 20mA)

Rank	Min	Max
B1	463	468
B2	468	473

*Measurement Uncertainty of Dominant Wavelength $\pm 1.0nm$

Typical Electrical / Optical Characteristics Curves

(25 °C Ambient Temperature Unless Otherwise Noted)



LED MOUNTING METHOD

1. The lead pitch of the LED must match the pitch of the mounting holes on the PCB during component placement. Lead-forming may be required to insure the lead pitch matches the hole pitch. Refer to the figure below for proper lead forming procedures (Fig.1).

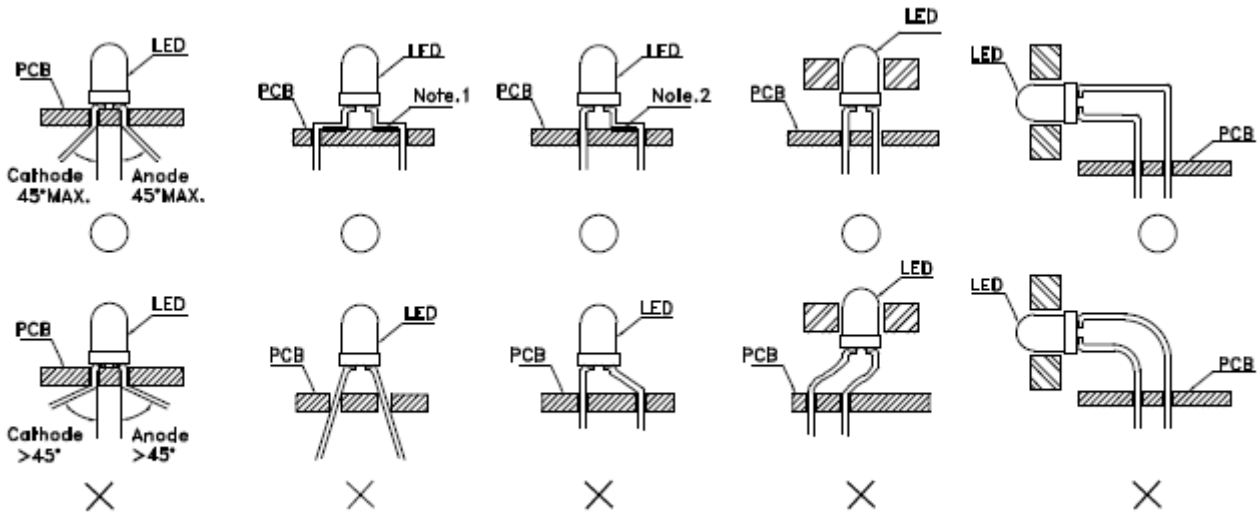


Fig. 1

“o” Correct mounting method “x” Incorrect mounting method

Note 1-2: Do not route PCB trace in the contact area between the lead frame and the PCB to prevent short-circuits.

2. When soldering wire to the LED, use individual heat-shrink tubing to insulate the exposed leads to prevent accidental contact short-circuit (Fig.2).

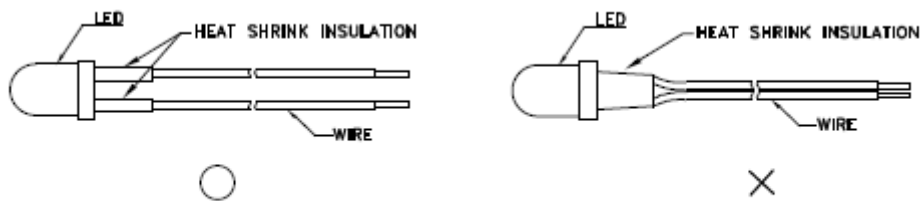


Fig. 2

3. Use stand-offs (Fig.3) or spacers (Fig.4) to securely position the LED above the PCB.

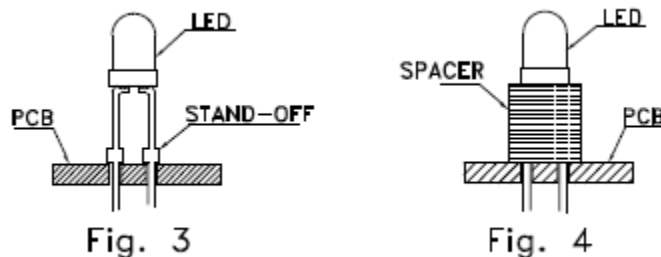


Fig. 3

Fig. 4

LEAD FORMING PROCEDURES

1. Maintain a minimum of 2mm clearance between the base of the LED lens and the first lead bend (Fig.5 and Fig.6).

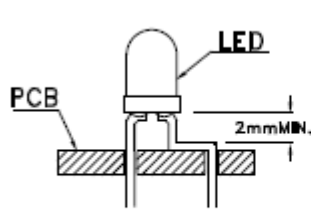


Fig. 5

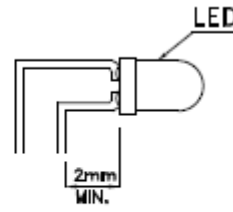


Fig. 6

2. Lead forming or bending must be performed before soldering, never during or after soldering.

3. Do not stress the LED lens during lead-forming in order to fractures in the lens epoxy and damage the internal structures.

4. During lead forming, use tools or jigs to hold the leads securely so that the bending force will not be transmitted to the LED lens and its internal structures. Do not perform lead forming once the component has been mounted onto the PCB (Fig.7).

5. Do not bend the leads more than twice (Fig.8).

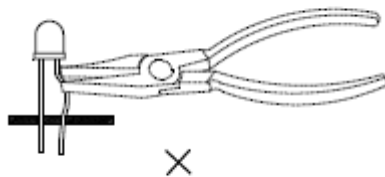


Fig. 7

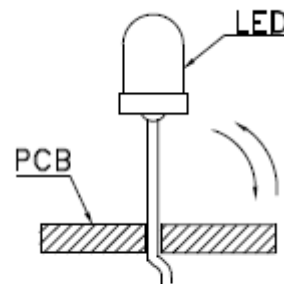


Fig. 8

6. After soldering or other high-temperature assembly, allow the LED to cool down to 50 °C before applying outside force (Fig.9). In general, avoid placing excess force on the LED to avoid damage. For any questions please consult with LIGHT representative for proper handling procedures.

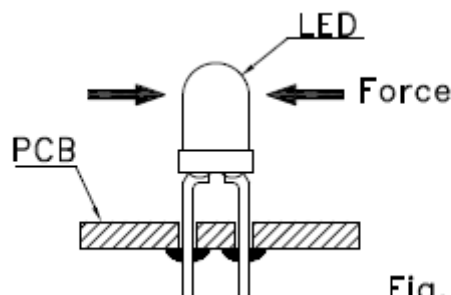
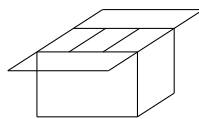
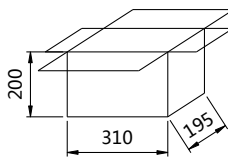
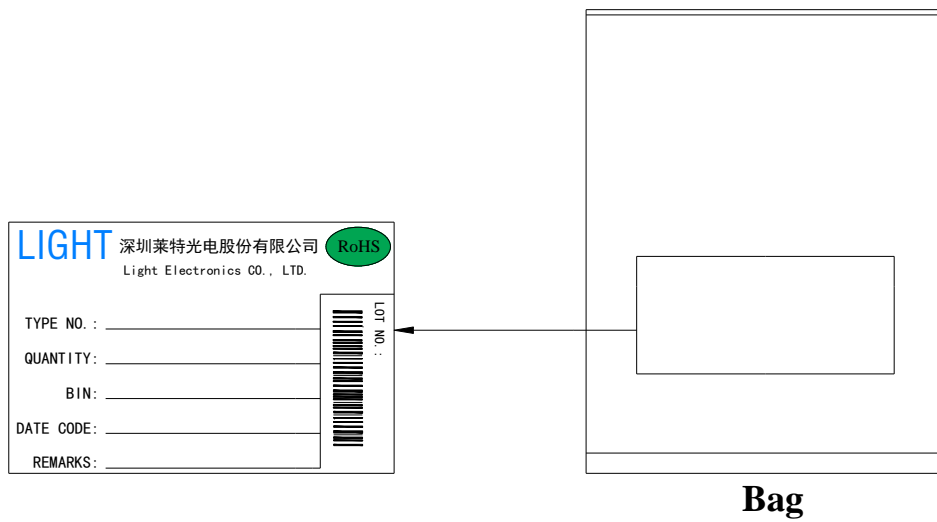
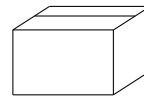


Fig. 9

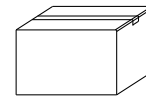
PACKAGE



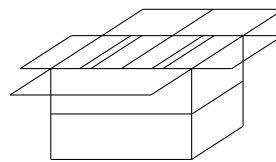
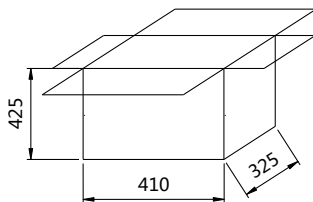
1



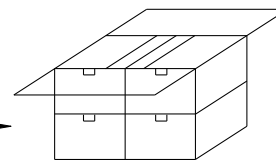
2



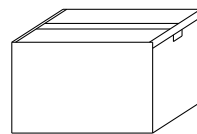
3



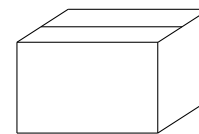
1



2



4



3

Bag minimum volume (pcs / Bag)	Bag volume (pcs / Bag)	Inner carton volume (Bags / carton)	Outer carton volume (Boxes / Carton)
250	1000	10	4

Others

The appearance and specifications of the product may be modified for improvement, without prior notice.