



SHENZHEN GUOYEXING OPTOELECTRONICS CO., LTD.

## SPECIFICATION FOR APPROVAL

Customer: \_\_\_\_\_

Description: LED LAMP

Model: GL-800MBFC

Sample No: \_\_\_\_\_

No.: \_\_\_\_\_

Date: 2008-08-06

Enclosure is the specification

| SHENZHEN GUOYEXING OPTOELECTRONICS CO., LTD. |               |                   |                 |
|--|---------------|-------------------|-----------------|
| Production Dept.                             | Quality Dept. | Engineering Dept. | Marketing Dept. |
|  |               |                   |                 |

| APPROVED SIGNATURES |  |  |  |
|---------------------|--|--|--|
|                     |  |  |  |

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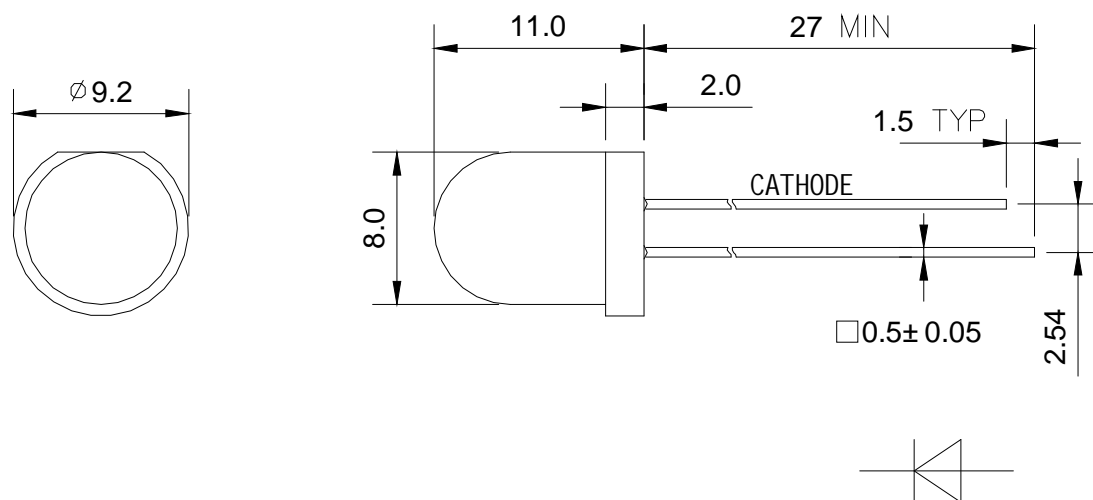


GL-800MBFC BLUE

## 1. Features

- 1) 8mm DIAMETER LAMP
- 2) LOW CURRENT REQUIREMENT
- 3) LOW POWER CONSUMPTION
- 4) VERSATILE MOUNTING ON P.C. BOARD PANEL
- 5) LONG LIFE-SOLID STATE RELIABILITY

## 2. Package Dimensions



### Notes:

- 1) All dimensions are in millimeters.
- 2) Tolerance is  $\pm 0.25$  unless otherwise noted.
- 3) Specifications are subject to change without notice.



3.

| Part No.   | Chip Material | Emitting Color | Lens Type   | Iv(mcd)@20mA |      |      | Viewing Angle |
|------------|---------------|----------------|-------------|--------------|------|------|---------------|
|            |               |                |             | Min.         | Typ. | Max  | 2 θ 1/2       |
| GL-800MBFC | GaN           | Blue           | Water Clear | 2907         | 3200 | 3449 | 22°           |

Note:

θ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

4. Electrical / Optical Characteristics at T<sub>A</sub>=25° C

| Parameter                | Symbol         | Min. | Typ. | Max. | Units | TestConditions       |
|--------------------------|----------------|------|------|------|-------|----------------------|
| Forward Voltage          | V <sub>F</sub> | 2.8  | 3.2  | 3.8  | V     | I <sub>F</sub> =20mA |
| Peak Wavelength          | λ <sub>p</sub> | 463  | 465  | 467  | nm    | I <sub>F</sub> =20mA |
| Dominate Wavelength      | λ <sub>D</sub> | 467  | 469  | 471  | nm    | I <sub>F</sub> =20mA |
| Spectral Line Half-width | Δ λ            | -    | 22   | -    | nm    | I <sub>F</sub> =20mA |
| Reverse Current          | I <sub>R</sub> | -    | -    | 10   | uA    | V <sub>R</sub> =5V   |

5. Absolute Maximum Ratings at T<sub>A</sub>=25° C

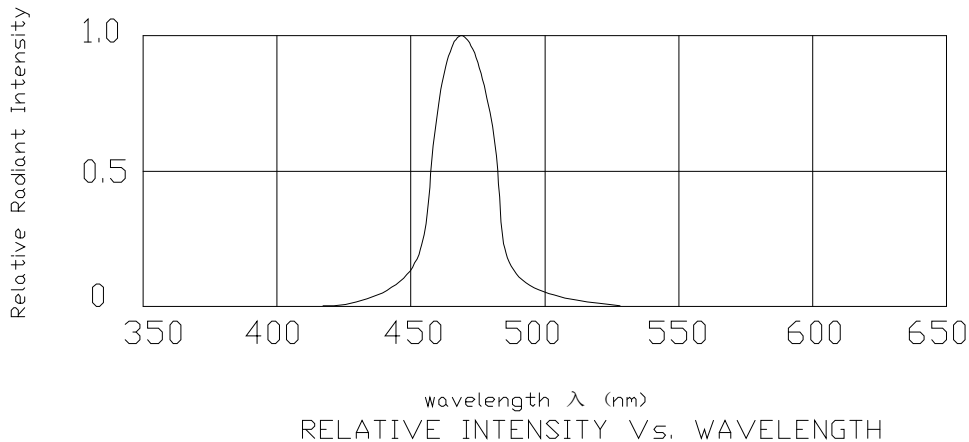
| Parameter                  | Symbo                 | Maximum Rating       | Units |
|----------------------------|-----------------------|----------------------|-------|
| Power dissipation          | P <sub>d</sub>        | 95                   | mW    |
| Forward Current            | I <sub>F</sub>        | 25                   | mA    |
| Peak Forward Current (1)   | I <sub>F</sub> (Peak) | 130                  | mA    |
| Reverse Voltage            | V <sub>R</sub>        | 5                    | V     |
| Operating Temperature      | T <sub>opr</sub>      | -40° C To +80° C     |       |
| Storage Temperature        | T <sub>stg</sub>      | -40° C To +80° C     |       |
| Lead Solder Temperature(2) | T <sub>sol</sub>      | 260° C for 3 seconds |       |

Note:

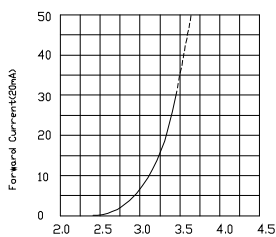
- 1) 1/10 Duty Cycle, 0.1ms Pulse Width.
- 2) 3mm below package base.
- 3) The production accord with the demand of ROHS.



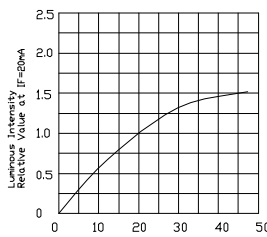
Relative Intensity Vs Wavelength Chart



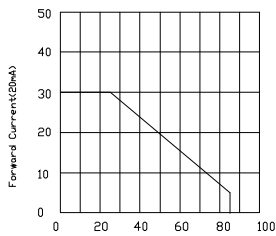
( GL-320MBFC )



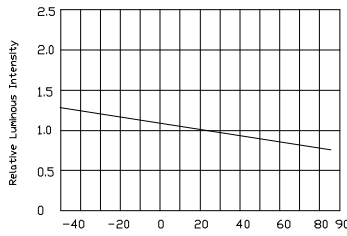
正向电流与正向电压关系曲线图



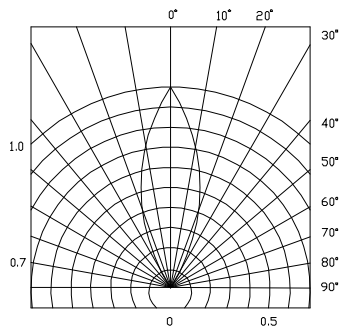
亮度与正向电流关系曲线图



正向电流递减曲线图



亮度与环境温度关系曲线图



发光角度图解



## RELIABILITY

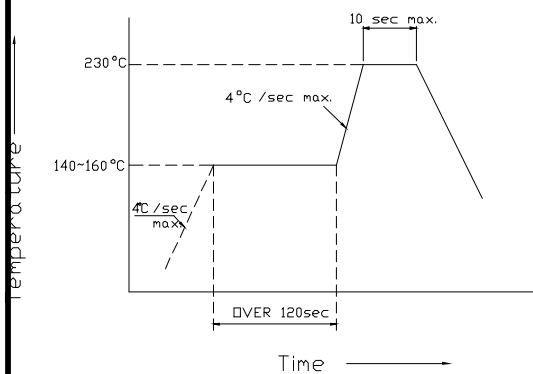
### (1) TEST ITEMS AND RESULTS

| Type                    | Test Item     | Test condition                  |                                  | Note       | Sample size | Accept |
|-------------------------|---------------|---------------------------------|----------------------------------|------------|-------------|--------|
|                         |               | Test condition                  | Test condition                   |            |             |        |
| (Environments Sequence) | Thermal shock | -20°C~80°C<br>15min, 10s, 15min | -40°C~100°C<br>15min, 10s, 15min | 100 cycles | 20~560      | 0      |
|                         |               | 190°C~240°C<br>5min             |                                  | 1 cycles   | 20~560      | 0      |
|                         |               | 240°C~260°C<br>5sec             |                                  | 1 cycles   | 20~560      | 0      |
| (Operation Sequence)    | Life test     | Ta=25°C If=20mA                 | Ta=25°C If=20mA                  | 1000Hrs    | 20~560      | 0      |
| (Destructive Sequence)  |               | Ta=100°C                        |                                  | 60 minutes | 10-20       | 0      |

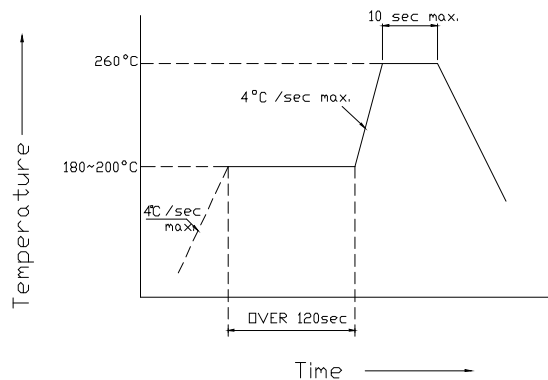
### Reflow Soldering Instructions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

#### 1>Lead Solder



#### 2>Lead-Free Solder





## Intensity And Color Bin Limits

### (1) Intensity Bin Limits (I<sub>F</sub>=20mA)

| SELECTION CODE FOR<br>SUPER BRIGHT LEDS |                                      |      |
|---|--------------------------------------|------|
| Group                                   | Light intensity in mcd(20mA)<br>Blue |      |
|   | Min.                                 | Max. |
| W                                       | 2005                                 | 2605 |
| X                                       | 2605                                 | 3385 |
| Y                                       | 3385                                 | 4400 |
| Z                                       | 4400                                 | 5720 |

Tolerance for each Bin limit is  $\pm 10\%$

### (2) Color Bin Limits (I<sub>F</sub>=20mA)

| COLOR CODE FOR RED LEDS + DISPLAYS |                         |      |
|------------------------------------|-------------------------|------|
| Group                              | Dom.<br>WaveLength (nm) |      |
|                                    | min.                    | max. |
| P0                                 | 466                     | 468  |
| Q0                                 | 468                     | 470  |
| R0                                 | 470                     | 472  |

Tolerance for each Bin limit is  $\pm 1$  nm.

### Forward Voltage Bin limits(I<sub>F</sub>=20mA)

| Grade<br>(等级) | G3      | H3      | I3      | J3      | K3      |
|---------------|---------|---------|---------|---------|---------|
| Range<br>(范围) | 2.8-3.0 | 3.0-3.2 | 3.2-3.4 | 3.4-3.6 | 3.6-3.8 |

Tolerance for each Bin limit is  $\pm 0.05$  v.