



深圳市国冶星光电子有限公司

SHENZHEN GUOYEXING OPTOELECTRONICS CO., LTD.

# 承认书

## SPECIFICATION FOR APPROVAL

客户名称 Customer: \_\_\_\_\_

产品型号 Model: GYX-SD-KF1311QBZGSURKC-B

承认书编号 No.: SD-CR-1307-012(SJF130709)

制作日期 Date: 2013-7-11

附产品规格书 Enclosure is the specification

深圳市国冶星光电子有限公司 SHENZHEN GUOYEXING OPTOELECTRONICS CO., LTD.			
生产部 Production Dept.	品质部 Quality Dept.	工程部 Engineering Dept.	市场部 Marketing Dept.

客户确认签名 APPROVED SIGNATURES			

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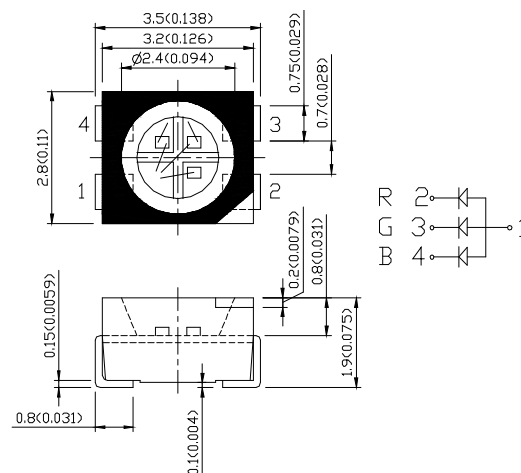
Website: [www.gyx-led.com](http://www.gyx-led.com)


**GYX-SD-KF1311QBZGSURKC-B FULL COLOR  
(GYX-SD-KF1311QBZGSURKC-B 全彩)**
**Features (特征)**

- 1) 3.5mmx2.8mm SMDLED, 1.9mm THICKNESS.  
(3.5mmx2.8mm SMD 发光二极管, 总高 1.9mm)
- 2) LOW POWER CONSUMPTION.  
(低功率消耗)
- 3) WIDE VIEWING ANGLE.  
(宽角度发光)
- 4) INDOOR AND OUTDOOR DISPLAYS.  
(室内及室外显示屏的理想选择)
- 5) BLUAK FACE TYPE  
(黑表面类型)
- 6) PACKAGE: 2000PCS/REEL.  
(装带: 2000 个/卷)

**Description (说明)**

The full source color devices are made with InGaN、InGaAlP and InGaN Light Emitting Diode.  
(此全彩之光颜色来源于 InGaN、InGaAlP and InGaN 三种晶片组成的发光二极管.)

**Package Dimensions( 封装尺寸 )**

**Notes:**

1. All dimensions are in millimeters (inches).  
(单位: 毫米<英寸>)
2. Tolerance is  $\pm 0.1$  ( 0.004" ) unless otherwise noted.  
(允差:  $\pm 0.1$  <0.004" >,另有标注除外.)
3. Specifications are subject to change without notice.  
(规格若有变动,恕不另行通知.)


**GUOYEXING OPTOELECTRONICS CO.,LTD.**

Part No. (产品型号)	Dice (发光颜色)	Lens Type (胶体颜色)	Iv (mcd) @10mA (亮度)			Viewing Angle (发光角度)
			Min. (最小值)	Typ. (规格值)	Max (最大值)	2 θ 1/2
GYX-SD-KF1311QBZGSURKC-B	Red (AlGaInP) (红色)	Water Clear (无色透明)	90	115	/	120°
	Green (InGaN) (绿色)		440	520	/	
	Blue (InGaN) (蓝色)		90	110	/	

Note:

1.  $\theta$  1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.  
( $\theta$  1/2 是指当亮度减到一半时与发光特性曲线相交所对应的角度值。)

**Electrical / Optical Characteristics at TA=25° C (25° C 环境下之电性/光学特性)**

Symbol (符号)	Parameter (参数)	Device (发光颜色)	Min (最小值)	Typ (规格值)	Max (最大值)	Units (单位)	Test Conditions (测试条件)
$\lambda$ peak	Peak Wavelength (峰值波长)	Red (红色)	/	625	/	nm	IF=10mA
		Green (绿色)	/	520	/		
		Blue (蓝色)	/	465	/		
$\lambda$ D	Dominate Wavelength (主波长)	Red (红色)	620	622	/	nm	IF=10mA
		Green (绿色)	524	526	/		
		Blue (蓝色)	462	465	/		
$\Delta \lambda$ 1/2	Spectral Line Half-width (波宽)	Red (红色)	/	20	/	nm	IF=10mA
		Green (绿色)	/	38	/		
		Blue (蓝色)	/	25	/		
C	Capacitance (电容)	Red (红色)	/	25	/	PF	VF=0V;f=1MHz
		Green (绿色)	/	40	/		
		Blue (蓝色)	/	110	/		
VF	Forward (正向电压)	Red (红色)	1.8	2.1	/	V	IF=10mA
		Green (绿色)	2.8	3.2	/		
		Blue (蓝色)	2.8	3.2	/		
IR	Reverse Current (反向电流)	Red (红色)	/	/	10	uA	VR=5V
		Green (绿色)	/	/			
		Blue (蓝色)	/	/			

**Absolute Maximum Ratings at TA=25° C (在 25° C 环境下之绝对最大额定值)**

Parameter (参数)	Blue (蓝色)	Red (红色)	Green (绿色)	Units (单位)
Total Power dissipation (1) (总功率消耗)	260			mW
DC Forward Current (正向直流电流)	30	30	30	mA
Peak Forward Current (2) (正向电流峰值)	150	150	150	mA
Reverse Voltage (反向电压)	5	5	5	V
Operating/Storage Temperature (操作/贮藏温度)	-40° C To +85° C			

Note:

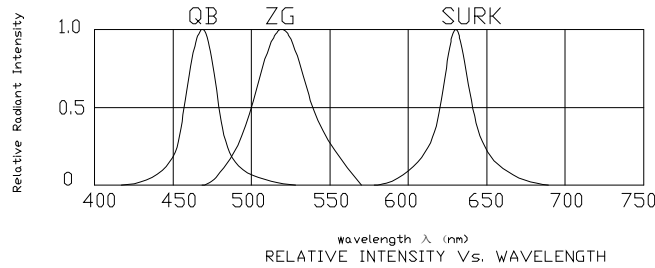
1. Within 260mW at all chips are lightened. (三个晶片同时发光所消耗的功率)
2. 1/10 Duty Cycle. 0.1ms Pulse Width. (1/10 周期, 0.1ms 脉宽)



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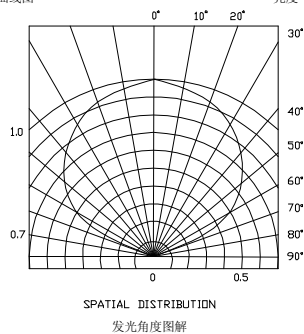
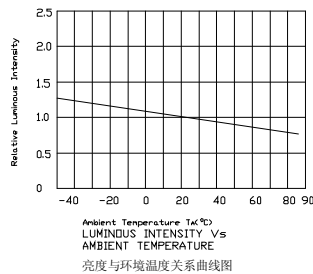
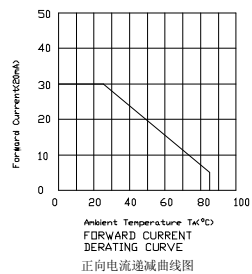
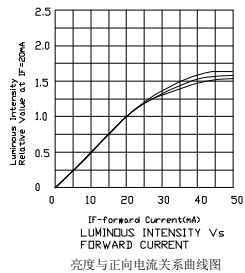
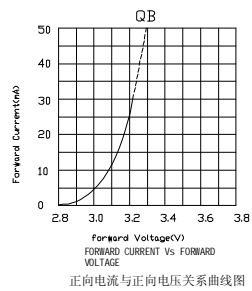
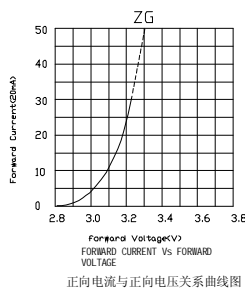
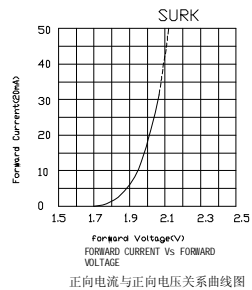
**Relative Intensity Vs Wavelength Chart**

(相对亮度与波长关系曲线图)



**Full Color GYX-SD-KF1311QBZGSURKC-B**

(全彩 GYX-SD-KF1311QBZGSURKC-B)





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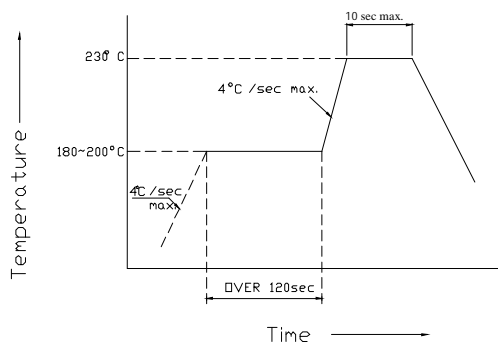
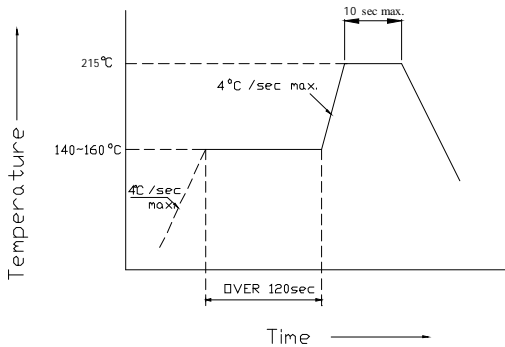
**GYX-SD-KF1311QBZGSURKC-B**

**SMT Reflow Soldering Instructions (SMT 回流焊说明)**

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.  
(本产品最多只可回焊两次,且在首次回焊后须冷却至室温之后方可进行第二次回焊.)

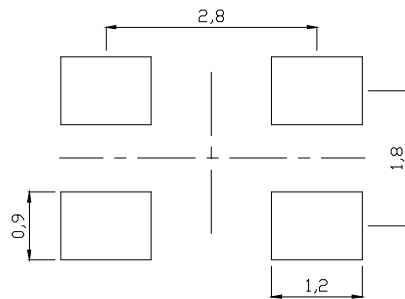
1>Lead Solder (有铅回焊)

2>Lead-Free Solder(无铅回焊)



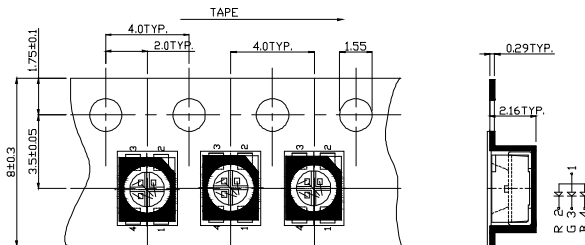
**Recommended Soldering Pattern (推荐焊盘式样)**

<Units:mm>(单位:毫米)



**Tape Specifications (装带规格)**

<Units:mm>(单位:毫米)



Adhesion Strength of Cover Tape : Adhesion strength to be 0.1 – 0.7N when the cover tape is turned off from the carrier at 10° angle to be the carrier tape.(盖带力度: 当盖带与载带成 10 度角时力度为 0.1 – 0.7N)

**RELIABILITY (可靠性)****(1) TEST ITEMS AND RESULTS (测试项目及结果)**

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat (Reflow Soldering) 回流焊试验	JEITA ED-4701 300 301	Tsld=230°C, 10sec. (Pre treatment 30°C,70%,168hrs)	2 times	0/50
Solderability (Reflow Soldering) 可焊性试验	JEITA ED-4701 300 303	Tsld=215±5°C, 3sec. (Leader Solder)	1time over 99%	0/50
Thermal Shock 冷热冲击	JEITA ED-4701 300 307	-40°C~100°C 5min. 5min.	100cycles	0/50
Temperature Cycle 温度循环	JEITA ED-4701 100 105	-40°C~25°C~100°C~25°C 30min. 5min. 30min. 5min.	100cycles	0/50
High Temperature Storage 高温保存	JEITA ED-4701 200 201	Ta=100°C	1000 hrs	0/50
High Temperature High Humidity Storage 高温高湿保存	JEITA ED-4701 100 103	Ta=80°C, 80%RH	1000 hrs	0/50
Low Temperature Storage 低温保存	JEITA ED-4701 200 202	Ta=-40°C	1000 hrs	0/50
Steady State Operating Life 常温点亮		Ta=25°C, IF=20MA(R G B)	1000 hrs	0/50
Steady State Operating Life of High Temperature 高温点亮		Ta=85°C, IF=5mA	1000 hrs	0/50
Steady State Operating Life of High Humidity Heat 高温高湿点亮		60°C, 90%RH, IF=15Ma	500 hrs	0/50
Steady State Operating Life of Low Temperature 低温点亮		Ta=-30°C, IF=20MA(R G B)	1000 hrs	0/50

**(2) CRITERIA FOR JUDGING THE DAMAGE**

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20MA	-	U.S.L.*)X1.1
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	-	U.S.L.*)X2.0
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =20MA	L.S.L.**))X0.7	-

\*) U.S.L.: Upper Standard Level

\*\*) L.S.L.: Lower Standard Level



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## Intensity And Color Bin Limits (亮度及颜色等级)

注明：材料出货范围为以下其中一个 BIN

### (1) Intensity Bin Limits ( $I_{F(R, G, B)}=10\text{mA}$ )

SELECTION CODE FOR SUPER BRIGHT LEDS						
Group	Light intensity in mcd(10MA)					
	Red		Green		Blue	
	Min.	Max.	Min.	Max.	Min.	Max.
P0	90	126	/	/	90	117
Q0	126	175	/	/	117	150
U0	/	/	440	570	/	/
V0	/	/	570	750	/	/

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

### (2) Color Bin Limits ( $I_F=10\text{mA}$ )

COLOR CODE FOR LEDS + DISPLAYS						
Group	Dom. WaveLength (nm)					
	Red		Green		Blue	
	min.	max.	min.	max	min.	max
P1	620	625	/	/	/	/
P2	625	630	/	/	/	/
N3	/	/	/	/	462	466
N4	/	/	/	/	466	470
N5	/	/	524	528	/	/
N6	/	/	528	532	/	/

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

### Forward Voltage Bin limits( $I_F=10\text{mA}$ )< VF 值等级>

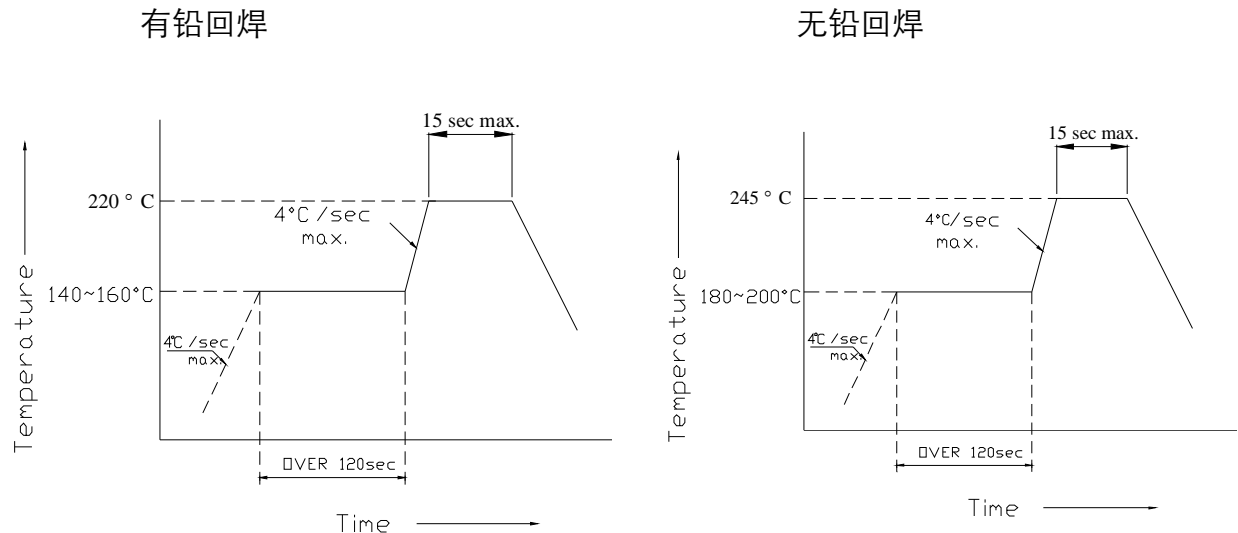
Grade (等级)	Device (发光颜色)	1
正向电压 Forward Voltage (V)	Red	1.8-2.3
	Green	2.8-3.3
	Blue	2.8-3.3

Tolerance for each Bin limit is  $\pm 0.1\text{V}$

## 焊接操作与储存说明

### 1.回流焊说明:

本产品最多只可回焊两次,且在首次回焊后须冷却至室温之后方可进行第二次回焊。



### 2.修补焊接 注意事项:

我们建议仅于修补时进行手动焊接。焊接使用的电烙铁须是恒温电烙铁，且回焊温度控制在 260°C 10 秒以内，或 300°C 3 秒钟以内。

- ①烙铁焊头不可碰及胶体。
- ②当引脚受热至 85°C 或高于此温度时不可受压，否则金线焊会断开造成死灯。

### 3.使用注意事项:

(1) 打开包装前: 在温度 5-30°C 湿度, 不超过 60%RH 条件下, LED 可以保存半年, 在储存的时候, 建议采用带干燥剂的防潮袋包装方式 (包装袋须抽真空或者充氮气)。

(2) 打开包装后: LED 在  $\leq 30^{\circ}\text{C}$  ,  $\leq 60\%\text{RH}$  相对湿度的条件下, 我们强烈建议你从打开包装到完成贴片整个过程在 24 小时内完成。如果有未使用完的剩余 LED, 我们建议重新放入干燥箱或 60°C 烘烤箱烘烤 12 小时后使用防静电, 防潮袋密封包装, 并放置在一个密封容器中, 同时必须使用干燥剂。我们推荐仍使用出厂时的防潮袋, 并且需要重新密封 (建议拆一包用一包, 拆包后建议在包装背面注明拆包装时间, 以便追溯)。

(3) 用 SMD LED 产品生产显示屏产品时, 不同批次产品不能在同一个屏上使用, 否则容易产生发光不均匀现象(马赛克现象)。

(4) 如果屏体超过 3 天未使用, 每次点亮屏体时需采用预热点亮方式: 30%-50% 的亮度先预热 4-8 小时, 再调整为正常亮度 (80%-100%) 点亮屏体; 如果屏体超过 7 天未使用, 每次点亮屏体时需采用预热点亮方式: 30%-50% 的亮度先预热 12 小时以上, 再调整为正常亮度 (80%-100%) 点亮屏体, 从而将湿气排除, 以便在使用时无异常。