



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: \_\_\_\_\_

产品名称 Description:           SMD LED          

产品型号 Model:           GYX-SD-K1311QWC          

样品编号 Lot No.: \_\_\_\_\_

编号 No.:                                   SM-CG-0209                                  

日期 Date:                                   2008-08-06                                  

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.	质量部 Quality Dept.	工程部 Engineering Dept.	市场部 Marketing Dept.

客户确认签名 APPROVED SIGNATURES			

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**GYX-SD-K1311QWC WHITE**  
**(GYX-SD-K1311QWC 白光)**

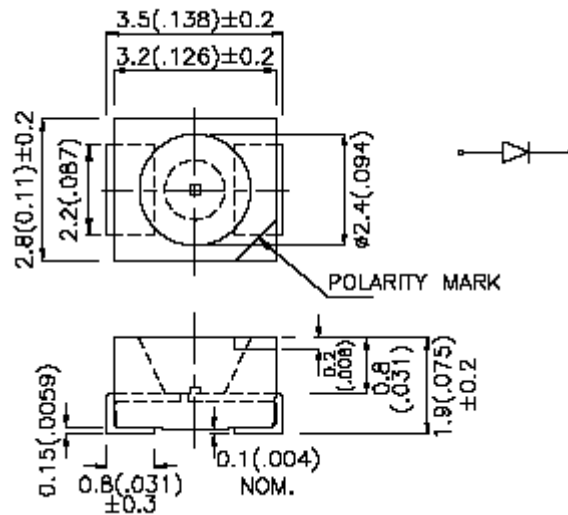
**Features (特征)**

- 1) 3.5mmx2.8mm SMD LED, 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 SIDE VIEWING ANGLE.  
(宽角度发光)
- 4) IDEAL FOR BACKLIGHT AND INDICATOR.  
(背光源和指示灯的理想选择)
- 5) VARIOUS COLORS AVAILABLE.  
(多种发光颜色可供选择)
- 6) PACKAGE: 2000PCS/REEL.  
(装带: 2000 个/卷)

**Description (说明)**

The White source color devices are made with GaN Light Emitting Diode.  
(此种白光之光颜色来源于由 GaN 化合物制成的发光二极管.)

**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.)



注：此页参数仅对样品，出货范围参照最后一页

Part No. (产品型号)	Dice (发光颜色)	Lens Type (胶体颜色)	Iv (mcd) @20MA (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-K1311QWC	White<GaN> (白色)	Water Clear (无色透明)	1000	-	1700	120°
			X=0.28-0.33 Y= 0.28-0.33			

Note:

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

(θ 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)
λ peak	Peak Wavelength (峰值波长)	White (白色)	/	/	/	nm	IF=20MA
λ D	Dominate Wavelength (主波长)	White (白色)	/	/	/	nm	IF=20MA
Δ λ 1/2	Spectral Line Half-width (波宽)	White (白色)	/	/	/	nm	IF=20MA
C	Capacitance (电容)	White (白色)	/	65	/	PF	VF=0V;f=1MHz
VF	Forward (正向电压)	White (白色)	-	3. 1	-	V	IF=20MA
IR	Reverse Current (反向电流)	White (白色)	/	/	10	uA	VR=5V

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

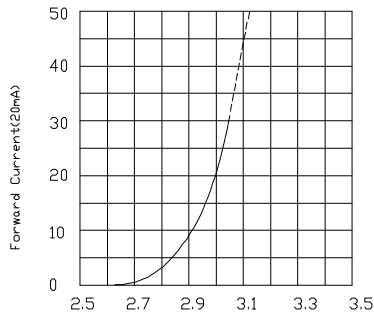
Parameter (参数)	White (白色)	Units (单位)
Power dissipation (功率消耗)	105	mW
DC Forward Current (正向直流电流)	30	mA
Peak Forward Current (1) (正向电流峰值)	160	mA
Reverse Voltage (反向电压)	5	V
Operating/Storage Temperature (操作/贮藏温度)	-40° C To + 85° C	

Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width. (1/10 周期, 0.1ms 脉宽)

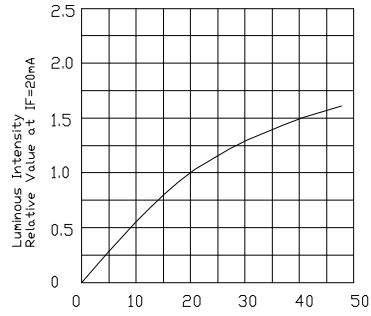


White GYX-SD-K1311QWC  
(白光 GYX-SD-K1311QWC)



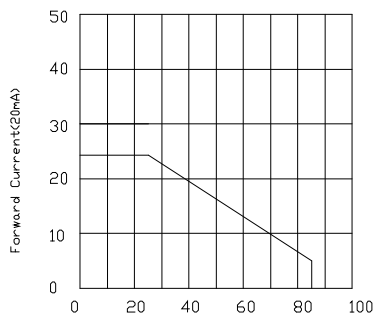
forward Voltage(V)  
FORWARD CURRENT VS FORWARD VOLTAGE

正向电流与正向电压关系曲线图



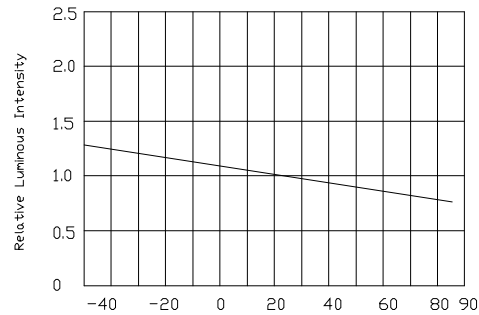
IF-forward Current(mA)  
LUMINOUS INTENSITY VS FORWARD CURRENT

亮度与正向电流关系曲线图



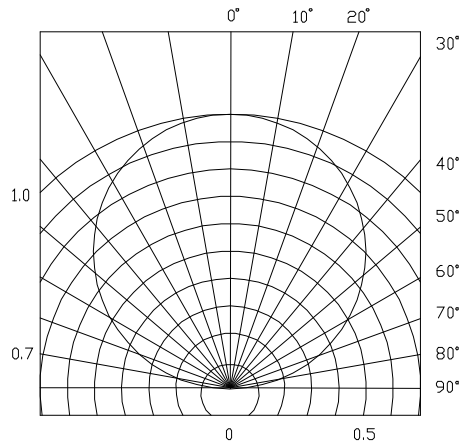
Ambient Temperature TA(°C)  
FORWARD CURRENT DERATING CURVE

正向电流递减曲线图



Ambient Temperature TA(°C)  
LUMINOUS INTENSITY VS AMBIENT TEMPERATURE

亮度与环境温度关系曲线图



SPATIAL DISTRIBUTION

发光角度图解



### GYX-SD-K1311QWC

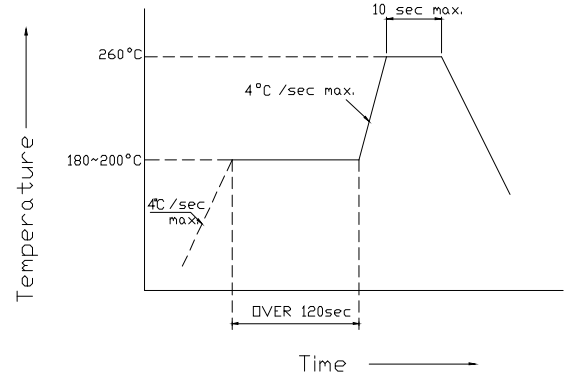
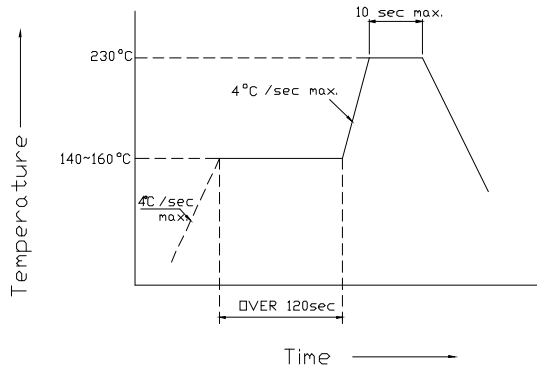
#### SMT Reflow Soldering Instructions (SMT 回流焊说明)

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.)

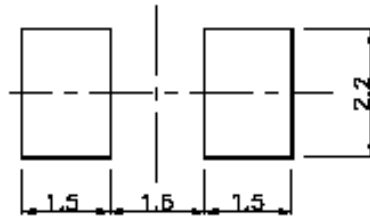
1>Lead Solder (有铅回焊)

2>Lead-Free Solder(无铅回焊)



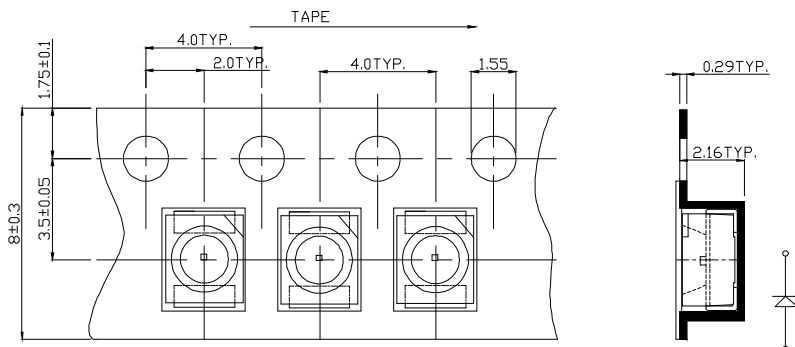
#### Recommended Soldering Pattern (推荐焊盘式样)

<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)	JEITA ED-4701 300 301	Tsld=260°C, 10sec. (Pre treatment 30°C, 70%, 168hrs)	2 times	0/50
Solderability (Reflow Soldering)	JEITA ED-4701 300 303	Tsld=215±5°C, 3sec. (Leader Solder)	1time over 95%	0/50
Thermal Shock	JEITA ED-4701 300 307	-40°C~100°C 5min. 5min.	100cycles	0/50
Temperature Cycle	JEITA ED-4701 100 105	-40°C~25°C~100°C~25°C 30min. 5min. 30min. 5min.	100cycles	0/50
Moisture Resistance Cycle	JEITA ED-4701 200 203	25°C~65°C~-10°C 90%RH 24hrs./1cycle	10 cycles	0/50
High Temperature Storage	JEITA ED-4701 200 201	Ta=100°C	1000 hrs	0/50
High Temperature High Humidity Storage	JEITA ED-4701 100 103	Ta=60°C, 90%RH	1000 hrs	0/50
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40°C	1000 hrs	0/50
Steady State Operating Life		Ta=25°C, If=20MA	1000 hrs	0/50
Steady State Operating Life of High Temperature		Ta=85°C, If=5mA	1000 hrs	0/50
Steady State Operating Life of High Humidity Heat		60°C, 90%RH, If=15mA	500 hrs	0/50
Steady State Operating Life of Low Temperature		Ta=-30°C, If=20MA	1000 hrs	0/50
Drop		H=75cm	3 cycles	0/50
Substrate Bending	JEITA ED-4702	3mm, 5 ± 1 sec.	1 time	0/50
Stick	JEITA ED-4702	5N, 10 ± 1 sec.	1 time	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



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

**(1) Intensity Bin Limits (IF=20MA)**

SELECTION CODE FOR SUPER BRIGHT LEDS		
Group	Light intensity in mcd(20MA) White	
	Min.	Max.
W	1000	1150
X	1150	1300
Y	1300	1500
Z	1500	1800

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

**(2) Color Bin Limits (IF=20MA)**

Area(区域) Coordinate(座标)	C1	D0	D1	E0	E1
X	0.27-0.29	0.29-0.31	0.29-0.31	0.31-0.33	0.31-0.33
Y	0.28-0.31	0.27-0.30	0.30-0.33	0.29-0.32	0.32-0.35

Tolerance for each Bin limit is  $\pm 0.01$ .

**Forward Voltage Bin limits(IF=20MA)< V<sub>F</sub> 值等级>**

Grade (等级)	G	H	I
Range (范围)	2.9-3.1	3.1-3.3	3.3-3.5

Tolerance for each Bin limit is  $\pm 0.1$ v.