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-KB1311SURKZGC-B

样品编号 Lot No.:_____

编号 No.：SM-CG-0508

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-KB1311SURKZGC-B FULL COLOR
(GYX-SD-KB1311SURKZGC-B 红色/绿色)

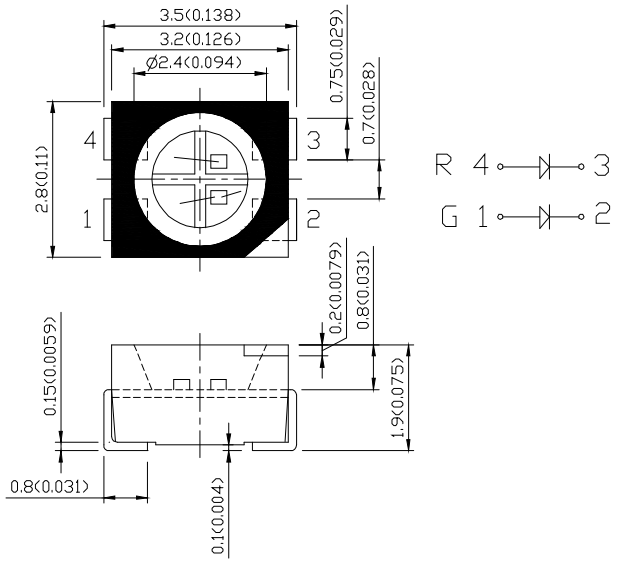
Features（特征）

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 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 LENS TYPES AVAILABLE.
(多种胶体颜色可供选择)
6)PACKAGE: 2000PCS/REEL.
(装带: 3000 个/卷)

Description（说明）

The source color devices are made with InGaN、GaALAS Light Emitting Diode.
(此种颜色来源于 InGaN、GaALAS 二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 ±0.1 (0.004″) unless otherwise noted.
(允差: ±0.1 <0.004″ >,另有标注除外.)

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)			ViewingAngle (发光角度)
			Min. (最小值)	Typ. (规格值)	Max .(最大值)	2θ1/2
GYX-SD-KB1311SURKZGC-B	RED(InGaN) (红色)	Water Clear (无色透明)	100	150	200	120°
	Green (InGaN) (绿色)		500	550	600	

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)	Hyper Red (红色)	/	630	/	nm	IF=20mA
		Green (绿色)	/	518	/		
λD	Dominate Wavelength (主波长)	Hyper Red (红色)	620	623	625	nm	IF=20mA
		Green (绿色)	520	525	530		
Δλ 1/2	Spectral Line Half-width (波宽)	Hyper Red (红色)	/	20	/	nm	IF=20mA
		Green (绿色)	/	38	/		
C	Capacitance (电容)	Hyper Red (红色)	/	25	/	PF	VF=0V;f=1MHz
		Green (绿色)	/	40	/		
VF	Forward (正向电压)	Hyper Red (红色)	1.9	2.0	2.1	V	IF=20mA
		Green (绿色)	2.9	3.1	3.5		
IR	Reverse Current (反向电流)	Hyper Red (红色)	/	/	10	uA	VR=5V
		Green (绿色)					

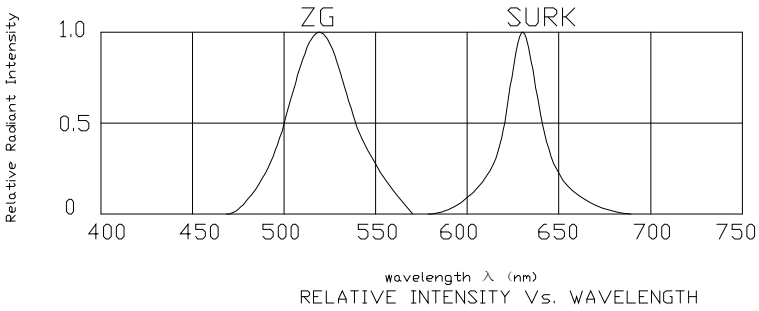
Absolute Maximum Ratings at TA=25° C(在 25° C 环境下之绝对最大额定值)

Parameter (参数)	Hyper Orange (橙色)	Green(绿色)	Units(单位)
Total Power dissipation (1) (总功率消耗)	250		mW
DC Forward Current (正向直流电流)	50	30	mA
Peak Forward Current (2) (正向电流峰值)	195	150	mA
Reverse Voltage （反向电压）	5	5	V
Operating/Storage Temperature(操作/贮藏温度)	-40° C To +85° C		

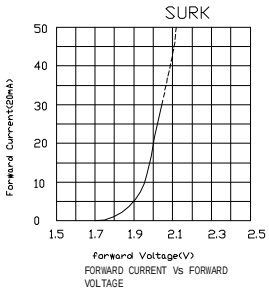
Note:

1. Within 350mW 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)

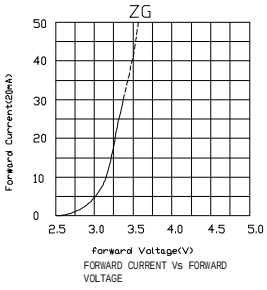
Relative Intensity Vs Wavelength Chart
(相对亮度与波长关系曲线图)



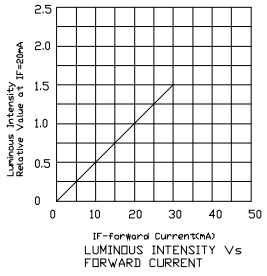
Full Color GYX-SD-KB1311SURKZGC-B
（全彩 GYX-SD-KB1311SURKZGC-B）



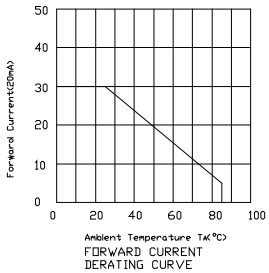
正向电流与正向电压关系曲线图



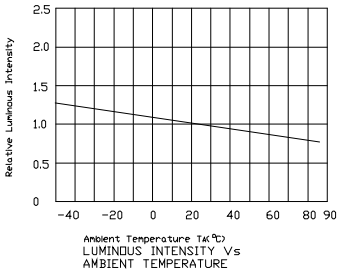
正向电流与正向电压关系曲线图



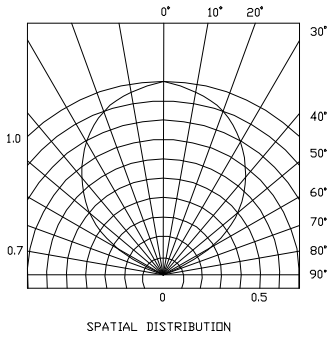
亮度与正向电流关系曲线图



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

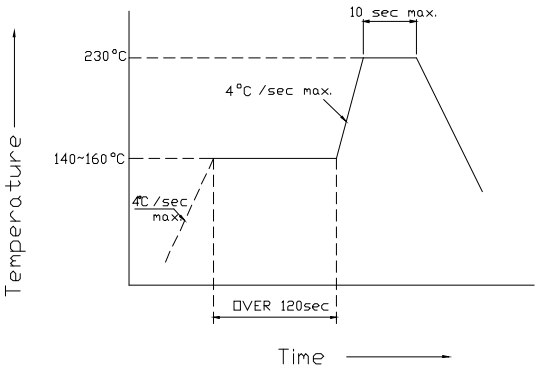
GYX-SD-KB1311SURKZGC-B

SMT Reflow Soldering Instructions (SMT 回流焊说明)

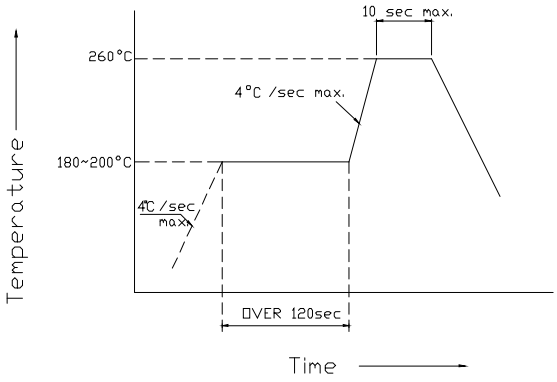
Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

(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）

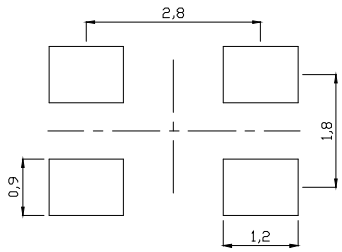


2>Lead-Free Solder(无铅回焊)



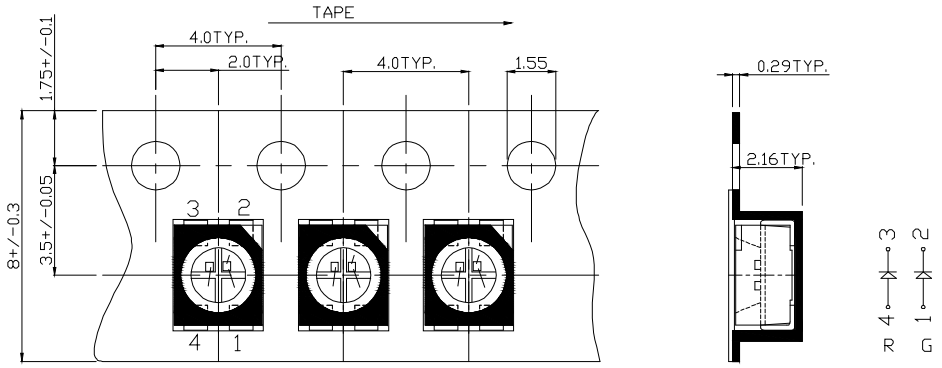
Recommended Soldering Pattern (推荐焊盘式样)

<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 TEST（可靠性测试）

(1) TEST ITEMS AND RESULTS（测试条目及结果）

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resitance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsld=260℃, 10sec. (Pre treatment 30℃,70%,168hrs)	2 times	0/50
Solderability (Reflow Soldering)	JEITA ED-4701 300 303	Tsld=215±5℃, 3sec. (Leader Solder)	1time over 95%	0/50
Thermal Shock	JEITA ED-4701 300 307	-40℃~100℃ 5min. 5min.	100cycles	0/50
Temperature Cycle	JEITA ED-4701 100 105	-40℃~25℃~100℃~25℃ 30min. 5min. 30min. 5min.	100cycles	0/50
Moisture Resistance Cycle	JEITA ED-4701 200 203	25℃~65℃~-10℃ 90%RH 24hrs./1cycle	10 cycles	0/50
High Temperature Storage	JEITA ED-4701 200 201	Ta=100℃	1000 hrs	0/50
High Temperature High Humidity Storage	JEITA ED-4701 100 103	Ta=60℃, 90%RH	1000 hrs	0/50
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40℃	1000 hrs	0/50
Steady State Operating Life		Ta=25℃, I_F=20mA	1000 hrs	0/50
Steady State Operating Life of High Temperature		Ta=85℃, I_F=5mA	1000 hrs	0/50
Steady State Operating Life of High Humidity Heat		60℃, 90%RH, I_F=15mA	500 hrs	0/50
Steady State Operating Life of Low Temperature		Ta=-30℃, I_F=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（损伤判定标准）

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	V_F	I_F=20mA	-	U.S.L.*)X1.1
Reverse Current	I_R	VR=5V	-	U.S.L.*)X2.0
Luminous Intensity	I_V	I_F=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 ($I_{F(R、G)}$=20mA)

SELECTION CODE FOR SUPER BRIGHT LEDS				
Group	Light intensity in mcd(20mA) White			
	Min.	Max.	Min.	Max.
M	90	120	/	/
N	120	180	/	/
P	180	240	/	/
Q	/	/	/	/
R	/	/	/	/
S	/	/	420	550
T	/	/	550	680

(1) Tolerance for each Bin limit is ±10%

(2) Color Bin Limits (I_F=20mA)

COLOR CODE FOR LEDS + DISPLAYS				
Group	Dom. WaveLength (nm)		Dom. WaveLength (nm)	
	Hyper Red		Green	
	min.	max.	min.	max.
1	620	625	/	/
2	625	630	/	/
3	/	/	/	/
4	/	/	/	/
5	/	/	520	525
6	/	/	525	530
7	/	/	530	535

Forward Voltage Bin limits(IF=20mA)< VF 值等级>

Grade (等级)	A	B	C	D	E	F	G	H	I
Range (范围)	1.7~1.9	1.9~2.1	2.1~2.3	2.3~2.5	2.5-2.7	2.7-2.9	2.9-3.1	3.1-3.3	3.3-3.5

Tolerance for each Bin limit is ±0.1V