

**RoHS**

# Specification

## 规格书

Customer Name :

客户名称 : \_\_\_\_\_

Customer P/N :

客户品号 : \_\_\_\_\_

Factory P/N :

公司品号 : HL-509S13RS12GW-C

Sending Date :

送样日期 : \_\_\_\_\_

Client approval 客户审核			Goozo approval 鸿利国泽审核		
Approval 核准	Audit 确认	Confirmation 制作	Approval 核准	Audit 确认	Confirmation 制作
					
<input type="checkbox"/> Qualified 接受		<input type="checkbox"/> Disqualified 不接受		DATE: 日期:	

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注:

- 1.此规格书以中英文方式书写,若有冲突以中文版本为准文本.
- 2.此规格书的最终解释权归属江苏鸿利国泽光电科技有限公司



**ATTENTION 注意**  
 OBSERVE PRECAUTIONS  
 FOR HANDLING  
 ELECTROSTATIC  
 DISCHARGE  
 SENSITIVE  
 DEVICES

**Features(特征)**

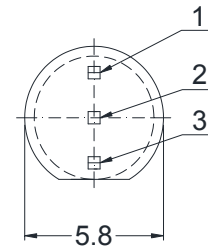
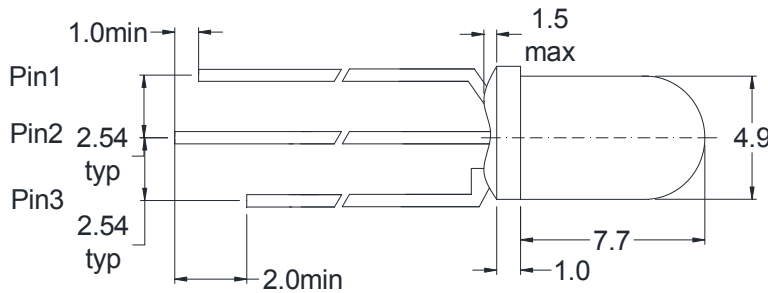
φ5 Double Color LED φ5 双色 LED

Low Power Consumption. 低功耗

Wide Viewing Angle. 大视角

Package:1000pcs/reel 包装:1000pcs/卷

**Package Dimensions 封装尺寸**



1.GREEN  
 2.COMMON CATHODE  
 3.RED

Tolerance Grade 公差等级	Dimension Tolerance (UNIT:mm) 尺寸误差 (单位:mm)			
	0.5~3	3~6	6~30	30~120
	±0.1	±0.2	±0.3	±0.5
Chip 晶片		Lens Color 透镜颜色		
Material 材料	Emitting Color 发光颜色	White Diffused 白色散射		
AlGaInP	Red 红色			
GaP	Yellow Green 黄绿光			

**Optical Characteristics at Ta=25°C 光电参数 Ta=25°C**

Part No	Iv (mcd) @20mA(光强(mcd) @20mA)						Viewing Angle 发光角度
	Red(AlGaInP)			Yellow Green (AlGaInP)			
	Min.	Typ.	Max.	Min.	Typ.	Max.	2θ1/2
HL-509S13RS12GW-C	--	130	--	--	90	--	70

Note 注意:

1.2θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

2θ1/2 是从光学中心线的发光强度为 1 / 2 的光学中心线价值的角度。

2.Tolerance of measurement of luminous intensity±15%.光强测量误差为±15%.

**Electrical / Optical Characteristics at Ta=25°C 光电特性 Ta=25°C**

Symbol 符号	Parameter 参数	Red(红色)			Yellow Green(黄绿光)			Units 单位	Test Conditions 测试条件
		Min	Typ	Max	Min	Typ	Max		
$\lambda_D$	Dominate Wavelength 主波长	627	630	633	567	570	573	nm	I <sub>F</sub> =20mA
V <sub>F</sub>	Forward Voltage 正向电压	1.8	2.0	2.2	1.8	2.0	2.2	V	
I <sub>R</sub>	Reverse Current 反向电流	-	10		-	10		uA	V <sub>R</sub> =5V
ESD	Electrostatic Discharge 抗静电能力	-	2000		-	2000		V	/

Note 注意:

1.Tolerance of measurement of forward voltage±0.1V. 正向电压的测量误差为±0.1V.

2.Tolerance of measurement of Wavelength±2.0nm. 波长的测量误差为±2.0nm.

**Absolute Maximum ratings at Ta=25°C 绝对最大额定值 Ta=25°C**

Parameter 参数	Red 红色	Greenish Yellow 浅绿黄	Units 单位
Power dissipation 消耗功率	50	50	mW
DC Forward Current 直流正向电流	25	25	mA
Peak Forward Current[1] 峰值正向电流[1]	100	100	mA
Operating Temperature 操作温度	-30°C~85°C		
Storage Temperature 储存温度	-40°C~100°C		

Note 注意:

1.IFP Conditions : Pulse Width≤10msec 条件 : 脉冲宽度≤10msec

2.Tsol Conditions : 1.6mm from the base of the epoxy bulb 条件 : 焊接位置离胶体底部 1.6 毫米

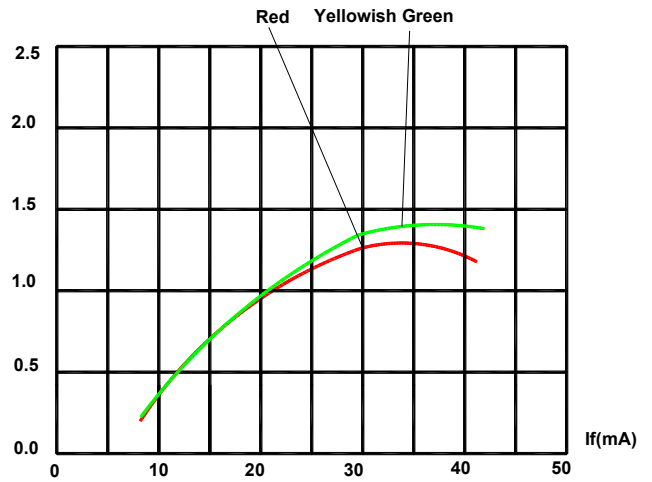
**Reliability Performance Test Items And Result 可靠性测试项目和判定**

Test Classification 测试类别	Test Item 测试项目	Test Conditions 测试条件	Test Duration 测试持续时间	Sample Size 样品数量	AC/RE 接受/拒收
Life Test 寿命测试	Room Temperature DC Operating Life Test 室温直流寿命测试	Ta=25°C±5°C, If=20mA	1000 hrs	22 pcs	0/1
Environment Test 环境模拟实验	Thermal Shock Test 冷热冲击	100°C±5°C 5min ↑↓ -40°C±5°C 5min.	100 cycles	22 pcs	0/1
	Temperature Cycle Test 高低温循环实验	100°C±5°C 30min ↑↓5min -40°C±5°C 30min.	100 cycles	22 pcs	0/1
	High Temperature & High Humidity Test 高温高湿实验	60°C±5°C/90% RH IF=5mA	1000 hrs	22 pcs	0/1
	High Temperature Storage 高温储存	Ta=100°C±5°C	1000 hrs	22 pcs	0/1
	Low Temperature Storage 低温储存	Ta=-40°C±5°C	1000 hrs	22 pcs	0/1
Mechanica Test 机械测试	Resistance to Soldering Heat 耐焊接实验	Temp=260°C max T=5sec max	1times	22 pcs	0/1
	Lead Integrity 引脚折弯实验	Load 2.5N(0.25kgf) 0° ~ 90° ~0°	3times	22 pcs	0/1

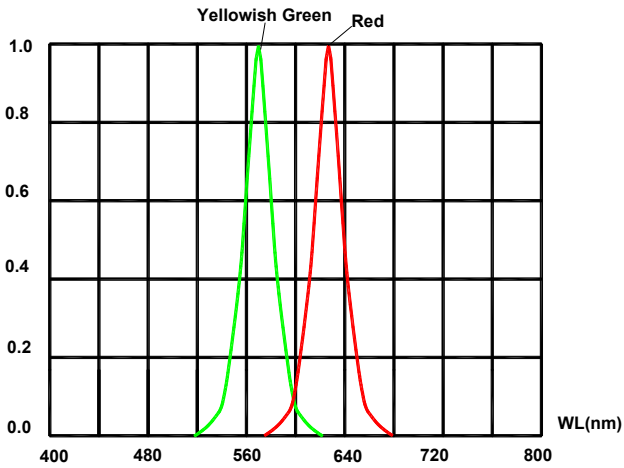
# HL-509S13RS12GW-C



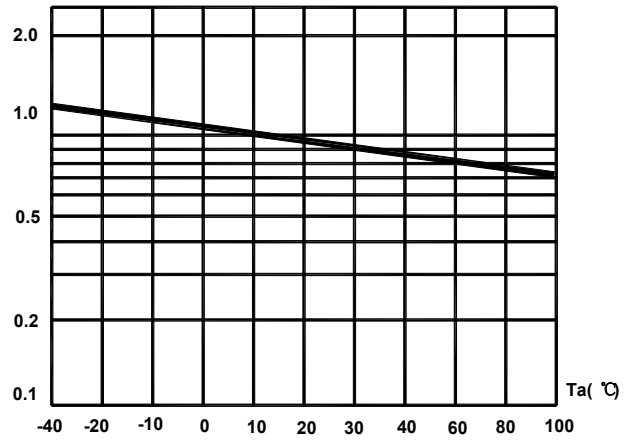
Forward Current vs. Forward Voltage



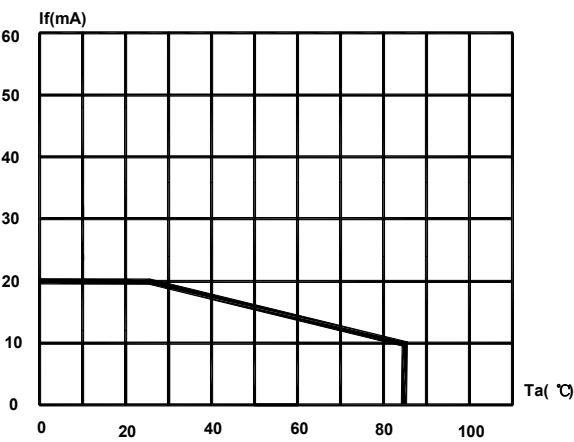
Relative Luminous Intensity vs. Forward Current



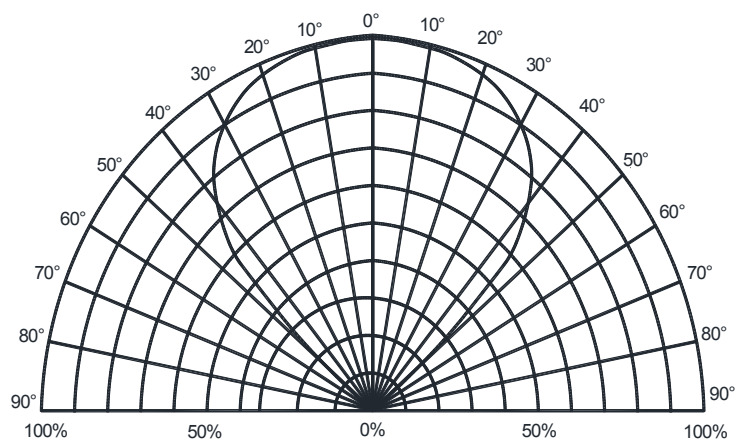
Relative Luminous Intensity vs. Wavelength



Relative Luminous Intensity vs. Ambient Temperature

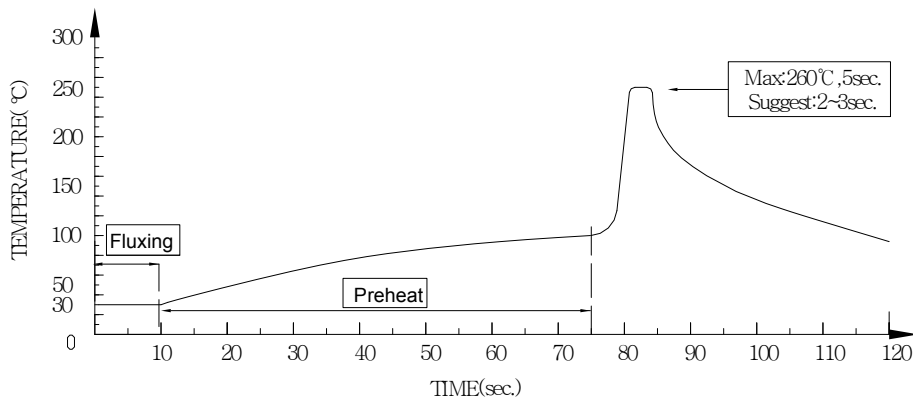


Maximum Forward Current vs. Ambient Temperature



Relative Luminous Intensity vs. Radiation Angle

## ● Dip Soldering



1. Please avoid any external stress applied to the lead-frames and epoxy while the LEDs are at high temperature, especially during soldering
2. DIP soldering and hand soldering should not be done more than one time.
3. After soldering, avoid the epoxy lens from mechanical shock or vibration until the LEDs are back to room temperature.
4. Avoid rapid cooling during temperature ramp-down process
5. Although the soldering condition is recommended above, soldering at the lowest possible temperature is feasible for the LEDs

## ● IRON Soldering

**300°C Within 3 sec., One time only.**