

承 認 書

SPECIFICATION FOR APPROVAL

● 客戶名称	
● Customer	
● 客戶品號	
● Customer Part No.	
● 产品品號	HC-S2012CHMRWTF-F1
● Brightek Part No.	
● 产品規格描述	0805白红双色
● Specification	
● 製錶人	王清
● Prepared By	
● 審 核	李东平
● Checkedy	
● 客 戶 回 簽	
● Customer	
● 送样日期:	
● Deliver date:	

說明：一、謹致執事者：茲提供敝公司產品之有關詳細規格及圖面資料，敬請給予辦理測試認定手續。

同時敬請 送返一份附有貴公司簽認之測試認定後之樣品認定書。

We are sending you our specification and drawings for your approval. Please return to us one copy "For Approval" with your approved signatures.

二、客戶意見欄 Customer' S Proposal

☐ Approve 承認 (請於認可欄中簽名)

☐ Disagree 不同意

Reason 原因:

光宇集团 中高端光电元件定制企业，20多年封装经验，品质稳定，值得信赖，体现光的价
光宇集团国际（香港）有限公司

GTU Group International (HK) Co., Limited

广东光宇半导体科技有限公司

工厂地址：东莞市寮步镇松湖智谷 A2 栋 3 楼

东莞市弘呈光电有限公司

DongGuan Hong cheng Optoelectronics Co.,Ltd.

工厂地址：广东省东莞市樟木头镇莞樟路樟木头段 15 号 15 栋 2108 号

ADD:Room 2108,No.1 building, Wanhui Garden, East Guanzhang Road, Zhangmutou, Dongguan, Guangdong, China

TEL: 0769-87797616 87182291 Fax: 0769-82337396 www.hc-led168.com

业务联系人：李顺阳 13925714318 (微信同号) 销售总监 企业邮箱：sales@led-hc.com



版本/版次	修改日期	修改内容

Features

2.0mm × 1.25mm SMT LED, 0.8mm thickness

Low power consumption

Wide view angle

Package: 3000pcs/reel

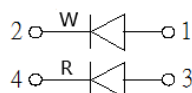
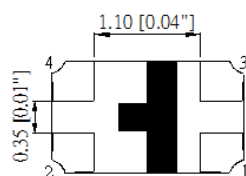
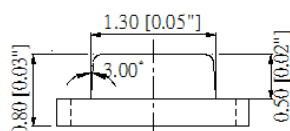
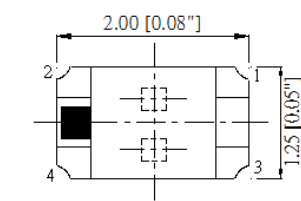
RoHS Compliant

Applications

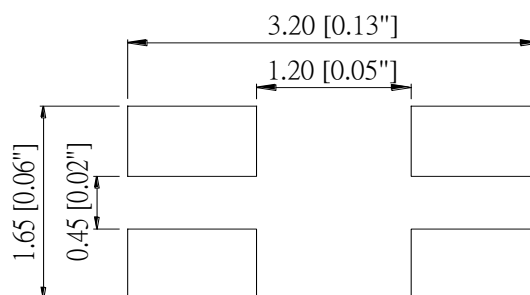
Ideal for back light and indicator

Various colors and lens types available

Package outlines



Recommend Pad Layout



Part No.	Emitted color	Dice	Lens color
HC-S2012CHMRWTF-F1	Red	AlGaInP	Yellow
	White	InGaN/GaN	

Notes:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.

Absolute maximum ratings (TA=25℃) (White)

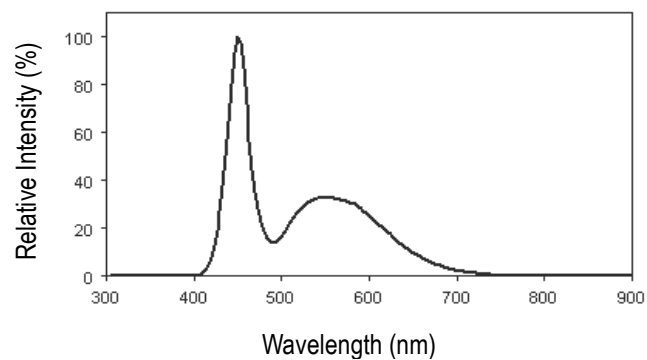
Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	111	mW
Operating temperature	Top	-40 ~+80	℃
Storage temperature	Tstg	-40 ~+85	℃
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

Electro-optical characteristics (TA=25℃) (White)

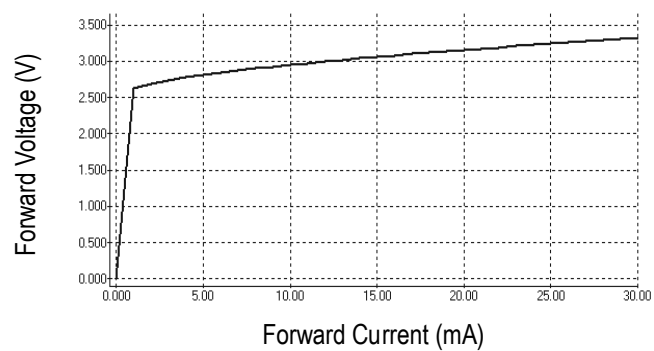
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
CIE Coordinates	If=5mA	X	--	0.2701	--	--
		Y	--	0.2672	--	
Forward voltage	If=5mA	Vf	2.5	--	2.9	V
Luminous intensity	If=5mA	Iv	110	150	250	mcd
Viewing angle at 50% Iv	If=10mA	2θ 1/2	--	140	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

Optical characteristic curves (White)

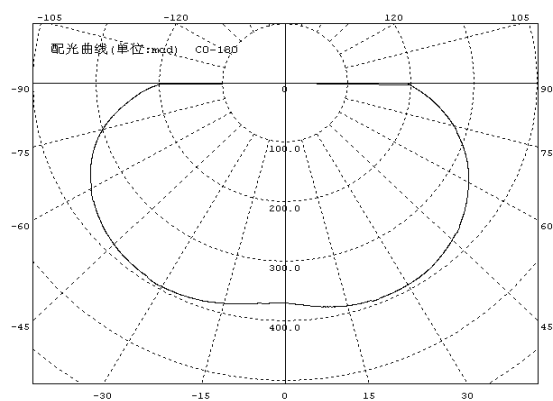
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics



Absolute maximum ratings (TA=25℃) (Red)

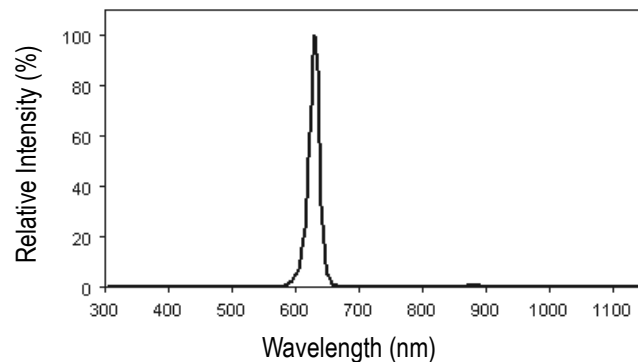
Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	72	mW
Operating temperature	Top	-40 ~+80	℃
Storage temperature	Tstg	-40 ~+85	℃
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

Electro-optical characteristics (TA=25℃) (Red)

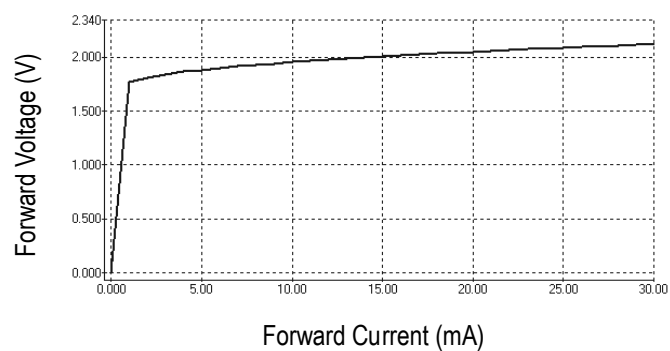
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=5mA	λ_p	--	630	--	nm
Spectral half bandwidth	If=5mA	$\Delta \lambda$	--	18	--	nm
Dominant wavelength	If=5mA	λ_d	617	--	626	nm
Forward voltage	If=5mA	Vf	1.7	--	2.3	V
Luminous intensity	If=5mA	Iv	30	45	80	mcd
Viewing angle at 50% Iv	If=10mA	2 θ 1/2	--	140	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μ A

Optical characteristic curves (Red)

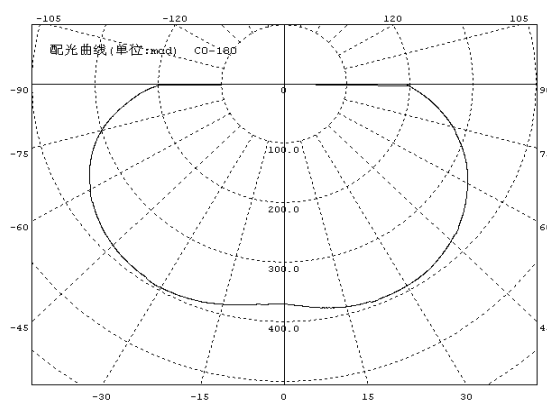
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage

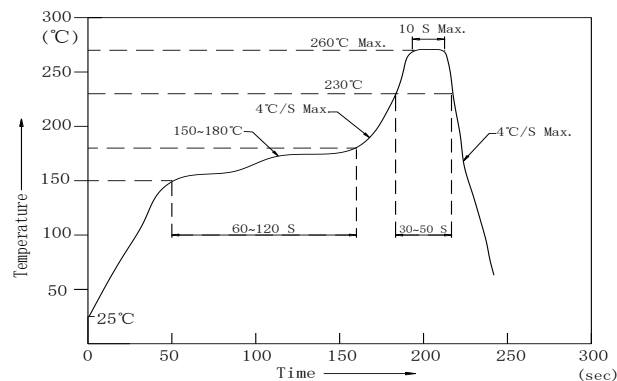


Directive Characteristics



Reflow Profile

■ Reflow Temp/Time



Notes:

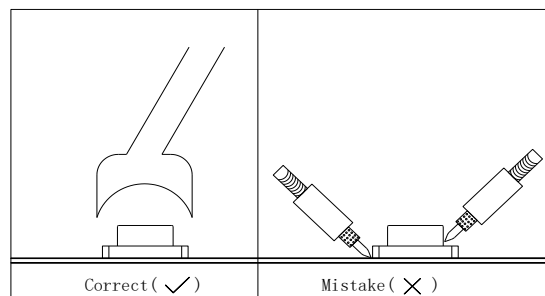
1. We recommend the reflow temperature 245°C(±5°C). the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 1 times or less.

■ Soldering iron

Basic spec is $\frac{6}{\lambda}$ 5sec when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

■ Rework

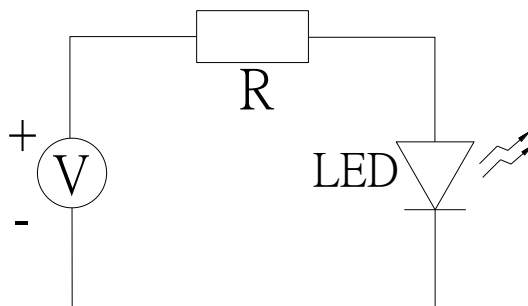
1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow solder etc.

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : $5^{\circ}\text{C}\sim 30^{\circ}\text{C}$ ($41^{\circ}\text{F}\sim 86^{\circ}\text{F}$)

2.2 Shelf life in sealed bag: 12 month at $<5^{\circ}\text{C}\sim 30^{\circ}\text{C}$ and $<30\%$ R.H. after

the package is Opened, the products should be used within a week or they should be keeping to stored at ≤ 20 R.H. with zip-lock sealed.

3. Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 $60\pm 3^{\circ}\text{C}$ x(12~24hrs) and $<5\%$ RH, taped reel type

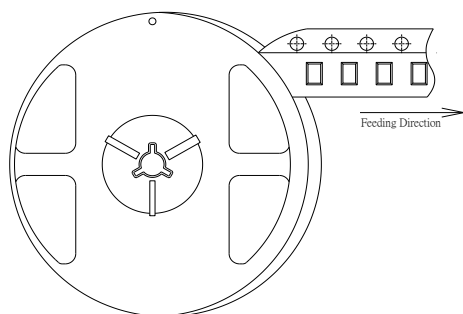
3.2 $100\pm 3^{\circ}\text{C}$ x(45min~1hr), bulk type

3.3 $130\pm 3^{\circ}\text{C}$ x(15~30min), bulk type

Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20℃ 30min ↑ ↓ 80℃ 30min	100 cycle	0/22
	Thermal Shock	-20℃ 15min ↑ ↓ 80℃ 15min	100 cycle	0/22
	High Humidity Heat Cycle	30℃ ⇄ 65℃ 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	Ta=80℃	1000 hrs	0/22
	Humidity Heat Storage	Ta=60℃ RH=90%	1000 hrs	0/22
	Low Temperature Storage	Ta=-30℃	1000 hrs	0/22
Operation Sequence	Life Test	Ta=25℃ IF=20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60℃ RH=90% IF=10mA	500 hrs	0/22
	Low Temperature Life Test	Ta=-20℃ IF=20mA	1000 hrs	0/22

- Feeding Direction



Technical drawing of the reel showing dimensions and labels:

- Top dimension: 13.30 [0.52"]
- Right dimension: 178.50 [7.03"]
- Bottom dimension: 9.40 [0.37"]
- Internal vertical dimension: 57.54 [2.27"]
- Label: "颜色标签" (Color Label) pointing to a small circle.
- Label: "RoHS" inside a circle.
- Label: "Lable" inside a rectangle.

Technical drawing of a mechanical part, showing front and top views with dimensions in inches and millimeters.

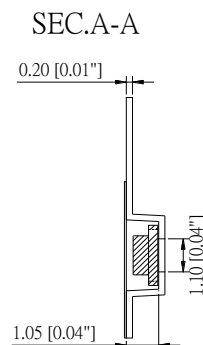
Front View Dimensions:

- Overall width: 8.00 [0.31"]
- Distance from left edge to center of first hole: 2.00 [0.08"]
- Distance between centers of adjacent holes: 4.00 [0.16"]
- Hole diameter: $\phi 1.55$ [$\phi 0.06$ "]
- Distance from right edge to center of last hole: 1.75 [0.07"]
- Distance from top edge to center of holes: 5.25 [0.21"]

Top View Dimensions:

- Distance from left edge to center of first hole: 4.00 [0.16"]

Section Line A-A: Indicated by arrows pointing to the right edge of the part.



Empty parts (Min.20pcs)

Loaded parts (LED:3000pcs)

Empty parts (Min.40pcs)

Feeding Direction

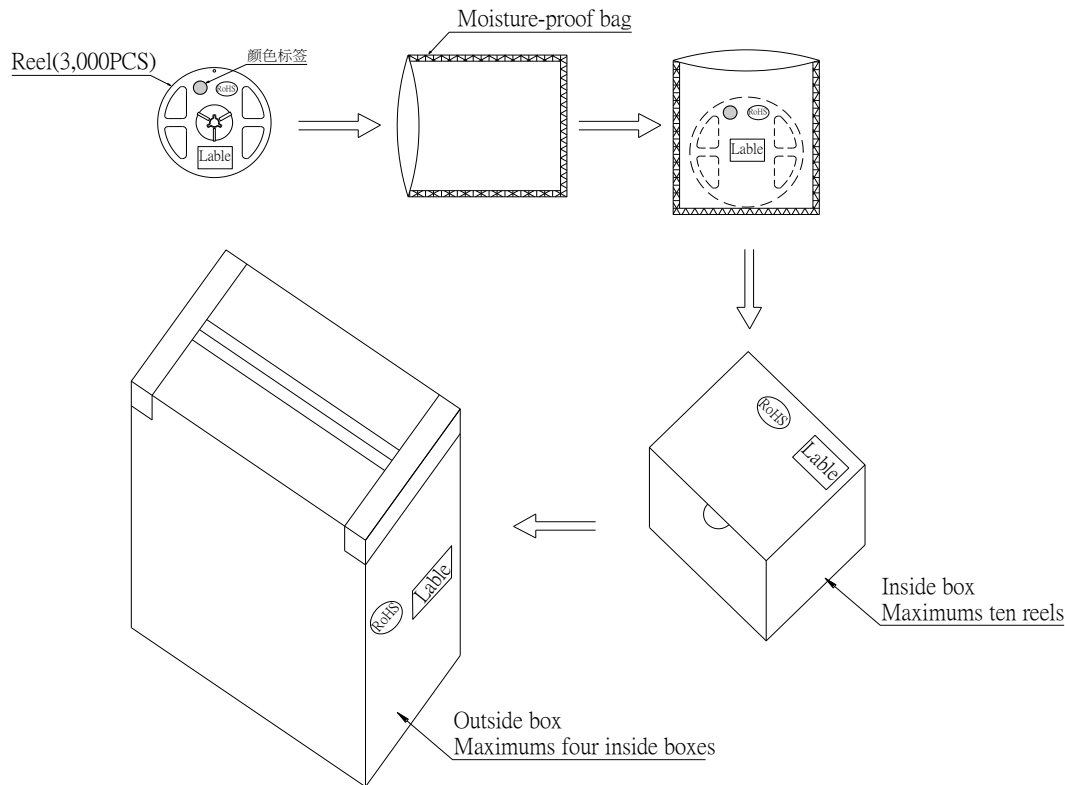
Conclusion parts (Min.80mm)

Introduction parts (Min.160mm)

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 3,000 pcs/Reel.

2012 Series SMD Chip LED Lamps Packaging Specifications

- Packaging specifications



Notes:

Reeled products (numbers of products are 3,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, ten moisture-proof bag of maximums (total maximum number of products are 30,000pcs) packed in an inside box (about size: 240x 220x 120mm) and four inside boxes of maximums are put in the outside box (about size: 460mm x 246mm x 250mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. and quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.

Forward Voltage Rank Combination (IF=5mA) (Red)

Rank	Min.	Max.	Unit
11	1.7	1.9	V
12	1.9	2.1	
13	2.1	2.3	

Luminous Intensity Rank Combination (IF=5mA) (Red)

Rank	Min.	Max.	Unit
E	30	42	mcd
F	42	65	
G	65	80	

Dominant wavelength Rank Combination (IF=5mA) (Red)

Rank	Min.	Max.	Unit
R0	617	620	nm
Ra	620	623	
Rb	623	626	

Forward Voltage Rank Combination (IF=5mA)(White)

Rank	Min.	Max.	Unit
21	2.5	2.7	V
22	2.7	2.9	

Luminous Intensity Rank Combination (IF=5mA)(White)

Rank	Min.	Max.	Unit
K	110	165	
L	165	250	

XY Chromaticity Coordinate(White)

序号	X1	Y1	X2	Y2	X3	Y3	X4	Y4
B1	0.2546	0.2371	0.2595	0.2492	0.2669	0.2462	0.262	0.2341
B2	0.2595	0.2492	0.2643	0.2612	0.2718	0.2582	0.2669	0.2462
B3	0.2643	0.2612	0.2692	0.2733	0.2766	0.2703	0.2718	0.2582
B4	0.2692	0.2733	0.2741	0.2853	0.2815	0.2823	0.2766	0.2703
B5	0.2741	0.2853	0.2789	0.2974	0.2864	0.2944	0.2815	0.2823
B1	0.2546	0.2371	0.2595	0.2492	0.2669	0.2462	0.262	0.2341

