

承認書

SPECIFICATION FOR APPROVAL

● 客戶名称	
● Customer	
● 客戶品號	
● Customer Part No.	
● 产品品號	HC-S1608BHMRWTP-F1
● Brightek Part No.	
● 产品規格描述	1608红白双色
● 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:

光宇集團 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

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版本/版次	修改日期	修改内容

Features

1.6mm x 0.8mm SMT LED, 0.6mm thickness

Low power consumption

Wide view angle

Package: 4000pcs/reel

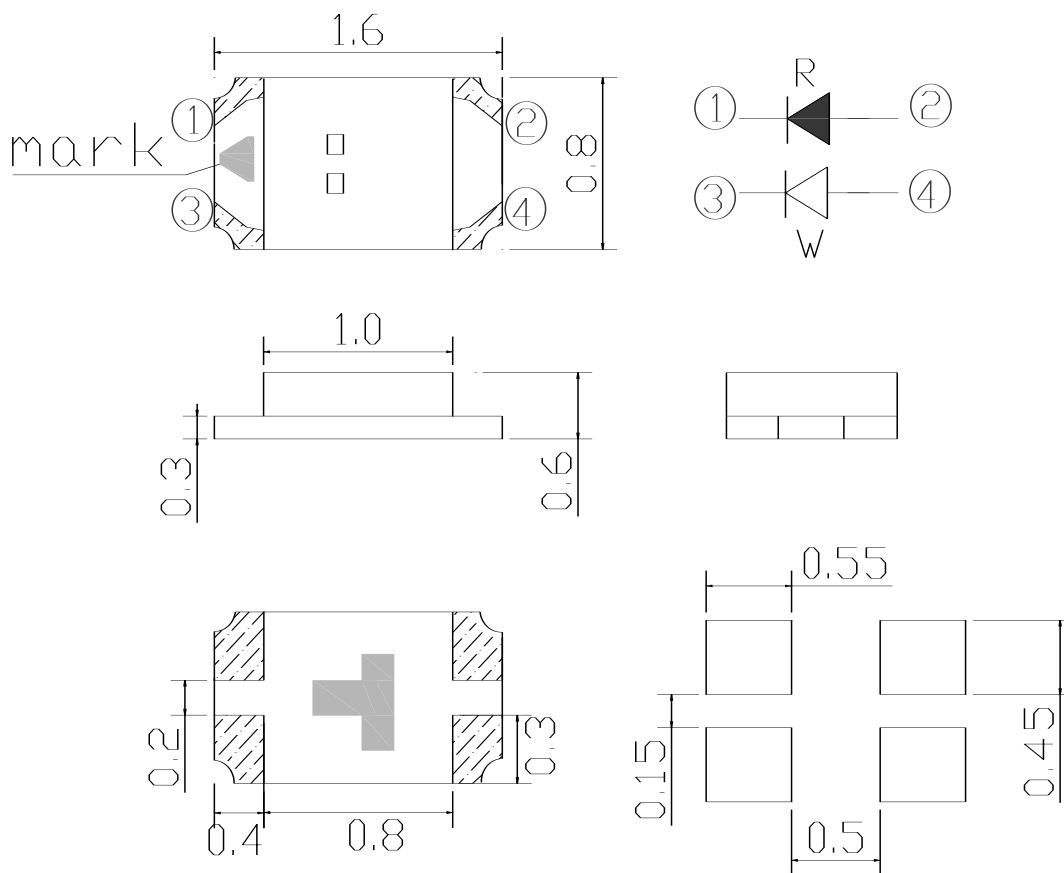
RoHS Compliant

Applications

Ideal for back light and indicator

Various colors and lens types available

Package outlines



Part No.	Emitted color	Dice	Lens color
HC-S1608BHMRWTP-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°C) (Red)

Parameter	Symbol	Value	Unit
Power dissipation	Pd	62	mW
Reverse voltage	Vr	5	V
Forward current	If	20	mA
Operating temperature	Top	-40 ~+80	°C
Storage temperature	Tstg	-40 ~+85	°C
Peak pulsing current (1/8 duty f=1kHz)	Ifp	100	mA

Electro-Optical Characteristics (TA=25°C) (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	1.8	--	2.4	V
Luminous intensity	If=5mA	Iv	25	40	80	mcd
Viewing angle at 50% Iv	If=10mA	2 θ 1/2	--	120	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μ A

Absolute Maximum Ratings (TA=25°C) (White)

Parameter	Symbol	Value	Unit
Power dissipation	Pd	72	mW
Reverse voltage	Vr	5	V
Forward current	If	20	mA
Operating temperature	Top	-40 ~+80	°C
Storage temperature	Tstg	-40 ~+85	°C
Peak pulsing current	Ifp	80	mA

Electro-Optical Characteristics (TA=25°C) (White)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
CIE Coordinates	If=5mA	X	--	0.2377	--	--
		Y	--	0.2090	--	
Forward voltage	If=5mA	Vf	2.6	--	3.2	V
Luminous intensity	If=5mA	Iv	140	--	300	mcd
Viewing angle at 50% Iv	If=10mA	2 θ 1/2	--	120	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

Optical Characteristic Curves

Fig1. Forward Current vs. Forward Voltage

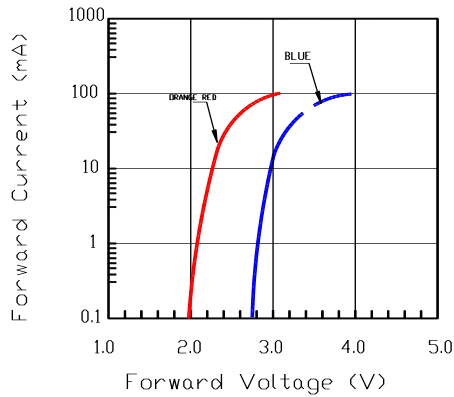


Fig2. Relative Intensity vs. Forward Current

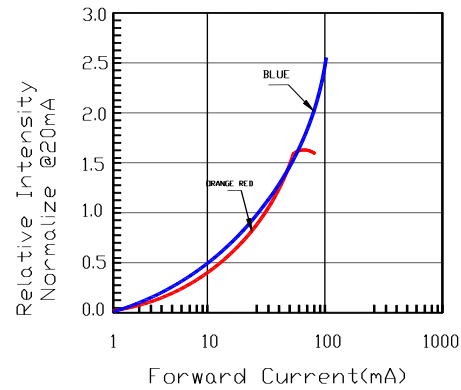


Fig3. Forward Current Derating Curve

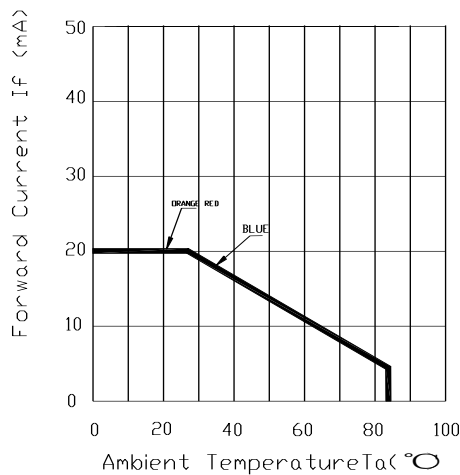
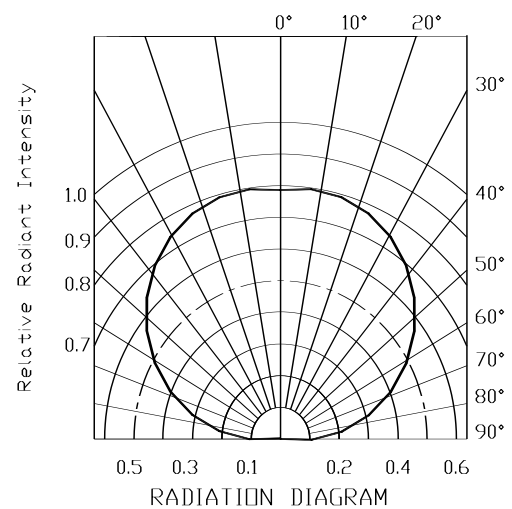
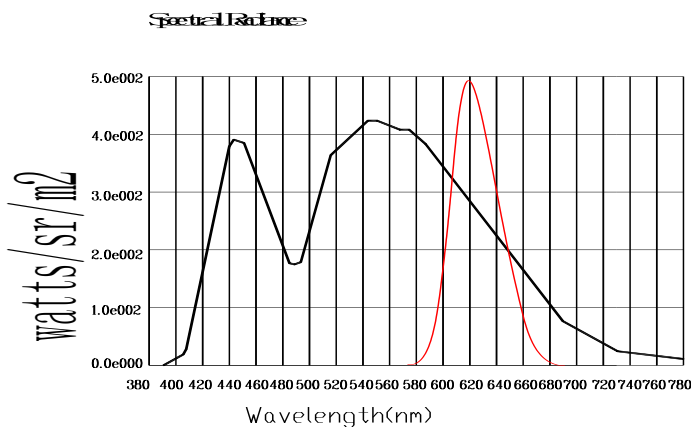
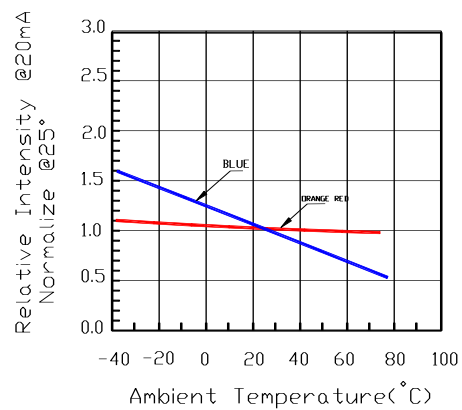
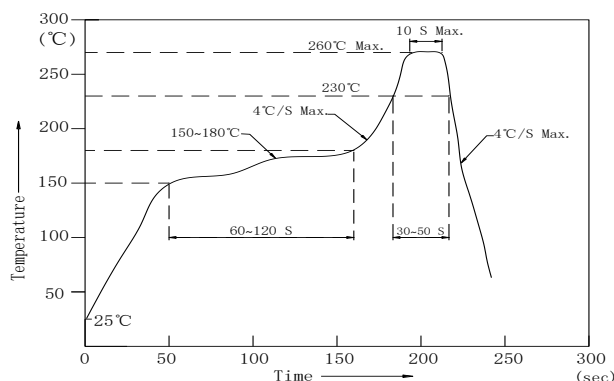


Fig4. Relative Intensity vs. Temperature



Reflow Profile

■ Reflow Temp/Time



Notes:

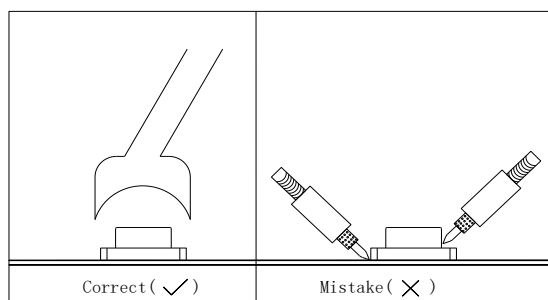
1. We recommend the reflow temperature 245°C(±5°C). the maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 1 times or less.

■ Soldering iron

Basic spec is $\leq 5\text{sec}$ when 320°C(±20°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 350°C.

■ Rework

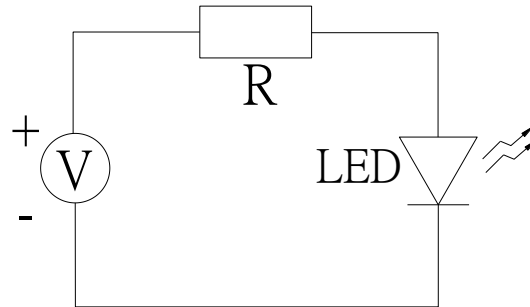
1. Customer must finish rework within 5 sec under 340°C.
2. The head of iron cannot touch copper foil
3. Twin-head type is preferred.



- 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

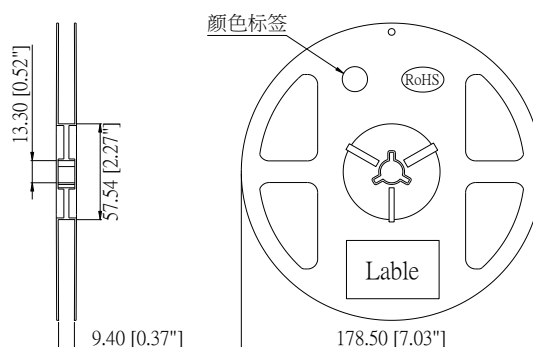
3.2 $100\pm 3^{\circ}\text{C}$ x(45min~1hr), bulk type

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	-40℃ 30min ↑ → (25℃/5min) ↓ 100℃ 30min	100 cycle	0/22
	Thermal Shock	-40℃ 15min ↑ ↓ 100℃ 15min	100 cycle	0/22
	High Humidity Heat Cycle	30℃ ⇔ 65℃ 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	Ta=100℃	1000 hrs	0/22
	Humidity Heat Storage	Ta=60℃ RH=95%	1000 hrs	0/22
	Low Temperature Storage	Ta=-40℃	1000 hrs	0/22
Operation Sequence	Life Test	Ta=25℃ IF=20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60℃ RH=95% IF=10mA	500 hrs	0/22
	Low Temperature Life Test	Ta=-20℃ IF=20mA	1000 hrs	0/22

- Feeding Direction



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

Front View Dimensions:

- Overall width: 8.00 [0.31"]
- Overall height: 5.25 [0.21"]
- Distance from left edge to first hole center: 2.00 [0.08"]
- Distance between hole centers: 4.00 [0.16"]
- Hole diameter: $\phi 1.55$ [$\phi 0.06$ "]
- Section line A-A is indicated.

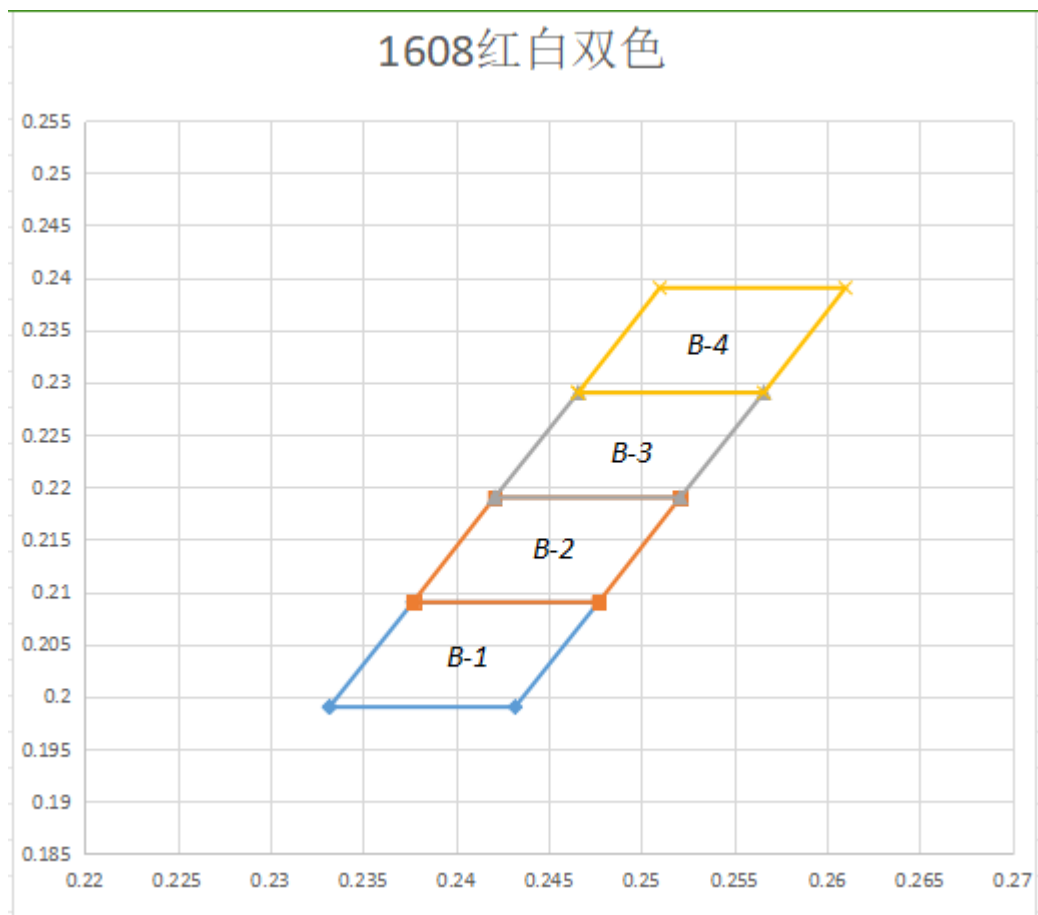
Side View Dimensions:

- Overall width: 0.85 [0.03"]
- Distance from top edge to hole center: 0.20 [0.01"]
- Hole diameter: $\phi 0.50$ [$\phi 0.02$ "]

Figure 1 illustrates the layout of the LED assembly line. The top section shows the main assembly area with three distinct zones: 'Empty parts (Min.25pcs)' on the left, 'Loaded parts (LED:4000pcs)' in the center, and 'Empty parts (Min.75pcs)' on the right. A 'Feeding Direction' arrow indicates the flow from left to right. The bottom section provides a detailed view of the conveyor belt, showing 'Conclusion parts (Min.100mm)' and 'Introduction parts (Min.300mm)'.

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. 4,000 pcs/Reel.

XY Chromaticity Coordinate



色区代码	C1:X1	C1:Y1	C1:X2	C1:Y2	C1:X3	C1:Y3	C1:X4	C1:Y4
B-1	0.2332	0.199	0.2377	0.209	0.2477	0.209	0.2432	0.199
B-2	0.2377	0.209	0.2421	0.219	0.2521	0.219	0.2477	0.209
B-3	0.2421	0.219	0.2466	0.229	0.2566	0.229	0.2521	0.219
B-4	0.2466	0.229	0.251	0.239	0.261	0.239	0.2566	0.229

- Packaging specifications



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