High Efficacy LED Series 1814 TBG-1814L-1208P5

特性 Features

- ●外观尺寸 Package Dimension：17.85mm×17.85mm×1.2mm
- ●发光角度 Viewing Angle：120°
- ●符合ROHS标准 ROHS Approved

描述 Description

同一方 1814 双色产品具有高光效，高显指，低功耗，发光角度广等一系列特性，这些特性使其成为照明应用的首选.

The TYF 1814 Double Color package has high efficacy, high Ra, low power consumption, wide viewing angle and acompact form factor. These features make the package an ideal LED for lighting applications.

应用 Applications

- 商用照明 Commercial lighting
- 家居照明 Home Furnishing lighting
- 智能照明 Intelligent lighting

目 录
Catalogue

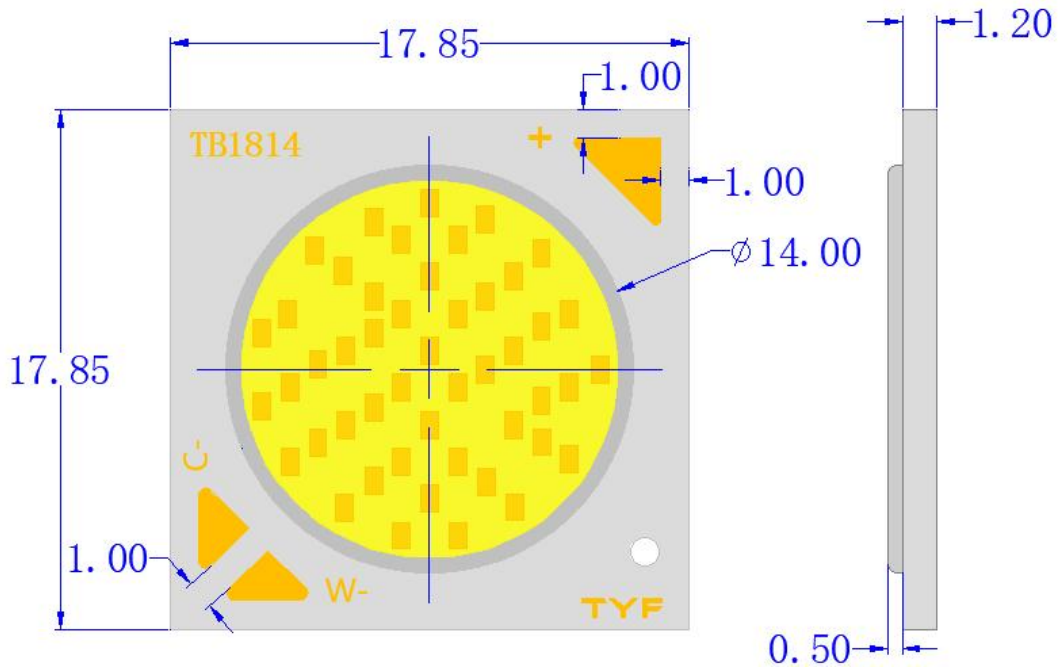
1、 产品编码 Product Number

1	2	3	-	4	5	6	7	8	-	9	10	11	12	13	14	-	15	16	17	18	19
T	B	G	-	1	8	1	4	L	-	1	2	0	8	P	5	-	M	F	Q	A	A

编码序号 Code No	含义 PKG Information
1 -3	产品系列 Range of products
4-8	产品外形 Designates product type
9-12	串并方案 Product specifications Size
13-14	亮度等级 Class of brightness
15-19	颜色代码 Color code

2、外形尺寸 Dimensions

单位(Units):毫米(mm)



备注 Postscript:

所有尺寸单位为 mm ， 如无特殊说明误差范围为±0.15mm

All dimensions area in mm tolerance is ±0.15mm unless otherwise noted.

3、极限参数 Absolute Maximum Ratings

项目 Item	符号 Symbol	数值 Value	单位 Unit
极限功率 Limiting power	P	30W+30W	W
正向电流 Forward Current	IF	≦820mA	mA
工作温度 Operating Temperature	Topr	-40°C To +105°C	°C
结点温度 Junction Temperature	Tj	125°C	°C
储存温度 Storage Temperature	Tstg	-40°C To +105°C	°C
静电击穿电压 ESD Sensitivity	ESD	2,000V HBM	V
反向电压 Reverse Voltage	VR	Reverse testing is not allowed	/
反向电流 Reverse Current	IR	VR=5V 1uA	uA
焊接温度 Soldering Temperature	Tsld	350°C/3-5sec.	℃/S
湿度敏感级别 Moisture Sensitivity Rating	MSR	MSL3	℃/RH/H

补充说明 Additional Remarks

• 极限功率和正向电流 是指模块温度通过使用合适的散热体下的最大设置数值；
Max power and positive current mean the maximum setting value of the bottom temperature of led light source by using the appropriate heat sink.
• 最初连接错误的反向电压，超出将可能损坏模组；
Connection error and off-limits voltage may damage LED chip.

4、光电特性 Electrical-Optical characteristics（Tj=25℃）

表 1: 在 Tj=25℃时测试的光电参数

Product 产品系列	CRI 显色	CCT 色温(K)	Luminous Flux 光通量(LM) 640mA	Efficacy 光 效(Lm/W) 640mA	Voltage 电压（V） VF 640mA	Part Number 产品编码
TBG-1814L-1208P5	97	2700 6000	2088-2320 2552-2784	90-100 110-120	34-38V	TBG-1814L-1208P5-MFQAA

说明：

表1备注 Table 1 note：

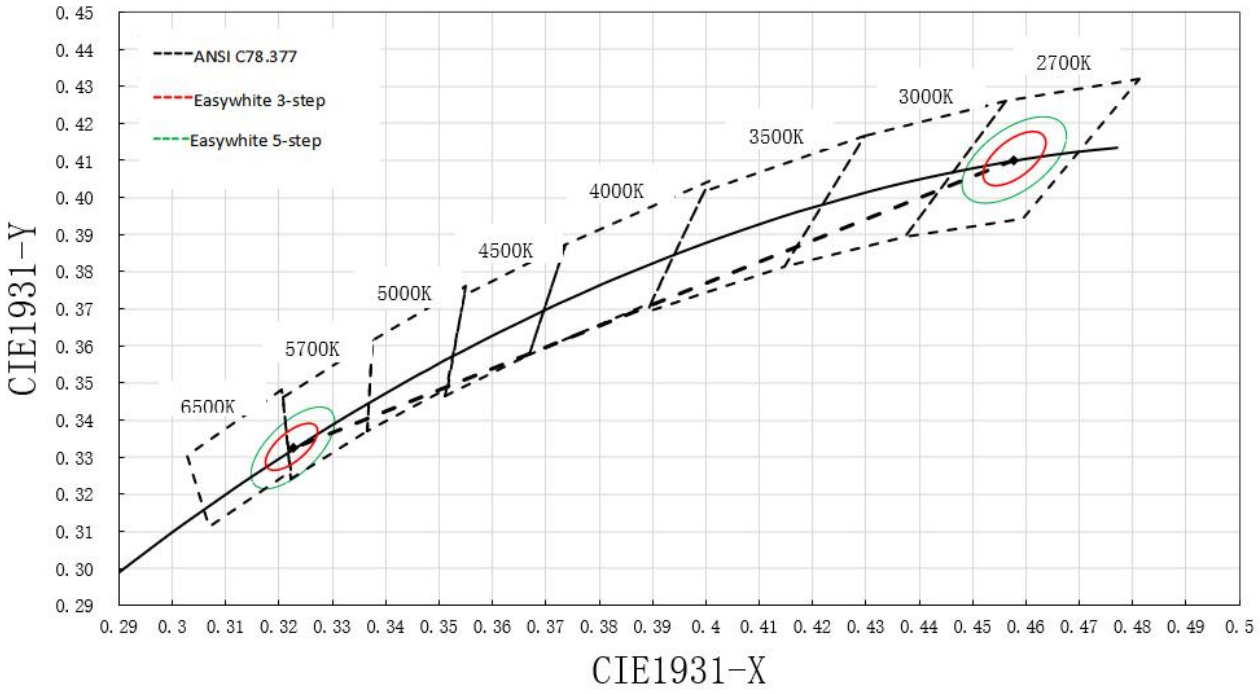
• 测试环境温度 25℃,若使用不同电流或不同的环境温度测试，会引起色温及电压的变化；

Testing environment temperature25℃,and CCT and voltage will changed if tested in different current and environment temperature.

• 不同标准测试仪正常测试允许公差：电压±0.1V ， 流明±5% ,显指±2,色坐标±0.005；

Tolerance among different testing machine: Voltage:±0.1V, Lumen±5%, CRI±2, Color coordinate ±0.005.

5、色区参考图 The reference map color area



CIE(X,Y)坐标 CIE coordinates (X, Y)

Nominal CCT	Center Point		MAJOR AXIS (a , b)			Ellipse Rotation
	X	Y	2-Step	3-Step	5-Step	
2700K	0.4578	0.4101	(0.0054, 0.0028)	(0.0081, 0.0042)	(0.0135, 0.007)	53.70
6000K	0.3226	0.3325	(0.00446, 0.0019)	(0.00669, 0.00285)	(0.0112, 0.0048)	59.62

备注 Postscript:

色区范围为美标色区，色区范围可控制在自定义色区所规范的 SDCM≤3。

The color gamut range is the ANSI custom color zone, which can be controlled in the SDCM 3 specified by the custom color area.

6、典型特性曲线 Typical Characteristic Curves

（1）.典型光谱分布

Typical spectral distribution

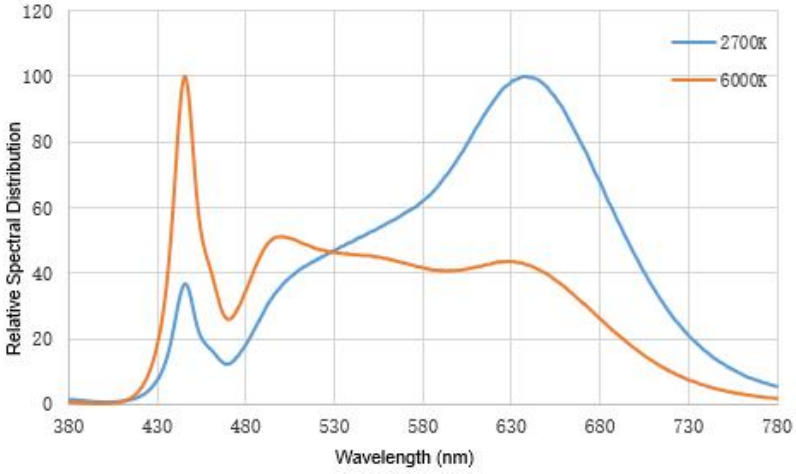
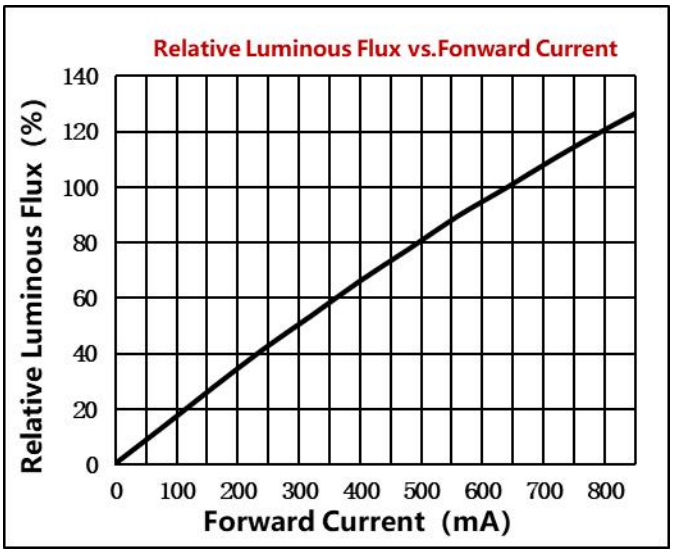
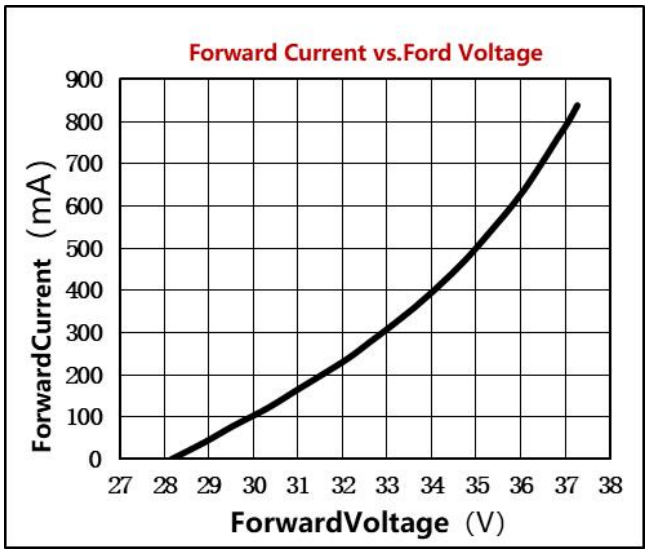
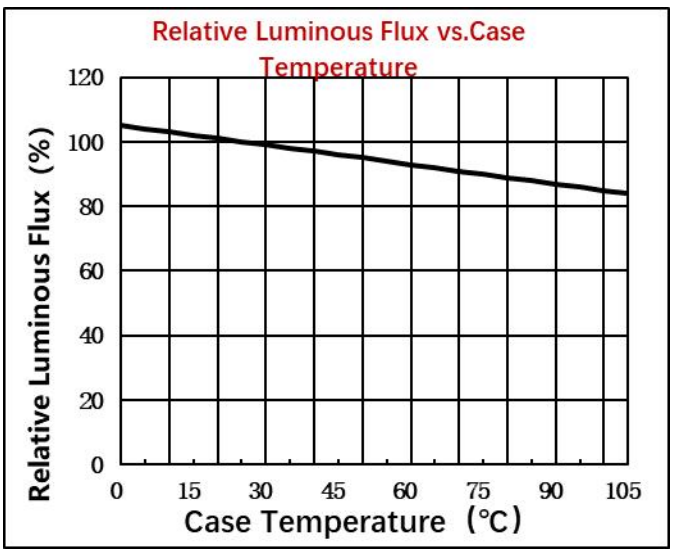


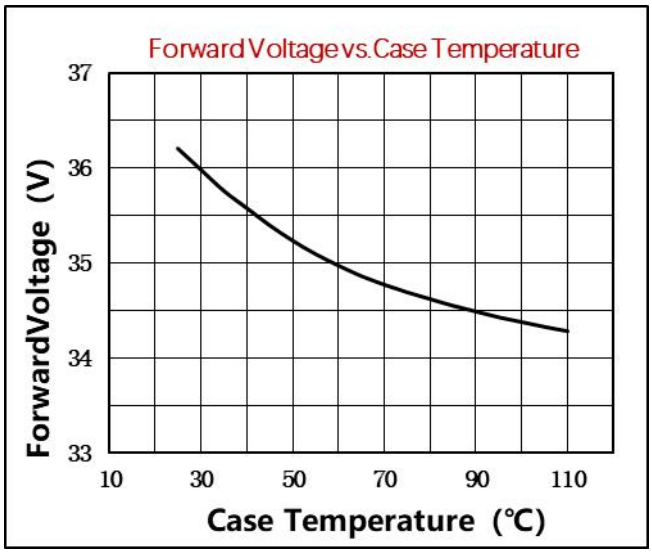
Figure 1a. Typical normalized power vs. wavelength for at test current,RA97 Tj=25℃.

Light Output Characteristics

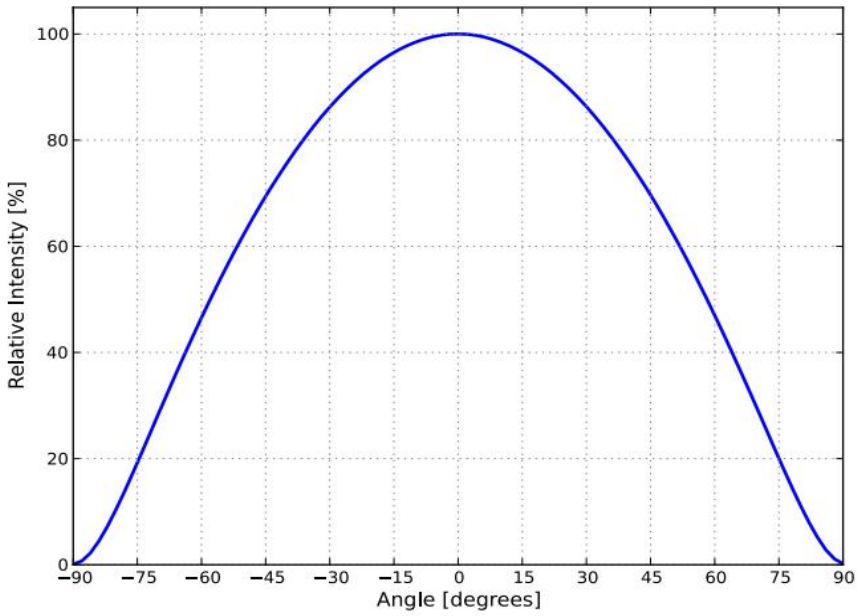




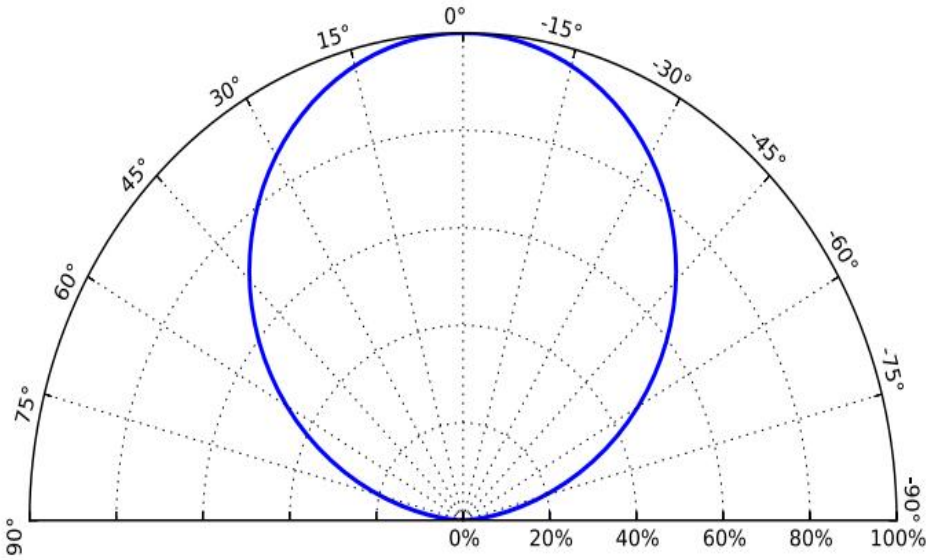




Radiation Pattern Characteristics



Typical radiation pattern for T at test current, Tj=25℃.



Typical polar radiation pattern forat test current, Tj=25℃

7、可靠性试验 Reliability Test Items And Conditions

序号 No.	试验项目 Test Item	参考标准 reference standard	试验条件 Test condition		样品数量 Sample Quantity	失效数量 Failure Quantity
1	高低温冲击 Thermal shock	JESD22-A104E	(-40℃,15min)---(+120℃,15min), ↑↓10 mins,200Cycle		22pcs	0
2	高温存放 HighTemperature Storage	JESD22-A103D	+100℃, 1000H		22pcs	0
3	低温存放 Low Temperature Storage	JESD22-A119	-40℃, 1000H		22pcs	0
4	高温高湿老化 High Temperature,High Humidity,Aging Test	JESD22-A101C	T=+85℃,RH=85%	IF=640mA 1000H	22pcs	0
5	高温使用寿命 High-temperature operation	IES LM80-2015	T=+105℃	IF=640mA 1000H	22pcs	0
6	低温使用寿命 Low temperature operation	JESD22-A108D	T=-40℃	IF=640mA 1000H	22pcs	0
7	回流焊湿度敏感实验 Moisture/Reflow Sensitivity Test	J-STD-020E	Precondition: 60℃.60%RH.168H Tsld=260℃.10sec. 3 Reflows		22pcs	0

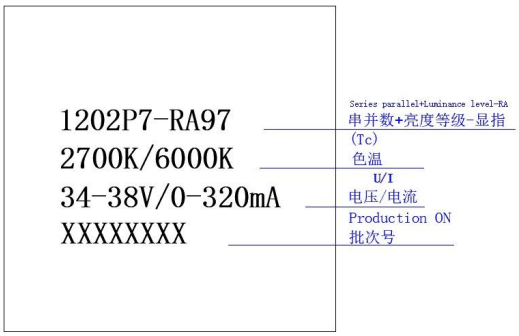
失效判定标准 Criteria For Judging Damage

项目 Test Items	测试条件 Test Condition	判定标准 Criteria For Judgement	
		Min. 最小	Max. 最大
正向电压 Forward Voltage	IF=640mA	/	U.S.L*1.1
反向电流 Reverse current	VR=5V	/	U.S.L*2.0
光通量 Luminous Flux	IF=640mA	L.S.L*0.7	/

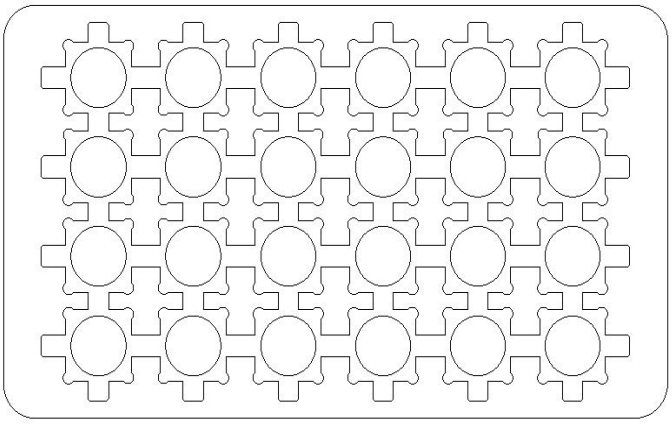
8、包装 Packaging

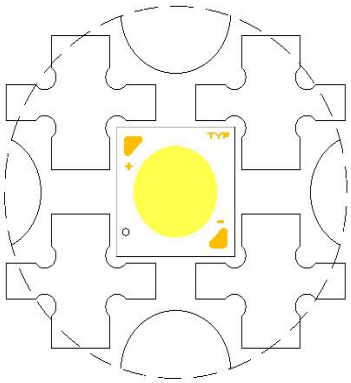
标签 label

背面镭射图示（举例） Laser image on the back（give an example）



托盘包装图（举例） Tray packing drawing（give an example）





备注 Postscript:

- 每个吸塑盘可以包装 1-45pcs 不等 COB/Each blister disk can pack between 1 to 45 pcs COB
- 每个吸塑盘上面会贴一张标签/A label will be attached to each blister disk
- 吸塑盘最终会静电袋真空包装/Blister disk will be vacuum packed with electrostatic bag finally

9、使用注意事项 Caution

1.储藏条件 Storage conditions

打开前:温度为 5~30℃，相对湿度低于 60%。（打开后模组应在 24H 之内使用完毕），如未用完之产品，请进行除湿并抽真空后密封保存。湿度卡变色或包装袋漏气等现象必须除湿，除湿条件：60° C±5° C，24H。产品密封保存有效使用期为 3 个月；

Before open: temperature is 5 ~ 30 ℃, relative humidity below 60%.(the module should be used within 24H when opens), if not, please dehumidification and vacuum sealing .Humidity card changes color or bags leak must dehumidifier, dehumidifier conditions: 60° C±5° C, 24 h.The effective use period of product seal is 3 months.

2.取放条件 Attention

取放及组装过程禁止挤压发光区胶体表面，防止压死灯现象；

It is prohibited to squeeze the colloid surface of the luminous area during the process of taking, placing and assembling to prevent the lamp from being crushed

3. 静电防护 Electrostatic protection

LED 属于 I 级静电敏感器件，接触、使用过程做好防静电保护；

LED belong to grade I electrostatic sensitive device, please do ESD protection when touch and use

4. 清洁条件 Clean condition

LED 胶体表面脏污，可用酒精清洗，不可用丙酮等腐蚀性的清洗溶剂清洗；

If LED colloid surface dirt, use alcohol to clean.Can't use acetone or corrosive to clean.

5. 焊接条件 Welding conditions

对于手工焊接，请使用无铅焊接，焊接应该通过焊接钻头被植入且温度低于 350℃，并在 3.5s 之内被完成。在进行焊接时，不应对树脂部件施加外力。下一次焊接工艺应在产品恢复到环境温度后进行.

For manual welding, please use lead-free welding. The welding should be implanted through the welding drill and the temperature should be lower than 350 ℃, and completed within 3.5s. During welding, no external force shall be applied to resin parts. The next welding process shall be conducted after the product recovers to the ambient temperature.

6. 电路及散热设计 Design of circuit and heat dissipation

6.1 产品正常工作温度：TS 点（负极焊盘）小于 85℃，如果超出我司给定要求，客户必须做产品可靠性评估，风险由客户承担；

Normal operating temperature: TS point (negative pad) is less THn 85 ℃, if exceeded, customer needs to make reliability assessment, customer takes the risk.

6.2 胶面温度：暖白 LED <130℃;自然白 LED <115℃;正白 LED <105℃

Glue surface temperature: warm white LED<130 ℃; Natural white LED<115 ℃; Normal white LED<105 ℃

7. 使用环境要求 Environmental requirements

此产品设计不针对下列任何条件，如在下列任何条件下使用产品，请确定其正常性能和可靠性；
如：潮湿，有露水凝霜，盐水空气，腐蚀性气体的地方（CL,H2S,NH3,SO2,NOX,等）；太阳直晒下，户外暴露，多灰尘的地方。水中，油，医用液体和有机溶剂等；
This product can not use under below situations, if use the product in any of the below conditions,please make sure the performance and reliability;Such as: wet , frost, salt air, corrosive gases (C1, H2S, where NH3, SO2, NOX); Exposure under the sun, exposure outdoor, dusty. Water, oil,liquid medical and organic solvent.

8.使用兼容性 Using Compatibility

8.1 灯具中气体的化学成分以及光源周围的环境对灯具的寿命至关重要，特别是当您选择在灯具设计中使用化学成分时尤为重要。考虑使用任何材料之前，务必先咨询产品供应商或 LED 制造商。使用某种材料前获取的信息越多，灯具寿命期内的性能越高；
The chemical composition of gas in lamps and surrounding environment of light source are essential to the life of the lamps, especially when you choose to use chemical composition, it is particularly important in lighting design. Before considering the use of any material, be sure to consult the product supplier or LED manufacturer. The more information obtained before using some material, the higher the performance of the lamp.

8.2 产品色差问题 Color difference matters needing attention
不同 BIN 的 LED 光电参数有差异，使用前，须仔细评估；
The different Bin led has different photoelectric data,before use, please assess carefully。