



深圳东裕光大电子有限公司
广州市东裕光电科技有限公司

产品规格书 SPECIFICATION

客户名称 CUSTOMER	
产品名称 PRODUCTION	贴片 SMD
产品型号 MODEL	DYWH-S353522-WD-FC-T700-1T
版本号 VERSION NO	A1.0

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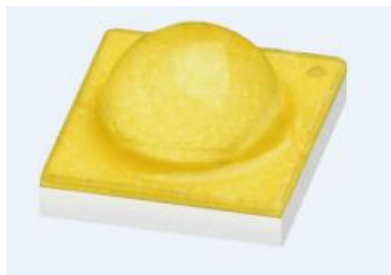


修订记录

日期	Rev.No.	修订内容	签名
2023.02.04	01	首次发行	陈少龙



DYWH-S353522-WD-FC-T700-1T



产品描述 Descriptions

- 本产品主要作为信号指示及照明的电子元件广泛应用于各类使用表面贴装结构的电子产品中。本产品主要作为工业白光固化和一般的白光应用。

(This product is generally used as indicator and luminary for electronic equipment. And it This product is mainly used as industrial White curing and general White applications.)

产品特性 Features

- 发光强度高，功耗低 (High Luminous Intensity ,Low Power Dissipation,)
- 可靠性好，使用寿命长 (Good Reliability and Long Life)
- 无紫外线 (No UV)
- 倒装芯片工艺 (Flip Chip Technology)
- 无铅 (Pb free)
- 符合 RoHS 要求 (This product itself will remain within RoHS compliant version)

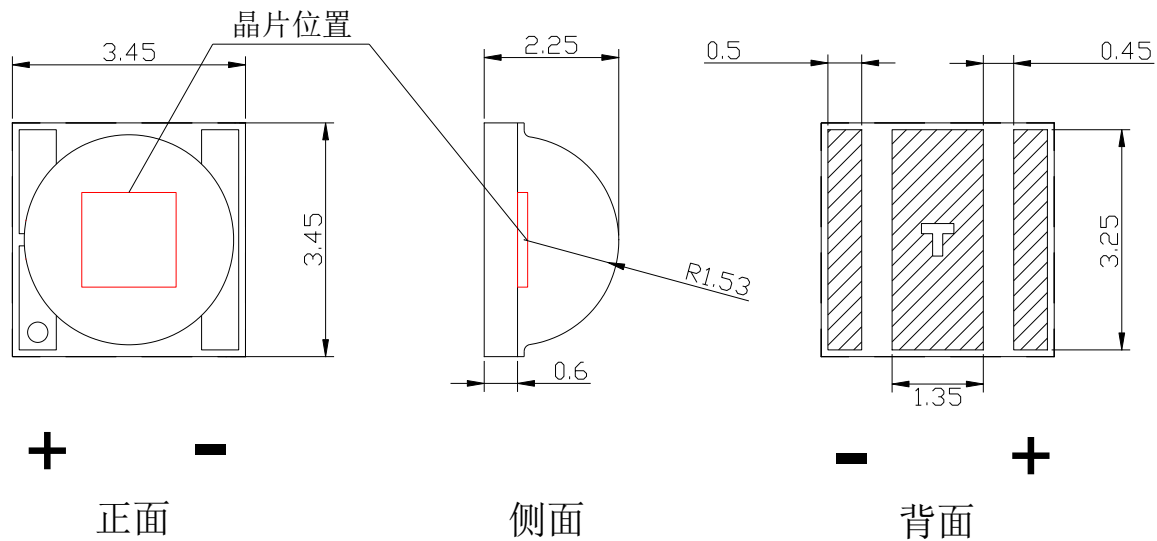
产品应用 Applications

- 便捷式照明 (Portable lightings /(flash lightings, bicycle).)
- 通用照明 (General lighting)
- 路灯 (Street light)
- 射灯 (Spot lighting)
- 其他照明 (Other lighting)

包装方式 Packing Quantity Specification

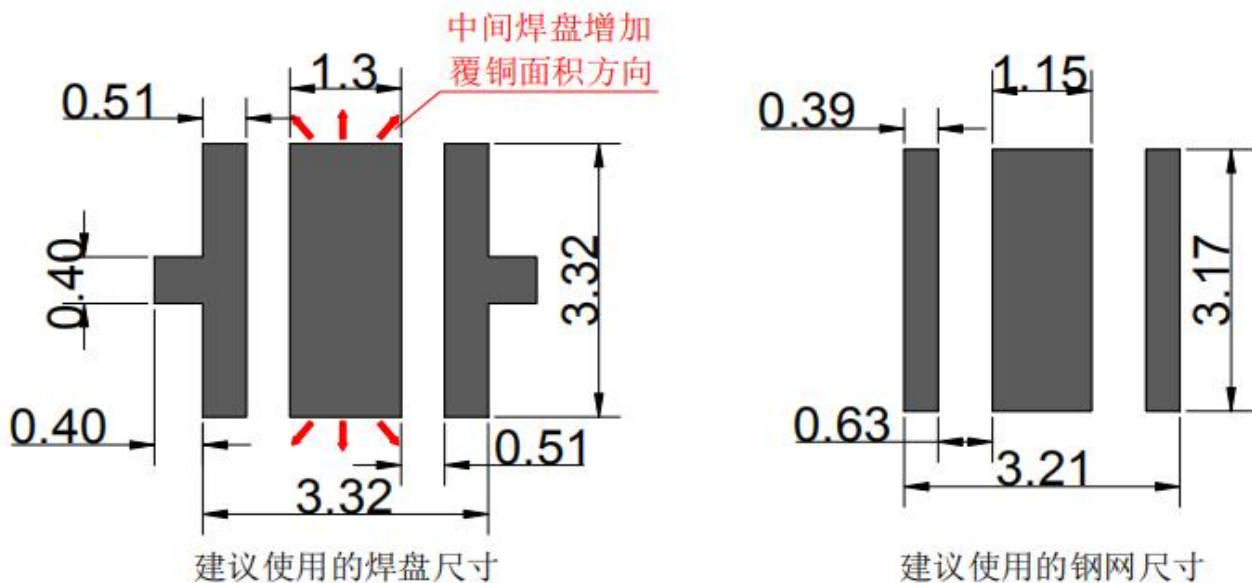
- 编带 1000 个/卷 (1000PCS/rolls)

一、外形图及建议焊盘尺寸 Package Profile & Soldering PAD Suggested



注：所有尺寸均为毫米，除非另有说明，公差为 ± 0.15 。
Notes: All dimensions are in mm, tolerance is ± 0.15 unless otherwise noted.

焊盘及钢网尺寸 Welded plate and steel mesh Dimensions



注：在不影响电路配置时，建议增加中间焊盘覆铜区域，或中间焊盘和负极焊盘连接，能提高产品散热性能。
Notes: When the circuit configuration is not affected, suggested the increase in the middle of the copper area, or the connection between the middle and the pad and the negative electrode can improve the cooling performance of the product.

※备注：承认书之编号和型号可用于查询，客户如有需要，请提供相应的编号和型号。

Remark: P/N & Model in samples approval sheet can be used to inquire, please provide corresponding P/N & model if customer need.

二、光电参数 Electro-Optical Characteristics:

(环境温度 Ambient temperature: 25°C, 环境湿度 Humidity: RH60%)

DY-S353522-WD-FC-T700-1T (IF=350mA)							IF=700mA		
Main push	Center Tc (K)	Tc (K)	Ra	Min (lm)	Typ (lm)	Max (lm)	Min (lm)	Typ (lm)	Max (lm)
	2200	2000-2400	70(min)	130	140	160	255	265	285
	2725	2580-2870	70(min)	140	150	170	255	265	285
★	3045	2870-3220	70(min)	140	150	170	265	285	305
	3465	3220-3710	70(min)	145	155	175	265	285	305
	3710	3465-3985	70(min)	145	155	175	265	285	305
★	3985	3710-4260	70(min)	145	155	175	265	285	305
	4503	4260-4745	70(min)	150	160	180	270	290	320
	5028	4745-5310	70(min)	150	160	180	270	290	320
★	5665	5310-6020	70(min)	155	165	185	275	295	325
	6020	5665-6530	70(min)	155	165	185	275	295	325
	6530	6020-7040	70(min)	155	165	185	275	295	325
	7040	6530-8210	70(min)	150	160	175	265	285	305
	10000	8000-12000	70(min)	145	155	175	265	285	305

Notes注:

*1.the products after this specification refer to the parameters prevail, before the release of specification without refer to the above parameters.

此规格书发布日后生产的产品以上述参数为准, 发布前生产的库存品不参考上述参数。

2.Tolerance of measurement of forward voltage $\pm 3\%$ 、Color-rendering index ± 2 、luminous flux $\pm 5\%$

不同标准源测试存在仪器公差: 正向电压公差为 $\pm 3\%$ 、显指公差为 ± 2 、光通量公差为 $\pm 5\%$ 。

3.The CCT at IF=700mA value will be raised 3%.

IF=700mA时色温会上升约3%。

4. With “★” for the product the main push color segment.

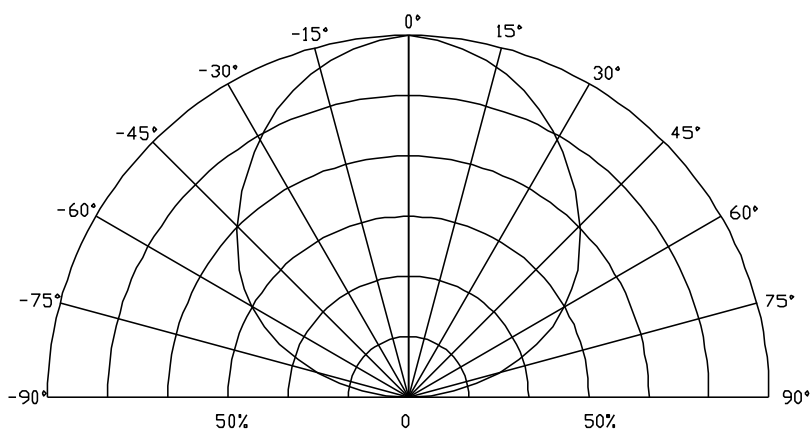
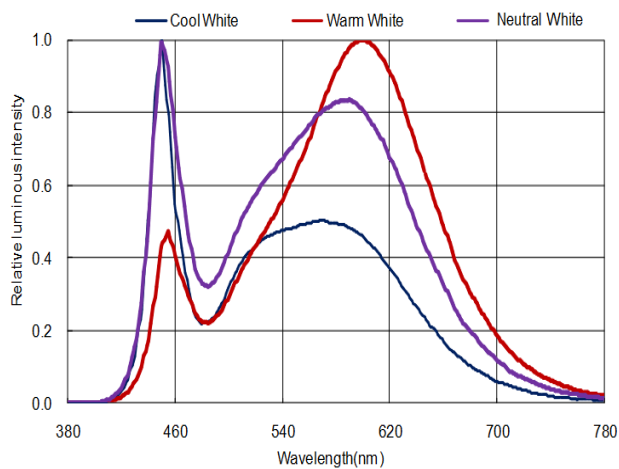
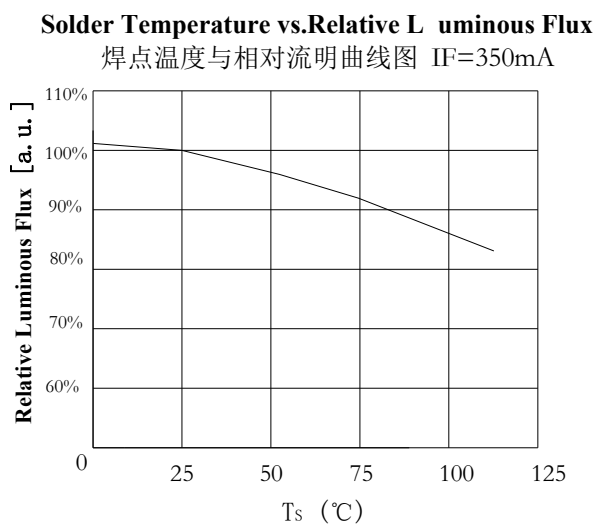
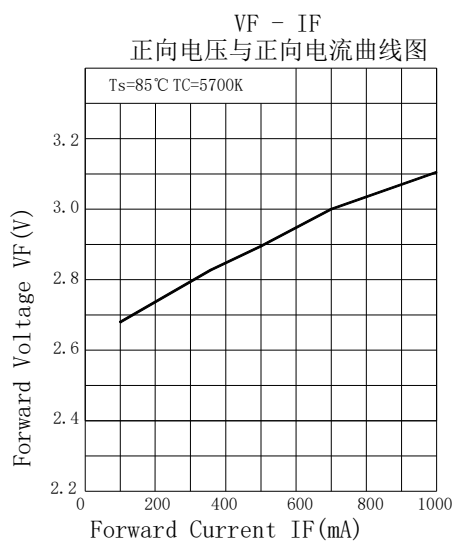
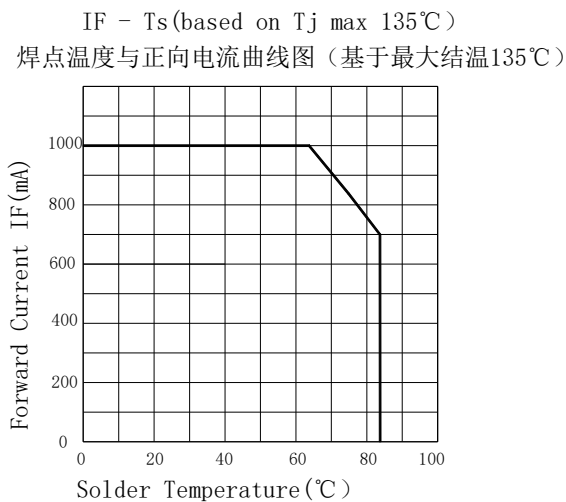
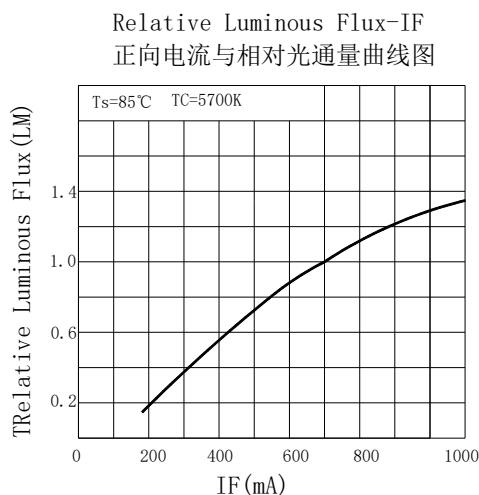
带 “★” 为产品主推色温段。

Optical Electrical / Thermal Characteristics at Ta=25°C

在Ta=25°C 时典型的电学/热学特性

IF (mA)	VF (V)			R (j-s) (°C/W)	Po (W)
	min	typ	max		
350	2.6	2.85	3.2	4.3	1.01
700	2.8	3.15	3.4	5	2.2

四、典型光电特性曲线图 Typical photoelectricity characteristic curve chart:



五、极限参数 Absolute Maximum Rating:

(环境温度 Ambient temperature: 25°C, 环境湿度 Humidity: RH60%)

项目 Item	符号 Symbol	数值 Value	单位 Unit	备注 Remark
正向电流 Forward Current	IF	1000	mA	---
反向耐压 Reverse Voltage	VR	not designed for reverse bias 不允许反向工作		---
耗散功率 Power Dissipation	Pd	3	W	---
工作环境温度 Operation temperature	Tamb	-35 至+100	°C	---
贮藏温度 Storage temperature	Tstg	-40 至+100	°C	---
结温 Junction Temperature	Tj	145	°C	
发光角度 View Angle(FWHM)-White	--	120~140	Degrees	
抗静电能力 Antistatic ability	ESD	Class 1		
焊接温度 Soldering temperature	Tsol	260	°C	回流焊 Reflow soldering : 260 °C for 3sec.

注(Note):

1.所有高功率的发光 LED 产品安装在铝金属为核心印刷电路板,可直接点亮,但我们不建议在没有一个适当的散热设备时,照明高功率 LED 点亮超过 5 秒, 当产品为 700mA 使用, TS 温度(铜柱底部)控制在 75°C以下.当产品为 350mA 使用, TS 温度(铜柱底部)控制在 85°C以下

(All high power emitter LED products mounted on aluminum metal-core printed circuit board, can be lighted directly, but we do not recommend lighting the high power products for more than 5 seconds without a appropriate heat dissipation equipment. When using at 700mA, the temperature of copper pad should be controlled below 75°C , When using at 350mA, the temperature of copper pad should be controlled below 85°C)

2. 波峰焊、浸锡焊接不适合这个产品.

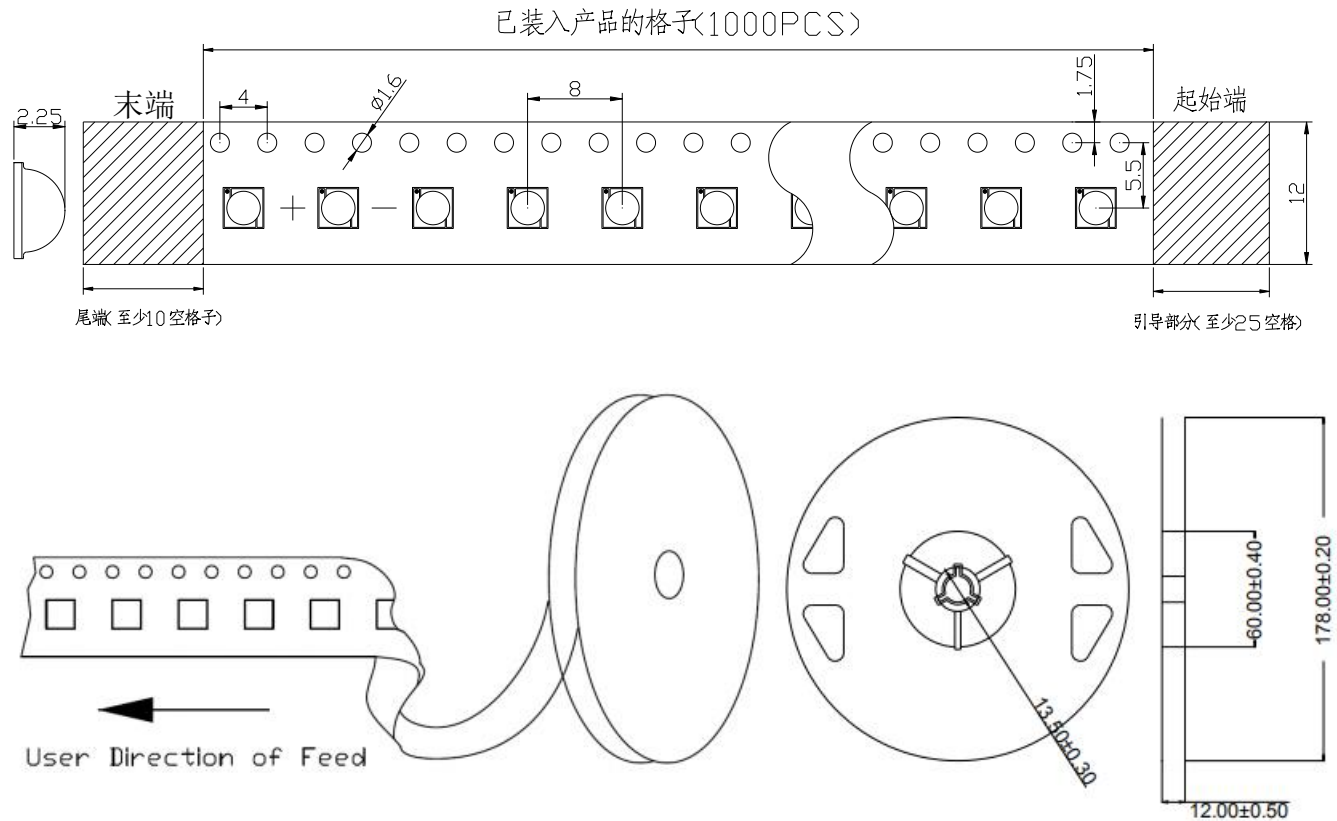
(wave peak and soak-stannum soldering etc.is not suitable for this products)

3.回流焊不能超过两次,回流焊最高温度建议 260°C, 当温度超过 260°C极大可能引起 LED 产品失效。

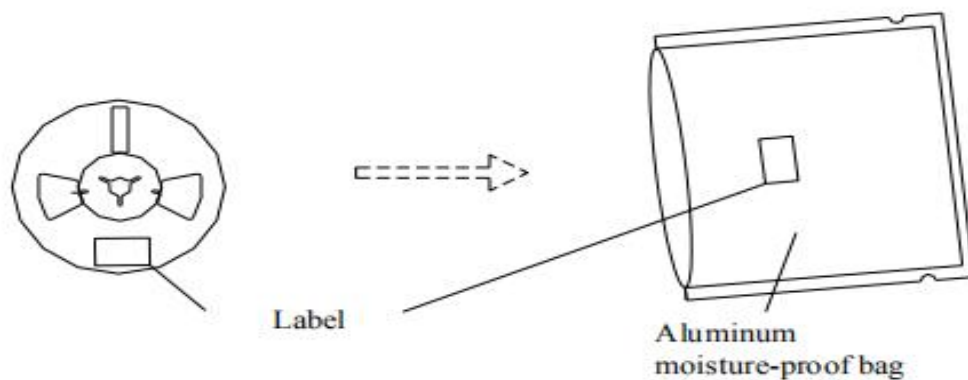
(Reflow soldering should not be done more than two times.The reflow temperature we recommend is 260°C,When the temperature exceeds 260 °C, the product failure of LED can be caused)

六、包装载带 Package carrier

卷轴包装: 1000pcs/卷



包装方法 Package Method (unit:mm)



注: 所有尺寸均为毫米, 除非另有说明, 公差为 ± 0.1 。
Notes: All dimensions are in mm, tolerance is ± 0.1 unless otherwise noted.

七、回流焊说明 Reflow soldering instructions

(1)建议使用八温区回流焊机.

recommend to use a convection type reflow machine with 8 zones

(2)建议使用熔点为 230°C-240°C 的无铅锡膏

recommend to use Lead-Free Paste with a melting point between 230°C-240°C.

(3)总的回流焊时间不要超过 400s

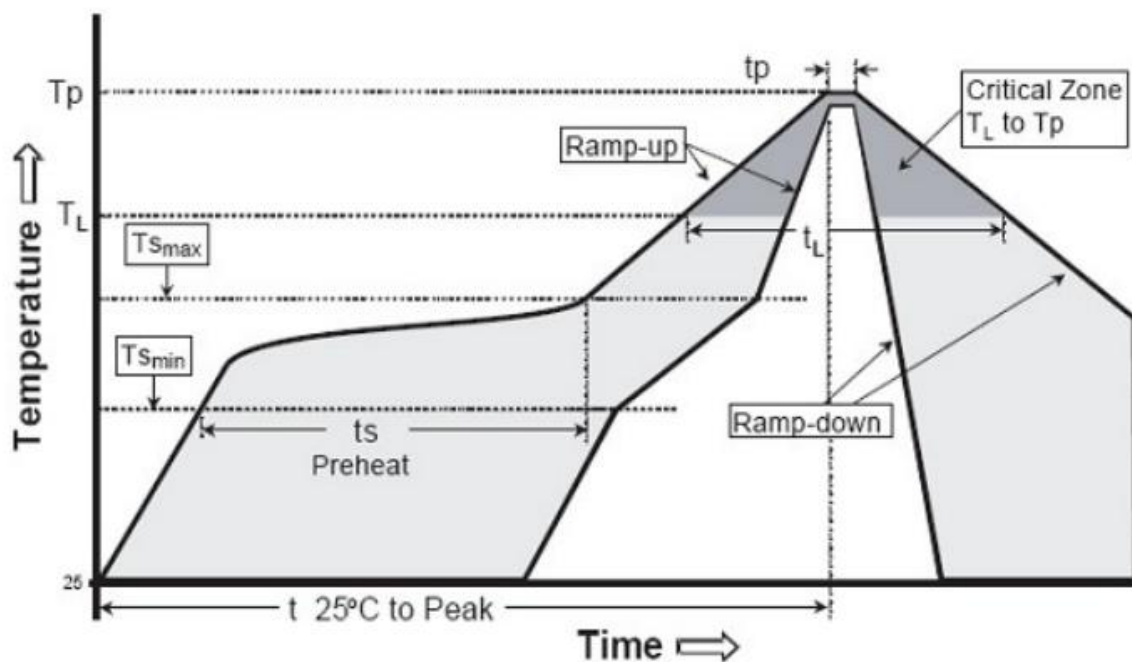
the reflow soldering time should not be more than 400s

(4)所有温度均指在封装本体表面上测得的温度。

all temperature means the temperature measured on the surface of the package body.

(5)当使用热板作业时，温度不超过 260°C，时间不超过 10 秒。

When using hot plate, the temperature is no more than 260 °C, the time is not more than 10seconds.



Profile Feature	Lead-Based Solder	Lead-Free Solder
Average Ramp-Rate (Tsmax to Tp)	3°C/second max	3°C/second max
Preheat: Temperature Min (Tsmin)	100°C	150°C
Preheat: Temperature Max (Tsmax)	150°C	200°C
Preheat: Time (tsmin to tsmax)	60-120 seconds	60-180 seconds
Time Maintained Above: Temperature (TL)	183°C	217°C
Time Maintained Above: Time (tL)	60-150 seconds	60-150 seconds
Peak/Classification Temperature (Tp)	215°C	260°C
Time Within 5°C of Actual Peak Temperature (tp)	10-15 seconds	20-40 seconds
Ramp-Down Rate	6°C/second max	6°C/second max
Time 25°C to Peak Temperature	6 minutes max	8 minutes max

八、可靠性实验项目 Reliability Test Project:

项目 Item	测试标准 Test criterion	测试条件 Test condition	测试时间 Test time	判定标准 Decision criteria	数量 Qty.	失效数量 Fail Qty.
常温寿命测试 Normal Temperature Operating Life	JESD22-A108D	25°C 1500mA 1008H	168H/1008H	VF≤1.1VF (初始) 光通量维持率 ≥90%	11	0
冷热冲击测试 Temperature Cycle	JEITA ED-4701 100 103 JEITA ED-4701 300 301 MIL-STD-202G	-40°C--100°C 30min/1min/30min 500cycle	10cy/500Cycles	无死灯、无外观 不良	11	0

九、失效判定标准 Criteria For Judging Damage

Test Items 项目	Symbol 符号	Test Condition 测试条件	Judging For Damage 判定标准	
			Min. 最小	Max. 最大
Forward Voltage 正向电压	VF	IF=700mA	--	U.L*x1.1
Reverse Current 反向电流	IR	VR = 5V	--	U.L*x2.0
Luminous Intensity 光强	Mcd	IF=700mA	L.L*x0.7	--

U. L: Upper standard level 规格Max

L.L: Lower standard level 规格Min

十、注意事项 Note

1、防静电措施 ESD countermeasure

(1) 静电和电涌会导致产品特性发生改变，例如正向电压降低等，如果情况严重甚至会损毁产品。所以在使用时必须采取有效的防静电措施。

Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs can not be lighted up. In view of the above, we should do some anti-static precautions when using the SMD LED

(2) 所有相关的设备和机器都应该正确接地，同时必须采取其他防止静电和电涌的措施。
All devices, equipments and machineries must be properly grounded, at the same time we should take measures to prevent anti-static and voltage surge.

(3) 使用防静电手环，防静电垫子，防静电工作服、工作鞋、手套，防静电容器，都是有效的防止静电和电涌的措施。

It is also recommended that anti-electrostatic wrist bands, pads, uniforms, gloves or containers can be used when dealing with the LEDs

2、反压保护 Reverse voltage protection

通常 LED 的反向漏电流都很小，不会影响正常使用。如果 LED 长期遭受超过其所能承受的反向电压冲击时，LED 会被损伤，例如，反向漏电流会迅速变大等。这样会引起显示屏零灰度下串光的发生。在设计中，要注意控制反向电压，建议加在 LED 上的反向电压值不超过 10V。

In general, the reverse current of LED is very small, which won't affect the normal use of components. But when it is often suffered the reverse voltage which exceeds the limit of the component then it will be damaged. Such as the reverse current increase rapidly. And it will cause the string light when the screen is black. So please pay attention to controlling the reverse voltage which less than 10V is recommended.

3、清洗 Cleaning

在焊接后推荐使用酒精（无水乙醇）进行清洗，在温度不高于 30℃ 的条件下持续 3 分钟，不高于 50℃ 的条件下持续 30 秒。使用其他类似溶剂清洗前，请先确认使用的溶剂不会对 LED 的封装和环氧树脂部分造成损伤。

It is recommended that alcohol (Anhydrous ethanol) be used as a solvent for cleaning after soldering. Cleaning is to go under 30℃ for 3 minutes or 50℃ for 30 seconds. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not.

4、灌封 Embedment

- (1) 挥发性物质会渗透到 LED 内部，在通电产生光子及热的条件下，会导致 LED 变色，进而造成严重光衰，严禁使用任何对 LED 器件的性能或者可靠性有害的物质或材料，针对特定的用途和使用环境，建议对所有的物质和材料进行相容性的测试。在贴装 LED 时候，不要使用能产生有机挥发性气体的粘结剂。

Volatile substances to leach into the LED inside, photons in electricity and heat conditions, will lead to the LED color, thus causing serious droop, it is forbidden to use any of the LED device performance or reliability of harmful substances or materials, for a specific purpose and use of the environment, advice on all the material and the material compatibility test. When attaching LED, do not use adhesive that can produce volatile organic gas.

- (2) 使用正常灌封胶时，建议先以少量试验，常温点亮 168 小时，确定没有问题再作业。

It is recommended to light up for 168 hours at room temperature for a small amount of test before using normal filling and sealing glue.

5、存储时间 Storage time

为避免受潮的影响，我司建议产品在未开包装前储存条件为 5-30℃，相对湿度小于 60%；已开包装的 LED 光源请在 24H 内使用安装完毕，如未用完之产品，请进行除湿并抽真空后密封保存。开封超过一周或湿度卡发生变化时，请务必进行除湿，除湿条件：60℃±5℃，12H；产品密封保存有效使用期为一年。

To avoid moisture, we recommend storage conditions for the unopened LED +5 ~ +30 °C, relative humidity <60%. LED should be used within 24 Hrs. of opening the package. Please make sure to dehumidify and vacuum pack the remaining/unused LED. Dehumidifying condition: +60 °C ± 5 °C, 12 Hrs. Effective age for the sealed led is one year.

6.温度控制 temperature Control

保证散热前提条件为：TS 点（负极焊盘）为 75/85 摄氏度以下，在此温度以下，散热符合产品寿命要求；为确保在组装时降低接触热阻，请注意在组装过程中，散热片采用良好品质的导热膏涂布均匀且分布面积合理，不可出现太少或高低不平等现象。散热介质需保证电介质耐压测试至少通过 500V

Recommended temperature conditions for enhanced product life: TS (Cathode Point) is <75/85°C. During assembly, please ensure that a good quality thermal paste is applied and distributed evenly over the surface. While using thermal pad (Heat Sink), make sure LED is firmly tightened and there is no gap between surfaces. The need to

ensure the cooling medium dielectric withstand test at least through 500V.

7、使用注意事项 Precautions

(1) 直接用手拿取产品不但会污染封装树脂表面，也可能由于静电等因素导致产品性能的改变。过度的压力也可能直接影响封装内部的管芯和金线，因此请勿对产品施加过度压力，特别当产品处于高温状态下，例如在回流焊接过程中。

When handling the product, touching the encapsulation with bare hands will not only contaminate its surface, but also have an effect on its optical characteristics. Excessive force to the encapsulation might result in catastrophic failure of the LEDs due to die breakage or wire deformation. For this reason, please do not put excessive stress on LEDs, especially when the LEDs are heated such as during Reflow Soldering.

(2) LED 的环氧树脂封装部分相当脆弱，请勿用坚硬、尖锐的物体刮、擦封装树脂部分。在用镊子夹取的时候也应当小心注意。

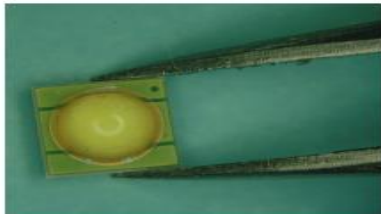
The epoxy resin of encapsulation is fragile, so please avoid scratch or friction over the epoxy resin surface. While handling the product with tweezers, do not hold by the epoxy resin, be careful.



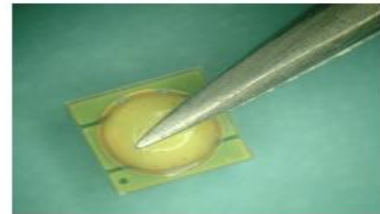
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8、其他 Others

(1) 依规格要求，本公司保留调整产品材料组合的权利。

TONYU reserves the rights on the adjustment of product material mix for the specification.

(2) 如果超出规格书以外而进行使用时，出任何问题我们都将不承担责任。

We will not be responsible for any problem if it is used beyond the specification.

(3) 在使用产品之前，应与我们交流，了解更详细的规格要求。

Before using the product, you should communicate with us for more detailed specifications.