



德辰光电
DESTAR OPTO-ELECTRONICS

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产品规格书 SPECIFICATION

■ 新版本 New Released □ 修订 Revised
版本号 Edition NO.: A.0

顾 客： Customer	
产 品 名 称： Product Name	SMD3030
产 品 型 号： Product P/N	3N128-ABKACK-ZJP-1-6
顾 客 型 号： Customer P/N	
日 期： Date	2017年8月6日

批 准 Approved By	审 核 Checked By	制 定 Issued By
王平	宋勇军	秦凤

【顾客确认 For Customer approval only】

资格状态 Qualification status : 完整 Qualified 受限制 Restricted 不合格 Rejected

批 准 Approved By	确认签发 Verified By	复 查 Re-Checked By	检 查 Checked By

注释 Comments: _____

技术数据表 Technical Data Sheet

本产品主要用于各类室内外照明。

This product is generally used for indoor and outdoor lighting.

特性:

Features:

- 发光颜色:暖白
Emitting Color Warmwhite
- 光强度高, 功耗低
High Luminous Intensity and Low Power Dissipation
- 显色指数: 80
Color Rendering Index 80
- 可靠性高, 寿命长
Good Reliability and Long Life
- 符合欧盟公布的RoHS 指令要求
Complied With RoHS Directive

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* 产品规格如因工艺改进而有所改变, 恕不另行通知。

*The Specifications of the product may be modified for improvement without notice.

电性参数

Electrical Characteristics

◇ 极限参数 (温度=25℃)

Absolute Maximum Ratings (Temperature=25℃):

参数名称 Parameter	符号 Symbol	数值 Rating	单位 Unit
正向电流 Forward Current	I_F	200	mA
正向脉冲电流* Pulse Forward Current*	I_{FP}	240	mA
反向电压 Reverse Voltage	V_R	10	V
工作温度 Operating Temperature	T_{OPR}	-30 ~ +85	℃
贮存温度 Storage Temperature	T_{stg}	-40 ~ +60	℃
功耗 Power Dissipation	P_D	1000	mW

* 注: 脉冲宽度 $\leq 0.1ms$, 占空比 $\leq 1/10$

* Note: Pulse width $\leq 0.1ms$, Duty $\leq 1/10$

◇ 光电参数 (温度=25℃)

Electro-Optical Characteristics (Temperature=25℃):

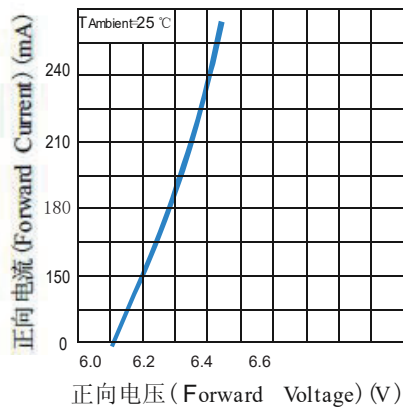
参数名称 Parameter	符号 Symbol	条件 Condition	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Unit
反向电流 Reverse Current	I_R	$V_R=10V$			2	μA
正向电压 Forward Voltage	V_F	$I_F=175mA$	6.0		6.4	V
色度坐标 Chromaticity Coordinates	X					
	Y					
色温 Color Temperature	T_c		2900		3100	K
光通量 Luminous Flux	Φ		110		120	LM
视角 View Angle	$2\theta_{1/2}$			120		deg.

典型特性曲线

Typical Characteristics Curves

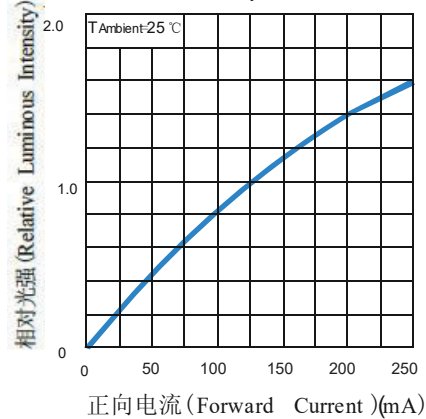
伏安特性

Volt-Ampere Characteristics



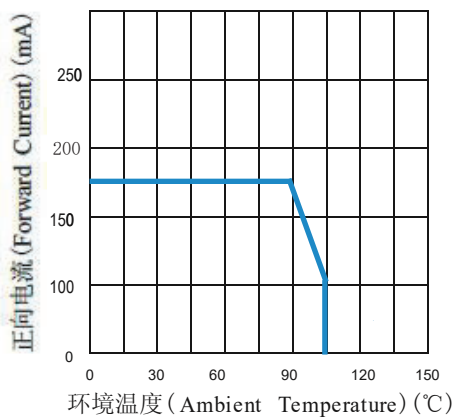
相对光强与正向电流特性

Relative Luminous Intensity VS Forward Current



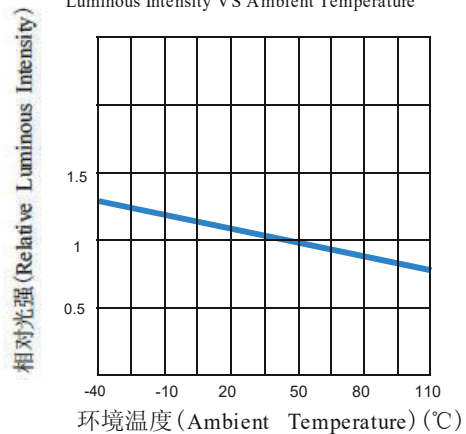
正向电流降额曲线

Forw Current Derating Curve



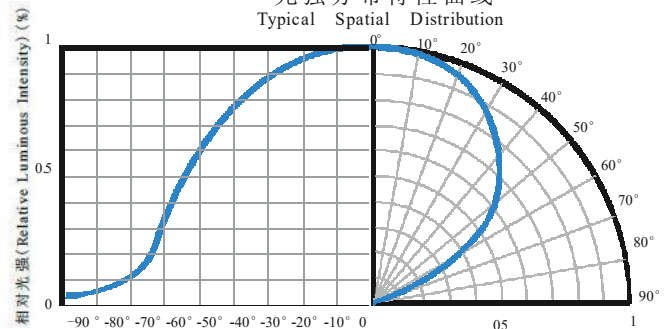
光强与环境温度曲线

Luminous Intensity VS Ambient Temperature



光强分布特性曲线

Typical Spatial Distribution



可靠性试验

Reliability Test Items And Conditions

测试项目 Test Item	测试条件 Test Conditions	持续周期 Duration/Cycle	破坏数量 Number of amage	参考 Reference
温度循环 Temperature	-40℃ 30min ↑↓25℃(2min) 100℃ 30min	循环 100 次 100 times	0/22	JEITA ED-4701300 303
冷热冲击 Thermal Shock	-40℃ 30min ↑↓ 5sec 100℃ 30min	循环 100 次 100 times	0/22	JEITA ED-4701200 303
高温储存 High Temperature Storage	Ta=100℃	1000 小时 1000 hours	0/22	EIAJED-4701200 201
高温高湿 Humidity Heat Storage	Ta=85℃ RH=85%	1000 小时 1000 hours	0/22	EIAJED-4701100 103
低温储存 Low Temperatue Storage	Ta=-40℃	1000 小时 1000 hours	0/22	EIAJED-4701200 202
常温老化 Room Temperatue Test	Ta=25℃ IF=175MA	1000 小时 1000 hours	0/22	Tested with Runlite standard
高温高湿老化 High Humidity Heat Test	60℃ RH=90% IF=175MA	1000 小时 1000 hours	0/22	Tested with Runlite standard
低温老化 Low Temperature Test	Ta=-40℃ IF=175MA	1000 小时 1000 hours	0/22	Tested with Runlite standard
静电放电人体模式 ESD(HBM)	-2KV at 1.5KΩ; 100pF	3 次 3 times	0/22	MIL-STD-883D

● 失效判断标准 Criteria for judging the Damage

项目 Item	符号 Symbol	条件 Condition	失效判断标准 Criteria for Judgement	
			下限 MIN	上限 MAX
顺向电压 Forward Voltage	VF	IF=175MA		USL×1.1
反向电流 Reverse Current	IR	VR=8V		10uA
光通量 Luminous Intensity	Φ	IF=175MA	LSL×0.7	

备注[Note]:

*1 USL:标准上限值

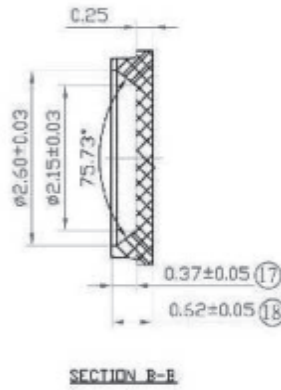
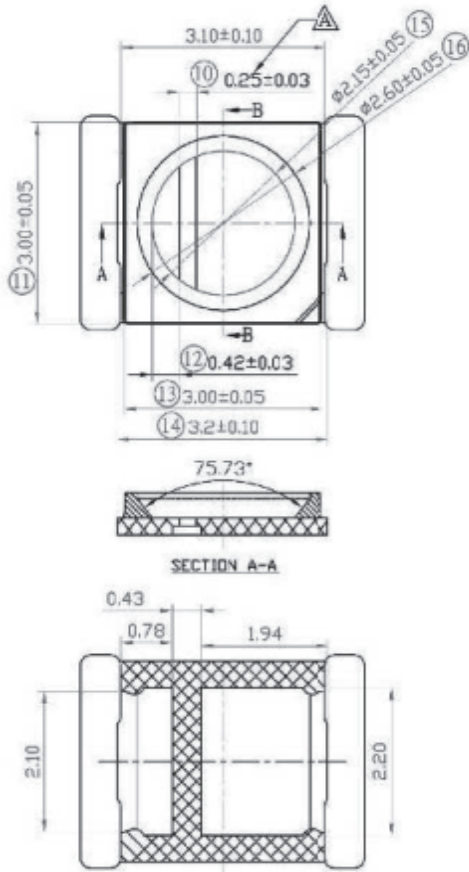
*2 LSL:标准下限值

Uper Specification Level

Lower Specification Level

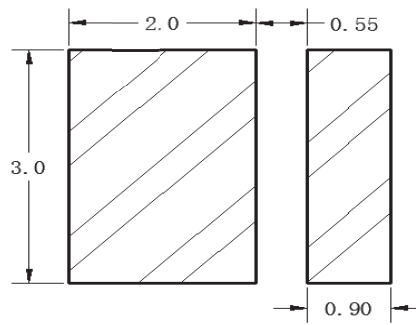
外形尺寸

Ceramic Package Dimensions



(SCALE:4/1)

±0.1mm unless otherwise noted



焊盘尺寸

Note:

单位: mm, 未注公差: ±0.1mm

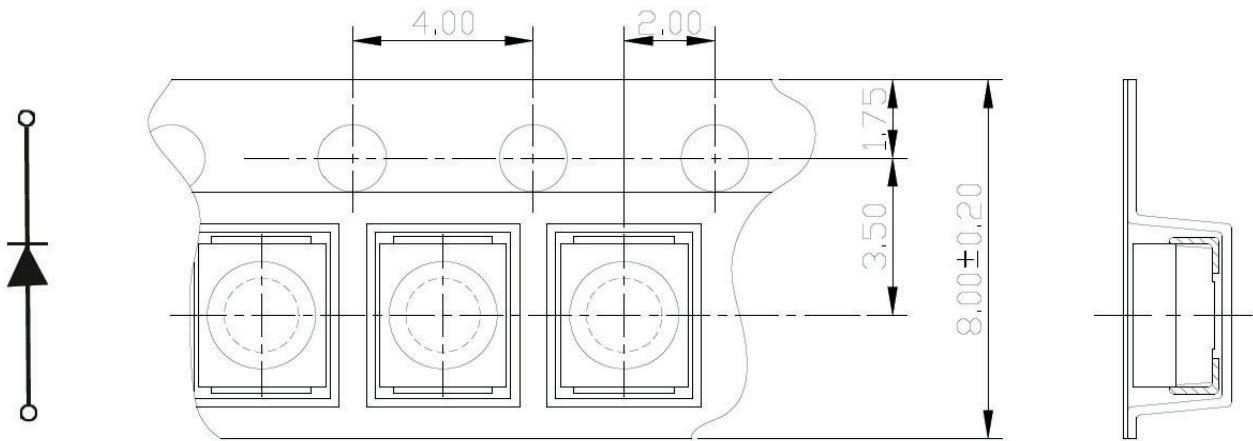
All dimensions in mm.

Tolerances unless mentioned is ±0.1 mm.

包装

Packaging

◇ 载带 Carrier Tape

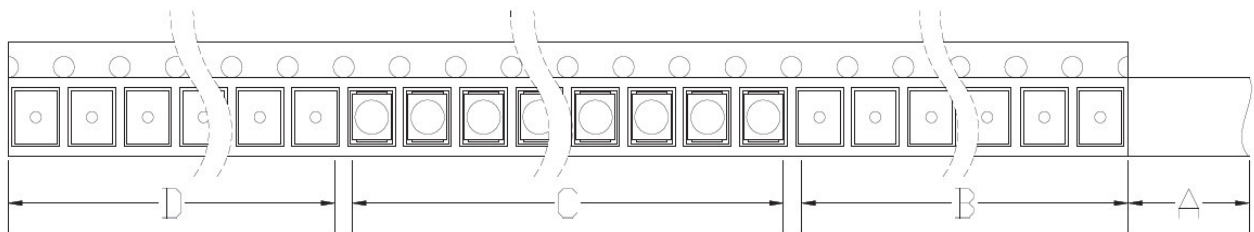


单位: mm, 未注公差: ± 0.1 mm

All dimensions in mm, tolerances unless mentioned is ± 0.1 mm.

◇ 编带细节 Details Of Carrier Tape

前进方向 Progressive Direction \longrightarrow

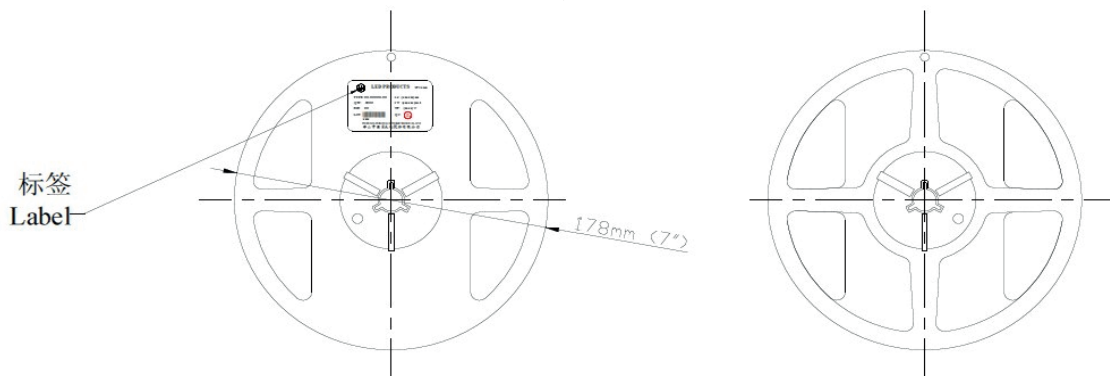


A: 盖带, 300 mm; B: 引导, 空带, 200mm; C: 编载产品5000 只; D: 尾部, 空带, 200mm

A: Top Cover Tape, 300mm; B: Leader, Empty, 200mm; C: 5000 Lamps Loaded; D: Trailer, Empty, 200mm.

◇ 带盘 Reel Dimension

前进方向 Progressive Direction \longrightarrow



标签
Label

178mm (7")

焊接指导 (1)

Guideline for Soldering (1)

1. 使用烙铁人手焊接

Hand Soldering

推荐使用功率低于 20W 的烙铁, 焊接时烙铁的温度必须保持在 300°C 以下, 且每个电极只能进行一次焊接, 每次焊接的持续时间不得超过 3 秒。

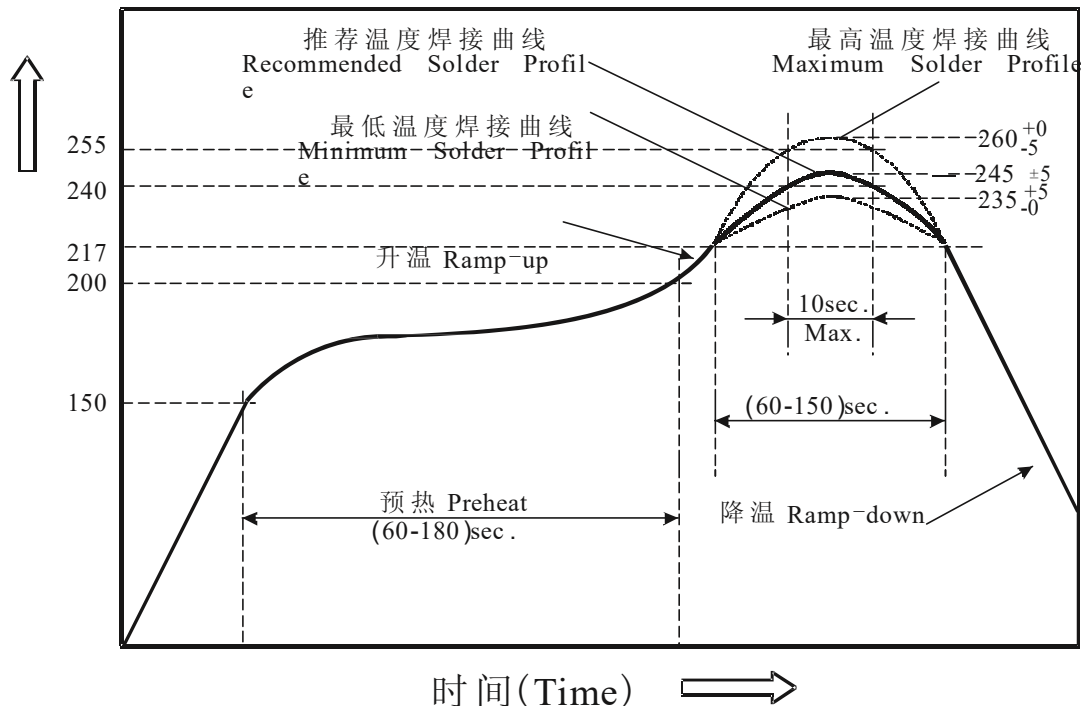
人手焊接过程中的不慎操作易引起 LED 产品的损坏, 应当小心谨慎。

A soldering iron of less than 20W is recommended to be used in Hand Soldering. Please keep the temperature of the soldering iron under 300°C while soldering. Each terminal of the LED is to go for less than 3 second and for one time only.

Be careful because the damage of the product is often started at the time of the hand soldering.

2. 回流焊接: 推荐使用以下无铅回流焊接温度图进行。

Reflow Soldering: Use the conditions shown in the under Figure of Pb-Free Reflow Soldering.



2 回流焊接最多只能进行两次。

Reflow soldering should not be done more than two times.

2 在回流焊接升温过程中, 请不要对 LED 施加任何压力。

Stress on the LEDs should be avoided during heating in soldering process.

2 在焊接完成后, 待产品温度下降到室温之后, 再进行其他处理。

After soldering, do not deal with the product before its temperature drop down to room temperature.

焊接指导 (2)

Guideline for Soldering (2)

3. 清洗:

Cleaning

在焊接后推荐使用酒精进行清洗，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。超声波清洗也是有效的方法，一般最大功率不应超过 300W，否则可能对 LED 造成损伤。请根据具体的情况预先测试清洗条件是否会对LED 造成损伤。

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

Ultrasonic cleaning is also an effective way for cleaning. But the influence of Ultrasonic cleaning on LED depends on factors such as ultrasonic power. Generally, the ultrasonic power should not be higher than 300W. Before cleaning, a pre-test should be done to confirm whether any damage to LEDs will occur.

* 注意：此一般指导原则并不适用于所有 PCB 设计和焊接设备的配置。具体工艺受到诸多因素的影响，请根据特定的PCB设计和焊接设备来确定焊接方案。

* **Note:** This general guideline may not apply to all PCB designs and configurations of all soldering equipment. The technique in practice is influenced by many factor, it should be specialized base on the PCB designs and configurations of the soldering equipment.

使用注意事项 (1)

Precautions (1)

1. 贮存:

Storage

- 2 本产品使用密封防潮抗静电袋包装, 并附有干燥剂, 未开封的产品有一年的保存时间。

Moisture proof and anti-electrostatic package with moisture absorbent material is used, to keep moisture to a minimum.

- 2 开封前, 产品须存放在温度不高于30℃, 湿度不高于60%RH 的环境中。

Before opening the package, the product should be kept at 30℃ or less and humidity less than 60% RH, and be used within a year.

- 2 开封后, 产品须存放在温度不高于30℃, 湿度不高于10%RH 的环境中, 且应该在24 小时 (1 天) 内使用完。建议工作环境为温度不高于30℃, 湿度不高于60%RH。

After opening the package, the product should be stored at 30℃ or less and humidity less than 10%RH, and be soldered within 24 hours (1 day). It is recommended that the product be operated at the workshop condition of 30℃ or less and humidity less than 60%RH.

- 2 对于尚未焊接的LED, 如果吸湿剂或包装失效, 或者产品没有符合以上有效存储条件, 烘焙可以起到一定的性能恢复效果。烘焙条件:(80±5)℃, 持续24 小时。

If the moisture absorbent material has fade away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition: (80±5)℃ for 24 hours.

2. 静电:

Static Electricity

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。

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。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。

Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristic such as the forward voltage becomes lower, or the LEDs do not light at the low current. even not light.

All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.

使用注意事项 (2)

Precautions (2)

3. 设计建议:

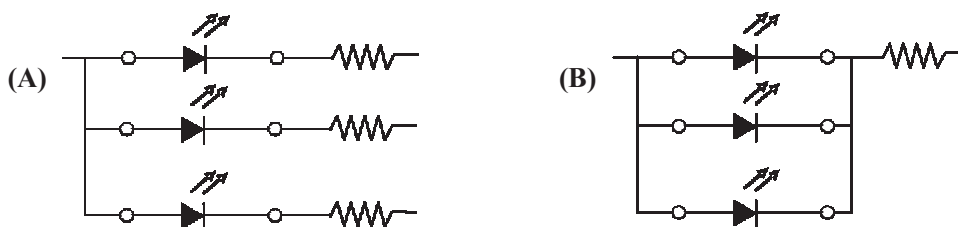
Design Consideration

设计电路时, 通过 LED 的电流不能超过规定的最大值, 同时, 还需使用保护电阻, 否则, 微小的电压变化将会引起较大的电流变化, 可能导致产品损毁。

建议使用以下 (A) 电路, 该电路能够很好的调节通过每个 LED 的电流; 不推荐使用 (B) 电路, 该电路在持续的电压驱动下, LED 的正向电压 (V_F) 发生变化, 电流会随之而发生变化, 可能使某些 LED 承受高于规定的电流值。

In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen.

It is recommended to use Circuit A which regulates the current flowing through each LED rather than Circuit B. When driving LEDs with a constant voltage in Circuit B, the current through the LEDs may vary due to the variation in Forward Voltage (V_F) of the LEDs. In the worst case, some LED may be subjected to stresses in excess of the Absolute Maximum Rating.



LED 的特性容易因为自身的发热和环境的温度的改变而发生改变。温度的升高会降低 LED 的发光效率、影响发光颜色等, 所以在设计时应充分考虑散热的问题。

Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color changed and so on. Please consider the heat generation of the LEDs when making the system design.

使用注意事项 (3)

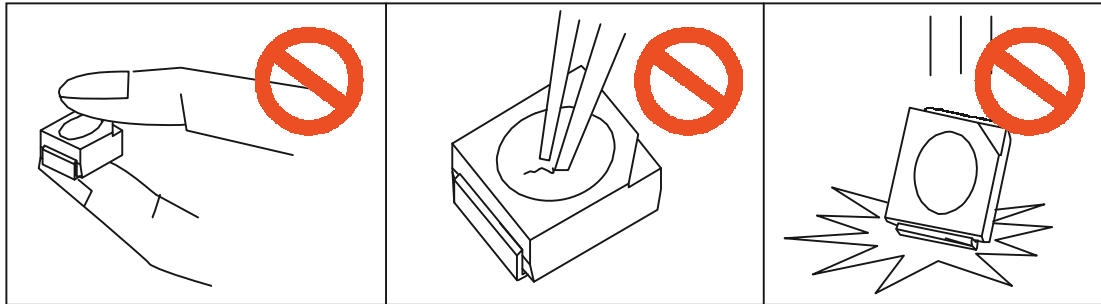
Precautions (3)

4. 其他事项:

Others

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 encapsulant with bare hands will not only contaminate its surface, but also affect on its optical characteristic. Excessive force to the encapsulant 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.



LED 的陶瓷封装部分非常脆弱,请勿用坚硬、尖锐的物体刮、擦封装部分。在用镊子夹取的时候也应当小心注意。

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

5. 眼睛保护忠告:

Safety Advice For Human Eyes

LED 发光时,请勿直视发光光源,特别是对于一些光强较高的LED,强光可能伤害你的眼睛。

Viewing direct to the light emitting center of the LEDs, especially those of great Luminous Intensity will cause great hazard to human eyes. Please be careful.