Golden DRAGON oval Plus

无铅设计，符合 ROHS 标准

Lead (Pb) Free Product - RoHS Compliant

LUW W5PM

初步数据 / Preliminary Data

特点

- **封装**：白色 SMD 封装，透明硅树脂
- **典型光通量**：100 lm（工作电流为 350 mA 时），最大 225 lm（工作电流为 1 A 时）
- **装置特点**：小尺寸高效光源
- **颜色坐标**：x = 0.31, y = 0.32（符合 CIE 1931色度坐标图）
- **典型色温**：6500 K
- **视角**：水平 120°，垂直 70°
- **技术**：ThinGaN
- **光效**：110 lm/W（工作电流为 100 mA 时）
- **分组参数**：光通量，颜色坐标
- **组装方式**：适用于 SMT 组装方式
- **焊接方式**：回流焊接
- **预处理**：符合 JEDEC 4 级标准
- **卷带封装**：24 mm 卷带，200/卷，直径为 180 mm
- **ESD 耐压**：最高 2 kV（符合 JESD22-A114-D 标准）

应用

- 室外照明：街道、隧道、停车场、步行区、公共场所、加油站照明和泛光灯
- 线性室内应用：替代荧火灯、地灯照明、零售照明/商铺照明和办公室照明

Features

- **Package:** white SMD package with clear silicone lens
- **Typical Luminous Flux:** 100 lm at 350 mA up to 225 lm at 1 A
- **Feature of the** device**:** high efficient lightsource at low space
- **Color coordinates:** x = 0.31, y = 0.32 acc. to CIE 1931 (white)
- **Typ. color temperature:** 6500 K
- **Viewing angle:** horizontal 120°, vertical 70°
- **Technology:** ThinGaN
- **Optical efficiency:** 110 lm/W at 100 mA
- **Grouping parameter:** luminous flux, color coordinates
- **Assembly methods:** suitable for SMT assembly methods
- **Soldering methods:** reflow soldering
- **Preconditioning:** acc. to JEDEC Level 4
- **Taping:** 24 mm tape with 200/reel, ø180 mm
- **ESD-withstand voltage:** up to 2 kV acc. to JESD22-A114-D

Applications

- Outdoor lighting: streets, tunnels, parking lots, pedestrian areas, public places, petrol stations, flood light
- Linear indoor applications: fluorescent replacement, floor lighting, retail/shop and office lighting

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订购信息
Ordering Information

类型 Type	发光颜色 Color of Emission	光通量[第 18页 1)] Luminous Flux[1) page 18] I_F = 350 mA Φ_V (mlm)	订购代码 Ordering Code
LUW W5PM-KYLX-6P7R	白色 / white	82.000 ... 130.000	Q65110A9011
LUW W5PM-KYLX-5P7R	白色 / white	82.000 ... 130.000	Q65110A9004
LUW W5PM-KYKZ-5P7R	白色 / white	82.000 ... 112.000	Q65110A9010

注释： *上述类型编号代表仅包含几个亮度组的订购组（详细说明请参见**第 6 页**）。每个卷盘上仅装运一个亮度组（一个卷盘上不会混装两个亮度组）。例如，LUW W5PM-KYLX-6P7R 表示任何一个卷盘上仅可装运一个亮度组：KY、KZ 或 LX。为了确保可用性，单个亮度组将不接受订购。*

*类似地，对于需要测量和分选色度坐标组的颜色，每个卷盘上将仅装运单个色度坐标组。例如，LUW W5PM-KYLX-6P7R 表示每个卷盘上仅可装运从 6P 到 7R 范围内的一个色度坐标组（详细说明请参见**第 5 页**）。为了确保可用性，单个色度坐标组将不接受订购。*

Note: *The above Type Numbers represent the order groups which include only a few brightness groups (see **page 6** for explanation). Only one group will be shipped on each reel (there will be no mixing of two groups on each reel). E.g. LUW W5PM-KYLX-6P7R means that only one group KY, KZ or LX will be shippable for any one reel. In order to ensure availability, single brightness groups will not be orderable.*

*In a similar manner for colors where chromaticity coordinate groups are measured and binned, single chromaticity coordinate groups will be shipped on any one reel. E.g. LUW W5PM-KZLY-6P7R means that only 1 chromaticity coordinate group -6P to 7R will be shippable on each reel (see **page 5** for explanation). In order to ensure availability, single chromaticity coordinate groups will not be orderable.*

最大额定值
Maximum Ratings

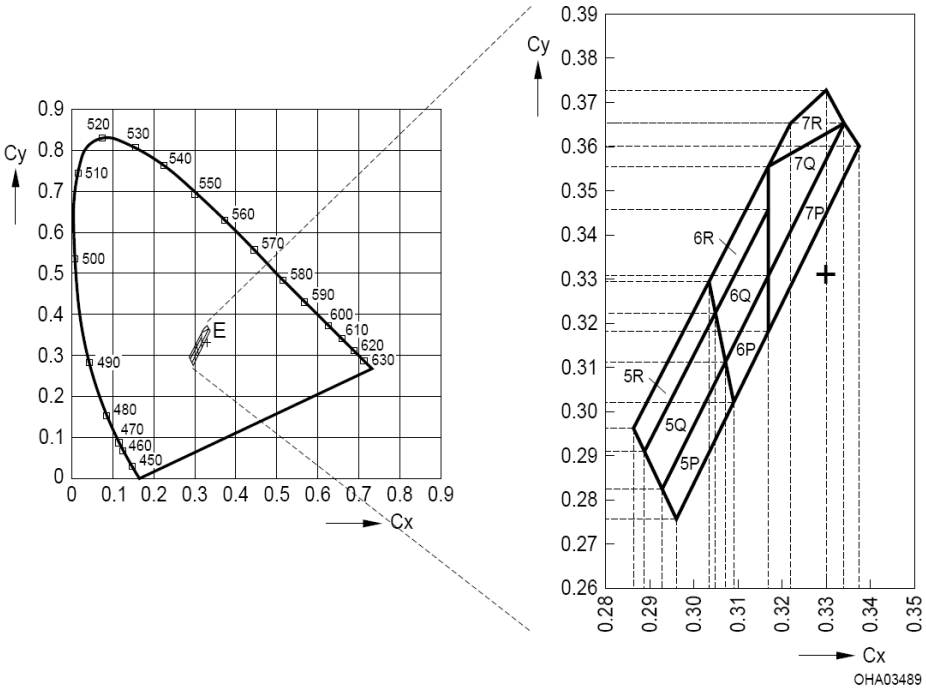
参数 Parameter	符号 Symbol	值 Value	单位 Unit
工作温度范围 Operating temperature range	T_{op}	– 40 … + 125	°C
储存温度范围 Storage temperature range	T_{stg}	– 40 … + 125	°C
结点温度 Junction temperature	T_j	>150（短期应用）/ for short term applications	°C
结点温度 Junction temperature	T_j	125	°C
正向电流(环境温度25°C)　（最小值）/ (min.) Forward current　（最大值）/ (max.) (T_S = 25°C)	I_F I_F	100 1000	mA mA
脉冲电流 Surge current $t \leq 10$ µs, D = 0.005, T_S = 25°C	I_{FM}	2000	mA
反向电压 Reverse voltage (T_S=25°C)	V_R	不设计用于反向运行 not designed for reverse operation	V

特性
Characteristics
(T_S = 25 °C)

参数 Parameter		符号 Symbol	值 Value	单位 Unit
CIE1931色度坐标 x第 18 页 5) Chromaticity coordinate x acc. to CIE 1931[5] page 18 I_F = 350 mA	（典型值）/ (typ.)	x	0.31	–
CIE1931色度坐标 y第 18 页 5) Chromaticity coordinate y acc. to CIE 1931[5] page 18 I_F = 350 mA	（典型值）/ (typ.)	y	0.32	–
100% I_V 时的峰值视角 peak. Viewing angle at 100 % I_V	（典型值） / (typ.)	2φ	垂直 / vertical 70 水平 / horizontal 120	度 deg.
正向电压第 18 页 6) Forward voltage[6] page 18 I_F = 350 mA	（最小值）/ (min.) （典型值）/ (typ.) （最大值）/ (max.)	V_F V_F V_F	2.7 3.2 3.7	V V V
反向电流 Reverse current	（最大值） (max.)	I_R	不设计用于反向运行 not designed for reverse operation	µA
热阻 Thermal resistance 结点/焊点 Junction/soldering point	 （典型值）/ (typ.) （典型值）/ (max.)	 $R_{th\ JS}$ $R_{th\ JS}$	 6.5 11*	 K/W K/W

*R_{th}（最大值）取决于统计值
R_{th}(max) is based on statistic values

色度坐标组[第 18 页 5)]
Chromaticity coordinate groups[5) page 18]



组 Group	Cx	Cy
5P	0.296	0.276
	0.293	0.282
	0.307	0.311
	0.309	0.302
6P	0.309	0.302
	0.307	0.311
	0.317	0.331
	0.317	0.318
7P	0.317	0.318
	0.317	0.331
	0.334	0.365
	0.338	0.360

组 Group	Cx	Cy
5Q	0.293	0.282
	0.289	0.291
	0.305	0.322
	0.307	0.311
6Q	0.307	0.311
	0.305	0.322
	0.317	0.346
	0.317	0.331
7Q	0.317	0.331
	0.317	0.356
	0.334	0.365
	0.317	0.331

组 Group	Cx	Cy
5R	0.289	0.291
	0.287	0.296
	0.304	0.329
	0.305	0.322
6R	0.305	0.322
	0.304	0.329
	0.317	0.356
	0.317	0.346
7R	0.317	0.356
	0.322	0.365
	0.330	0.373
	0.334	0.365

亮度组
Brightness Groups

亮度组 **Brightness Group**	**光通量**第 18 页 1) **Luminous Flux**1) page 18 Φ_V **(mlm)**
KY	82.000 ... 97.000
KZ	97.000 ...112.000
LX	112.000 ...130.000

注释： 系列类型的标准装运格式包括仅由几个单个亮度组组成的产品族亮度组。单个亮度组不接受订购。

Note: The standard shipping format for serial types includes a family group of only a few individual brightness groups. Individual brightness groups cannot be ordered.

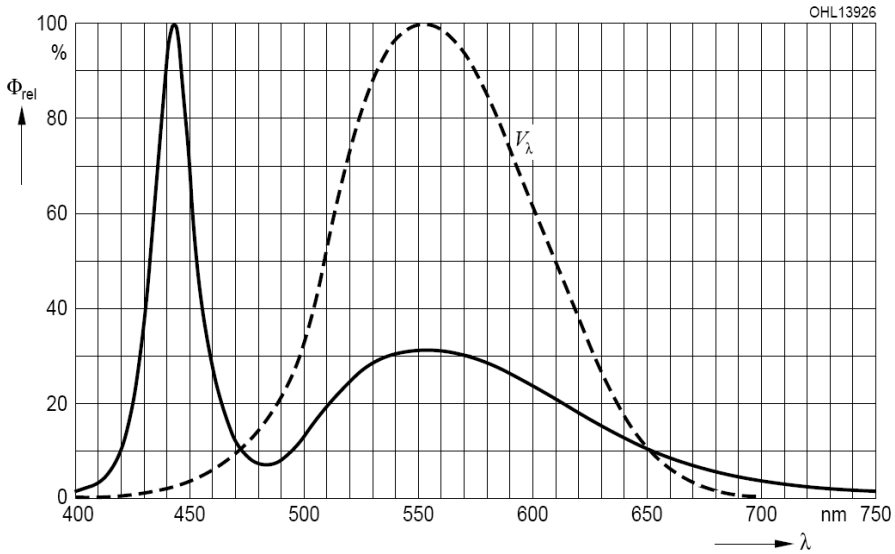
标签上的组名
Group Name on Label
示例：KY-6P
Example: KY-6P

亮度组 **Brightness Group**	**色度坐标组** **Chromaticity Coordinate Group**
KY	6P

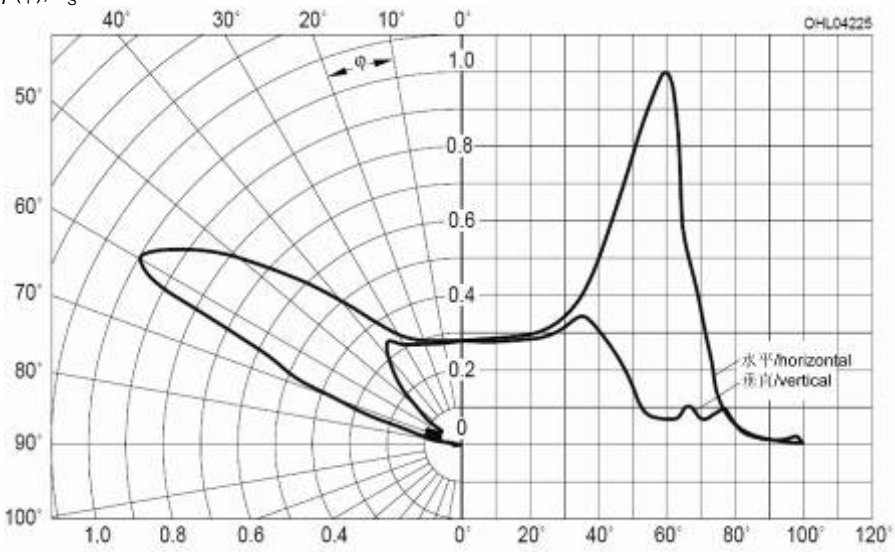
注释： 每个包装单元/卷带均仅包含一个亮度组。

Note: No packing unit / tape ever contain more than one brightness group.

相对辐射光谱第 18 页 2)
Relative Spectral Emission2) page 18
V(λ) = 标准人眼响应曲线/ Standard eye response curve
$\Phi_{rel} = f(\lambda)$; T_S = 25 °C; I_F = 350 mA



配光曲线第 18 页 2)
Radiation Characteristic2) page 18
$I_{rel} = f(\varphi)$; T_S = 25 °C



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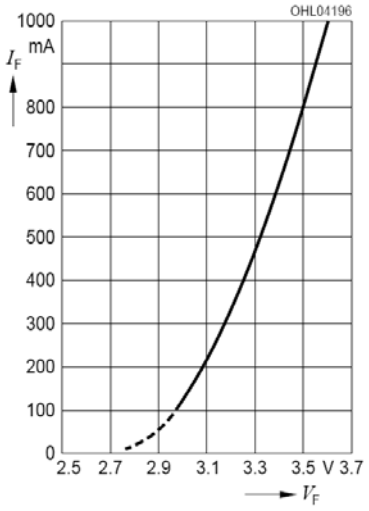
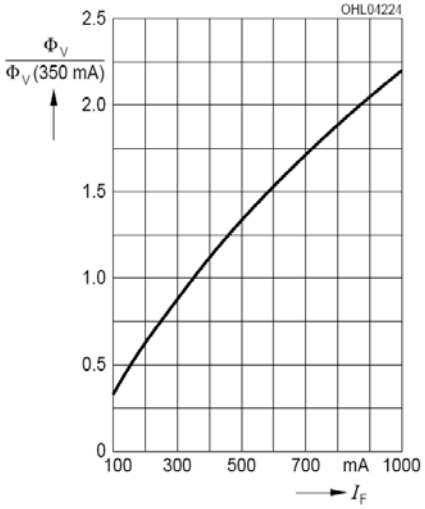
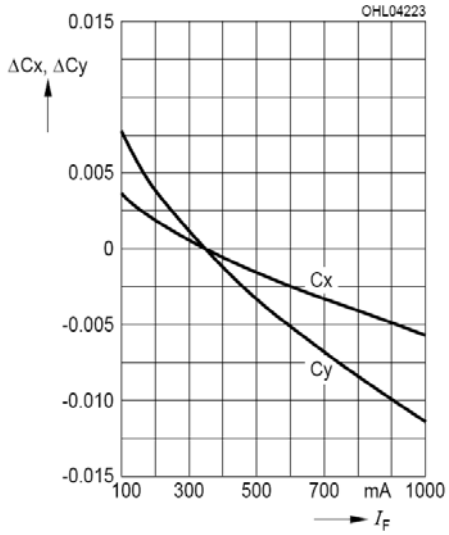
正向电流[第 18 页 2)、4)]
Forward Current[2)4) page 18]
$I_F = f(V_F)$; T_S = 25 °C
实线：指定直流范围
solid line: specified DC-range



相对光通量[第 18 页 2)、7)]
Relative Luminous Flux[2) 7) page 18]
$\Phi_V/\Phi_V(350\ mA) = f(I_F)$; T_S = 25 °C



色度坐标偏移[第 18 页 2)]
Chromaticity Coordinate Shift[2) *page 18*]
x, y = $f(I_F)$; T_S = 25 °C



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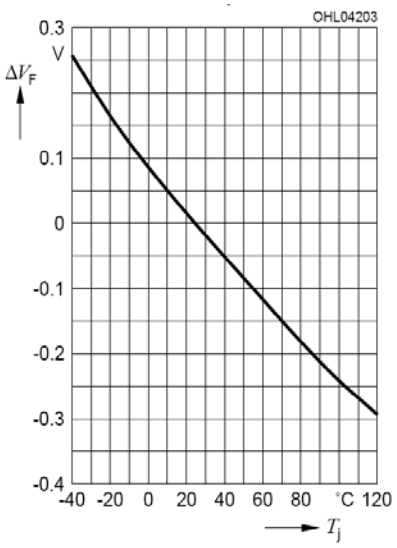
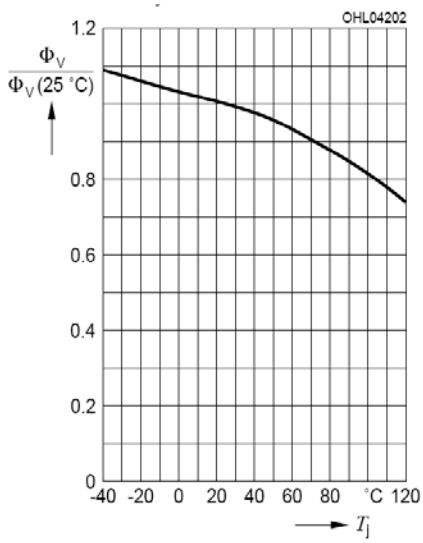
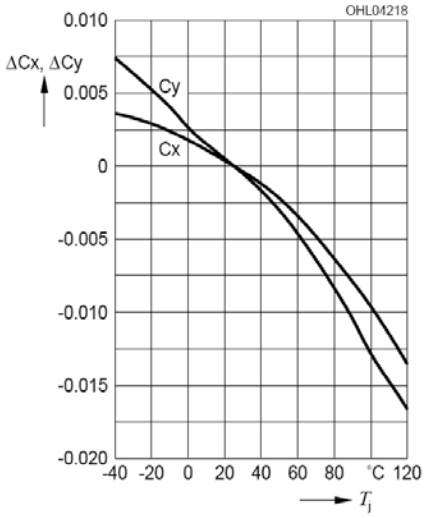
相对正向电压[第 18 页 2)、4)]
Relative Forward Voltage[2)4) *page 18*]
$\triangle V_F = V_F - V_F(25\ °C) = f(T_j)$; I_F = 350 mA



相对光通量[第 18 页 2)]
Relative Luminous Flux[2) page 18]
$\Phi_V/\Phi_V(25\ °C) = f(T_j)$; I_F = 350 mA



色度坐标偏移[第 18 页 2)]
Chromaticity Coordinate Shift[2) page 18]
x, y = $f(T_j)$; I_F = 350 mA



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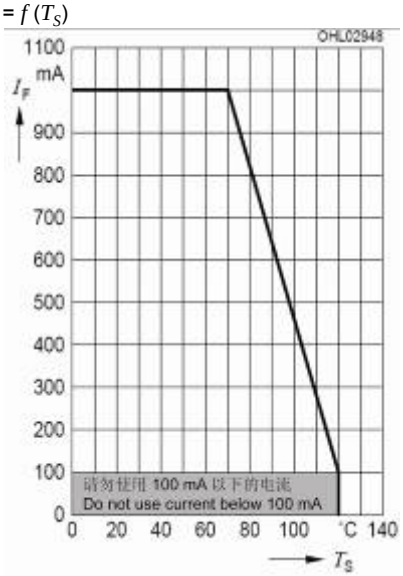
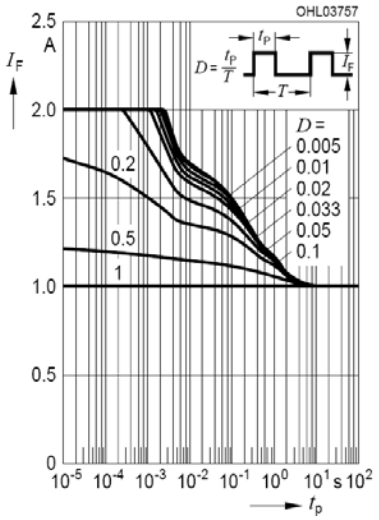
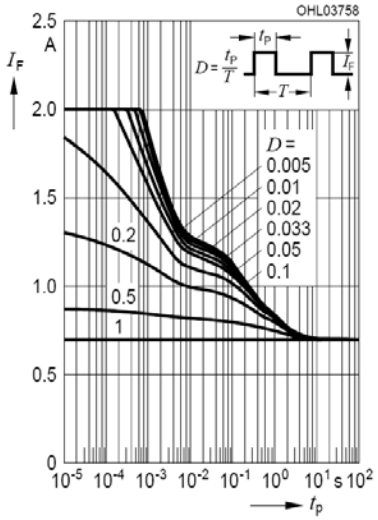
最大容许正向电流
Max. Permissible Forward Current
$I_F = f(T_S)$



容许脉冲调制能力 $I_F = f(t_p)$
Permissible Pulse Handling Capability
占空比 D = 参数，T_S = 25°C
Duty cycle D = parameter, T_S = 25 °C



容许脉冲调制能力 $I_F = f(t_p)$
Permissible Pulse Handling Capability
占空比 D = 参数，T_S = 85°C
Duty cycle D = parameter, T_S = 85 °C



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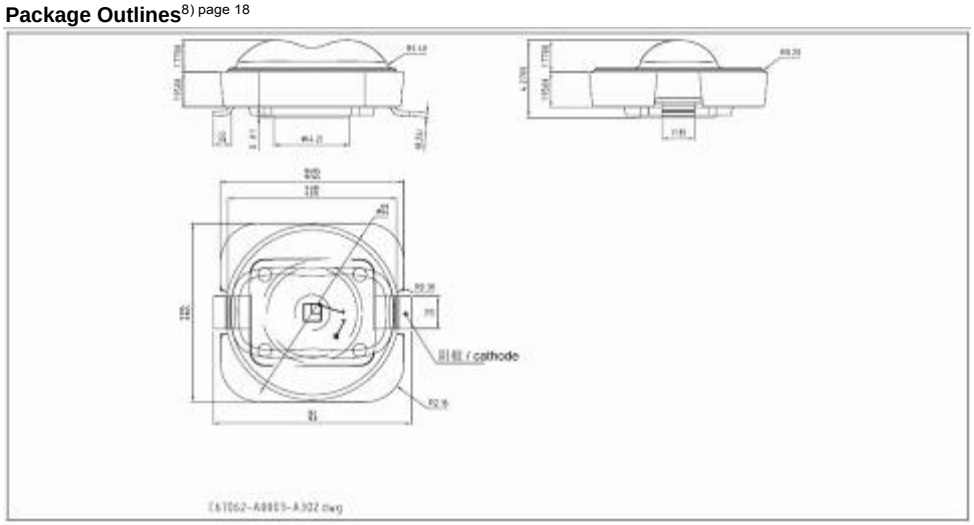
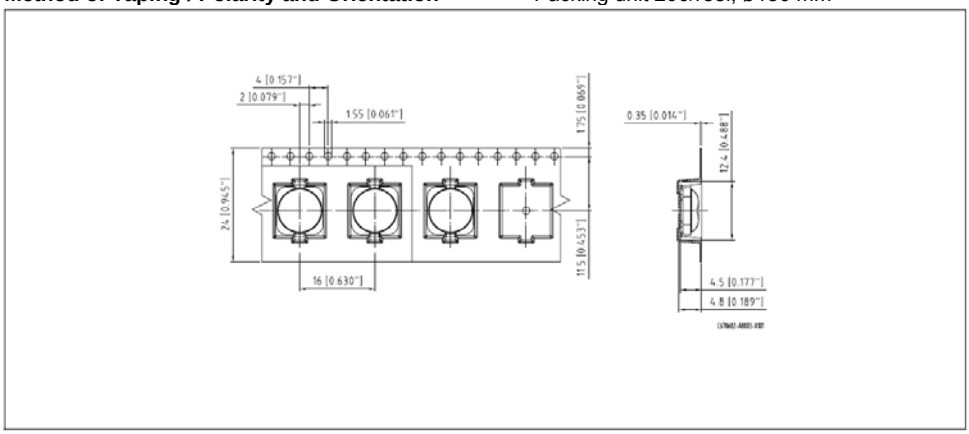
封装略图第 18 页 8)
Package Outlines8) page 18



阴极标记：	**标记**
Cathode mark:	mark
参考重量 / Approx. weight:	200 mg

卷带封装方式/极性和方向第 18 页 8)
Method of Taping / Polarity and Orientation8) page 18

包装单元 200/卷，直径为 180 mm
Packing unit 200/reel, ø180 mm



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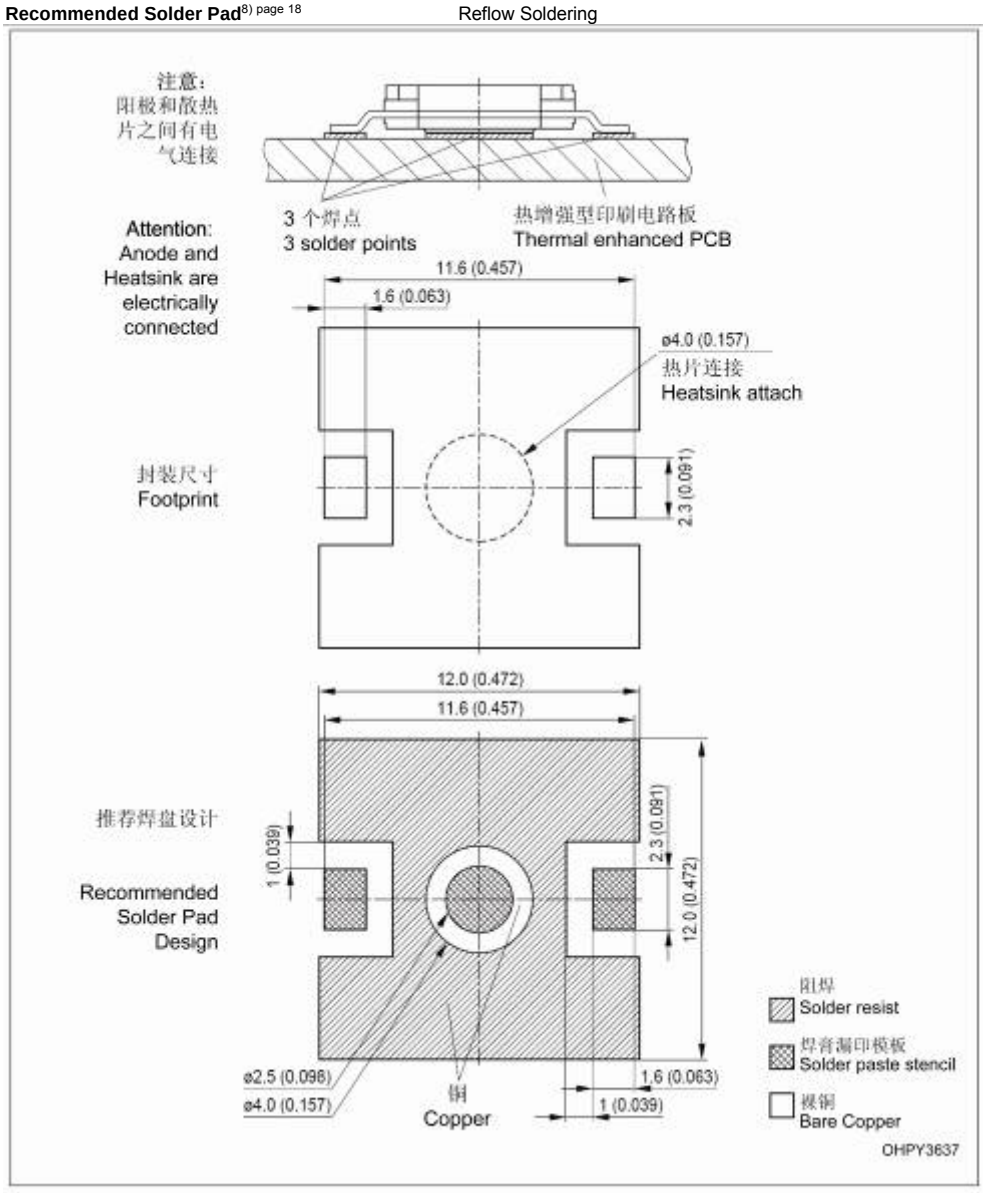
推荐焊盘[第 18 页 8)]
Recommended Solder Pad[8) page 18]

回流焊接
Reflow Soldering



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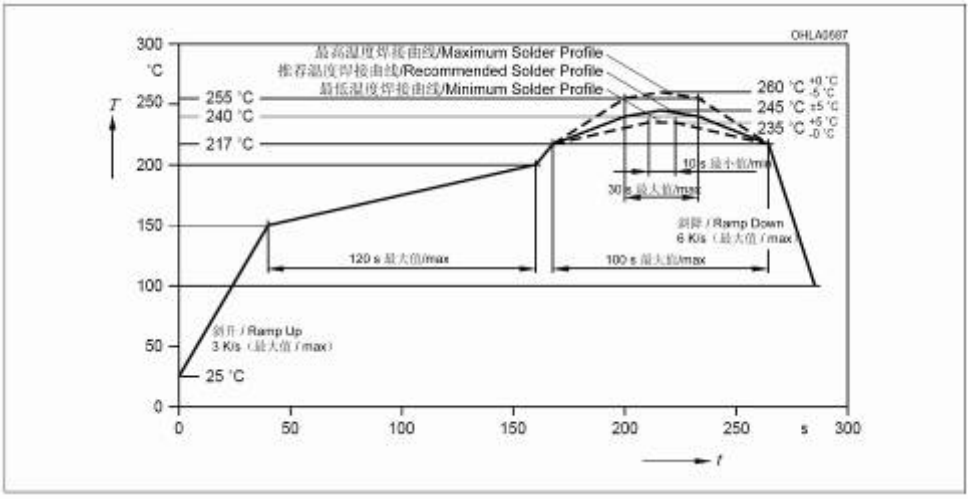
焊接条件
Soldering Conditions
无铅焊接的回流焊接温度曲线简图
Reflow Soldering Profile for lead free soldering

预处理符合 JEDEC 4 级标准
Preconditioning acc. to JEDEC Level 4
（符合 J-STD-020C 标准）
(acc. to J-STD-020C)

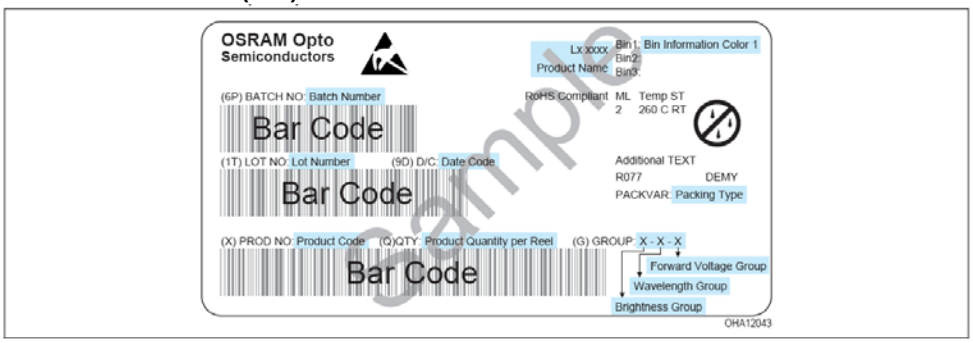


注释： 此封装不适宜超声波清洗
Note: Package not suitable for ultra sonic cleaning

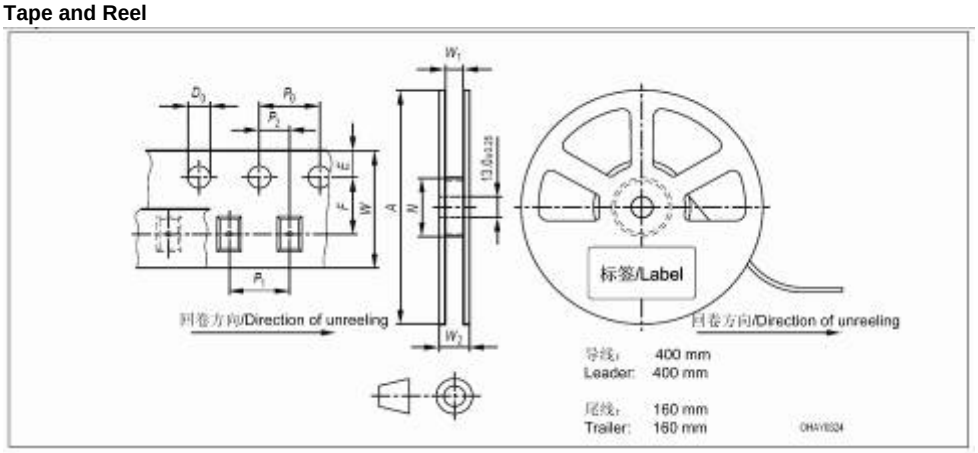
注释： 本产品的封装内外均包含镀银金属部件。如果将本产品放置在含有腐蚀性气体（例如含硫化合物的气体）的环境中，该镀层可能会出现变色、功能失常或可焊性降低等问题。因此，应避免在此类环境中储存、组装和使用本产品。此外，应防止腐蚀性气体从外部进入最终产品内部，LED 周围应避免放置会挥发腐蚀性气体的材料或元件。由于冷凝可能会加速 LED 腐蚀和老化，因此还应避免出现冷凝现象。

Note: This product contains silver plated metal parts inside and outside the package. This plating may show discoloration, malfunction or reduced solderability if the product is exposed to an environment which contains corrosive gases (e.g. sulfur compounds containing gases). Such environment shall be avoided during storage, assembly and use of this product. Within the end product, entering of such gases from the outside should be prevented and materials or components that emit corrosive gases should be avoided in close proximity to the LEDs. Condensation should be avoided as it could accelerate corrosion and aging effects.

条形码——产品标签 (BPL)
Barcode-Product-Label (BPL)



卷带和卷盘
Tape and Reel



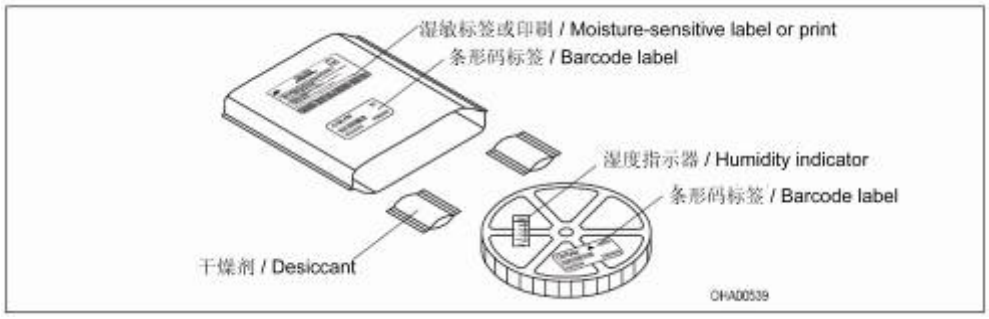
卷带尺寸（单位：mm（英寸））/ Tape dimensions in mm (inch)

W	P_0	P_1	P_2	D_0	E	F
$24^{+0.3}_{-0.1}$	4 ± 0.1 (0.157 ± 0.004)	8 ± 0.1 (0.315 ± 0.004)	2 ± 0.1 (0.079 ± 0.004)	1.5 + 0.1 (0.059 + 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	11.5 ± 0.1 (0.453 ± 0.004)

卷盘尺寸（单位：mm（英寸））/ Reel dimensions in mm (inch)

A	W	N_{min}	W_1	$W_{2\ max}$
180 (7)	24 (0.945)	60 (2.362)	24.4 + 2 (0.961 + 0.079)	30.4 (1.197)

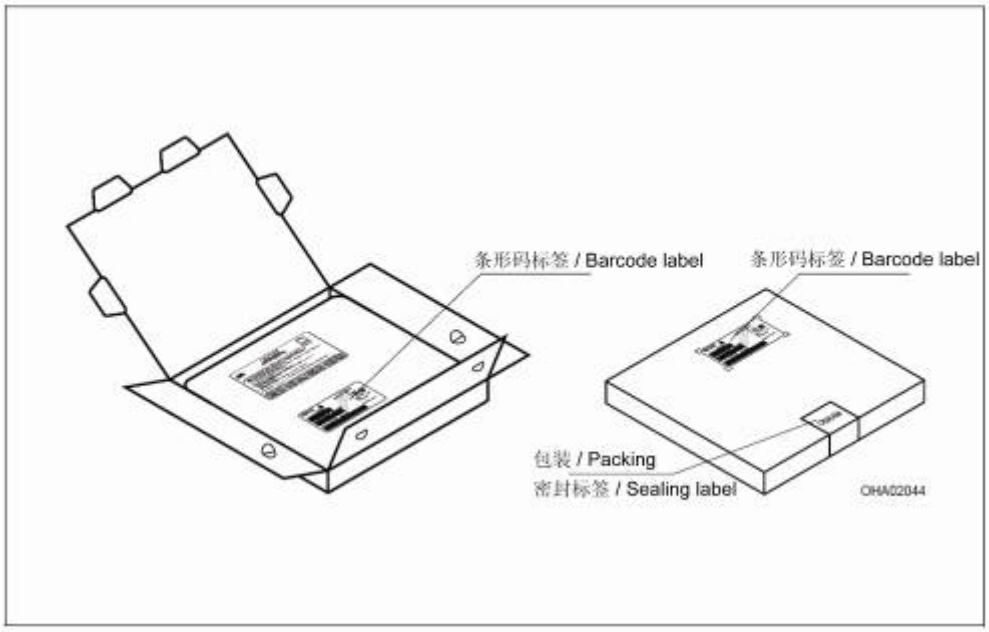
干式填充工艺和材料
Dry Packing Process and Materials



注释： 湿敏产品包装在装有干燥剂和湿度卡的干燥袋子中。
关于干式填充的详细信息，请参阅网站资料和简明版产品目录中“干式填充”标题下的“卷带和卷盘”章节。您还可以找到 JEDEC 等规范性参考。

Note: Moisture-sensitive product is packed in a dry bag containing desiccant and a humidity card.
Regarding dry pack you will find further information in the internet and in the Short Form Catalog in chapter “Tape and Reel” under the topic “Dry Pack”. Here you will also find the normative references like JEDEC.

运输包装和材料
Transportation Packing and Materials



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修订记录 / Revision History: 2009-07-20
先前版本 / Previous Version: 2009-05-06

页码 Page	更改内容（自上次修订后的主要更改） Subjects (major changes since last revision)	修改日期 Date of change
全部 / all	创建目标数据表 / Target data sheet created	2009-05-06
全部 / all	创建初步数据表 / Preliminary data sheet created	2009-07-20

由于 IEC 60825 标准计划取消 LED 部分，所以本产品根据 CIE S009/E:2002 标准（“灯和灯系统的光生物安全性”）进行眼睛安全评估。

在该 CIE 标准的风险分组系统中，本数据表中指定的 LED 属于“低风险”组（与接触时间为 100 秒的可见光谱范围内的装置相关）。在实际环境（包括接触时间、瞳孔、观察距离）中，认为这些装置对人眼没有危害。

但是，作为原则问题，必须提及强烈光源具有致盲效应，因此很可能发生二次曝光。直视其他明亮光源（如车前灯）时也是如此，视敏度可能会暂时下降，也可能会出现余像，从而导致困扰、烦恼、视障甚至意外事故，具体取决于当时的情况。

Due to the planned cancellation of the LED from IEC 60825, the evaluation of eye safety occurs according to the standard CIE S009/E:2002 ("photobiological safety of lamps and lamp systems").

Within the risk grouping system of this CIE standard, the LEDs specified in this data sheet fall into the "low risk" group (relating to devices in the visible spectrum with an exposure time of 100 s). Under real circumstances (for exposure time, eye pupils, observation distance), it is assumed that no endangerment to the eye exists from these devices.

As a matter of principle, however, it should be mentioned that intense light sources have a high secondary exposure potential due to their blinding effect. It is also true when viewing other bright light sources (e.g. headlights), temporary reduction in visual acuity and afterimages can occur, leading to irritation, annoyance, visual impairment, and even accidents, depending on the situation.

专利列表 / Patent List

专利号 / Patent No.
US 6 066 861
US 6 277 301
US 6 245 25

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生命支持装置或系统所采用的元件必须获取该目的的明确授权！仅当获得欧司朗公司的明确书面许可时，方可将关键元件[第 18 页 9)]用于生命支持装置或系统[第 18 页 10)]。

Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components[9) page 18] may only be used in life-support devices or systems[10) page 18] with the express written approval of OSRAM OS.

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备注：

1) 亮度组的测试电流脉冲时长为 25 ms，容差为 ±11%。

2) 由于 LED 制造工艺的条件特殊，典型或计算得出的技术参数数据仅能反映统计数据，而不等同于各产品的实际参数，它们可能与典型或计算得出的典型特征线数据不同。如果需要（如由于技术改进），这些典型数据将有所变更，恕不另行通知

3) -

4) 正向电压的测试电流脉冲时长为 1 ms，容差为 ±0.1 V。

5) 色度坐标组的测试电流脉冲时长为 25 ms，容差为 ±0.01。

6) 正向电压的测试电流脉冲时长为 1 ms，容差为 ±0.1 V。

7) 在虚线范围内，单个包装单元内的不同 LED 之间的明暗差别会更大。

8) 尺寸单位指定为：mm（英寸）

9) 关键元件指用在生命支持装置或系统中，一旦发生故障即会引起装置或系统故障或影响其安全性或有效性的元件。

10) 生命支持装置或系统拟用于 (a) 植入人体或 (b) 支持和/或维持人的生命。如果发生故障，即会威胁使用者的健康和生命。

Remarks:

1) Brightness groups are tested at a current pulse duration of 25 ms and a tolerance of □ 11%.

2) Due to the special conditions of the manufacturing processes of LED, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.

3) -

4) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ±0.1 V.

5) Chromaticity coordinate groups are tested at a current pulse duration of 25 ms and a tolerance of ±0.01.

6) Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ±0.1 V.

7) In the range where the line of the graph is broken, you must expect higher brightness differences between single LEDs within one packing unit.

8) Dimensions are specified as follows: mm (inch).

9) A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or the effectiveness of that device or system.

10) Life support devices or systems are intended
(a) to be implanted in the human body,
or
(b) to support and/or maintain and sustain human life.
If they fail, it is reasonable to assume that the health and the life of the user may be endangered

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