

OSRAM SU CULFP1.VC

产品规格书

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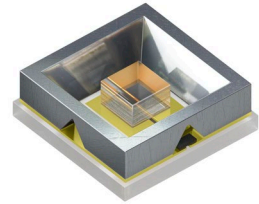
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OSLON® UV 3535

SU CULFP1.VC

这种紧凑的UV-C LED是OSLON UV系列的一部分。
它可以为需要UV-C辐射的任何应用提供灵活的设计。



应用

- UV-C处理
- 农业和植物照明

特点

- 封装: 陶瓷封装
- 芯片技术: UV Flip chip
- 颜色: $\lambda_{\text{peak}} = 265 \text{ nm}$ (• ultraviolet (UV-C))
- ESD: 5 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM)
- Typ. Radiation: 120° (0°), 120° (90°)
- Radiant Flux: typ. 115 mW
- Radiant Efficiency: typ. 5.3 %

订购信息

型号	总辐射通量 ¹⁾ $I_F = 350 \text{ mA}$ Φ_E	订单码
SU CULFP1.VC-CBCF-45-1	90 ... 140 mW	Q65113A4412

UV-C 风险类别 3



警告本产品会发出 UV-C紫外线
避免眼睛和皮肤接触未屏蔽的产品。
按照安装说明和用户手册进行操作

最大额定

参数	图形符号		值
工作温度	T_{op}	最小值	-40 °C
		最大值	85 °C
储存温度	T_{stg}	最小值	-40 °C
		最大值	100 °C
结温	T_j	最大值	100 °C
正向电流 $T_s = 25\text{ °C}$	I_F	最小值	100 mA
		最大值	500 mA
浪涌电流 $t \leq 0.1\text{ ms}; D = 10\%; T_s = 25\text{ °C}$	I_{FS}	最大值	700 mA
ESD耐受电压 acc. to ANSI/ESDA/JEDEC JS-001 (HBM)	V_{ESD}		5 kV
反向电压 ²⁾	V_R		Not designed for reverse operation

特性

$I_F = 350 \text{ mA}; T_s = 25 \text{ }^\circ\text{C}$

参数	图形符号	值
峰值波长 ³⁾	λ_{peak}	最小值 260 nm 典型值 265 nm 最大值 270 nm
正向电压 ⁴⁾ $I_F = 350 \text{ mA}$	V_F	最小值 5.5 V 典型值 6.2 V 最大值 6.5 V
反向电流 ²⁾	I_R	Not designed for reverse operation
实际热阻 PN结/焊点 ⁵⁾	$R_{\text{thJS real}}$	典型值 5.6 K / W
电热阻 PN结/焊点 with efficiency $\eta_e = 4.87 \%$	$R_{\text{thJS elec.}}$	典型值 5.3 K / W

亮度组

组	总辐射通量 ¹⁾ $I_F = 350 \text{ mA}$ 最小值 Φ_E	总辐射通量 ¹⁾ $I_F = 350 \text{ mA}$ 最大值 Φ_E
CB	90 mW	100 mW
CC	100 mW	110 mW
CD	110 mW	120 mW
CE	120 mW	130 mW
CF	130 mW	140 mW

正向电压组

组	正向电压 ⁴⁾ $I_F = 350 \text{ mA}$ 最小值 V_F	正向电压 ⁴⁾ $I_F = 350 \text{ mA}$ 最大值 V_F
V3	5.5 V	6.0 V
V4	6.0 V	6.5 V

波长组

组	峰值波长 ³⁾ 最小值 λ_{peak}	峰值波长 ³⁾ 最大值 λ_{peak}
4	260 nm	265 nm
5	265 nm	270 nm

标签信息

示例: CB-4-V3

亮度组

波长

正向电压组

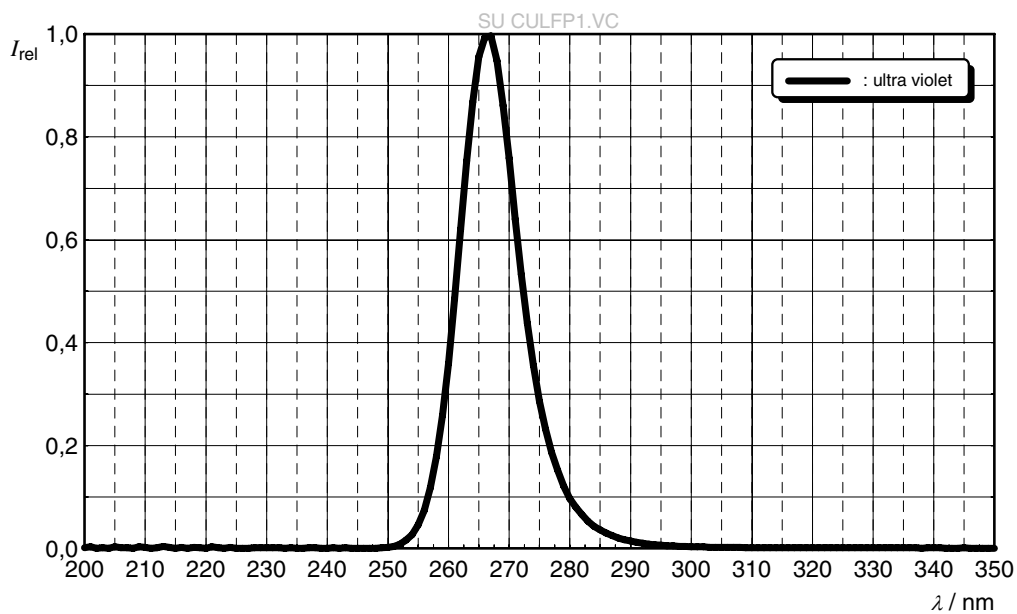
CB

4

V3

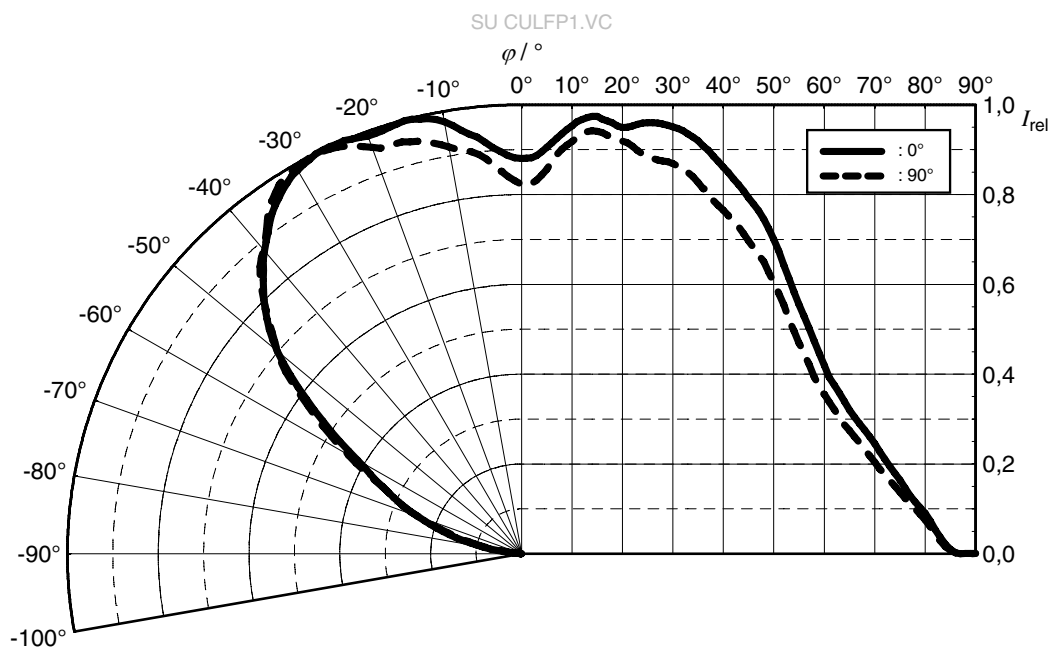
相对光谱发射 ⁶⁾

$I_{rel} = f(\lambda); I_F = 350 \text{ mA}; T_S = 25 \text{ }^\circ\text{C}$



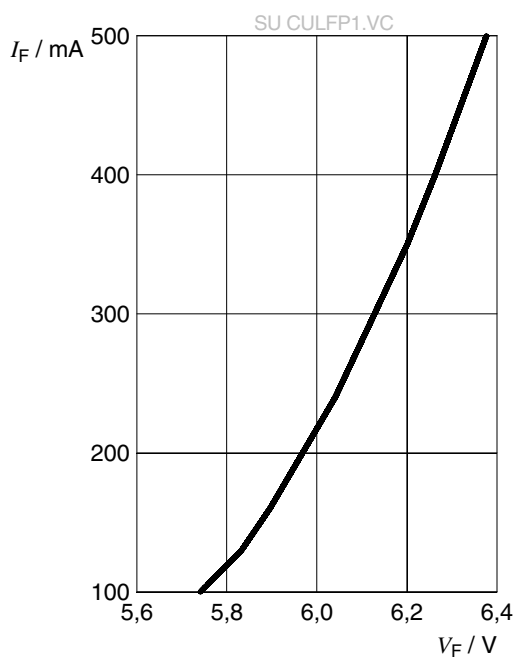
辐射特性 ⁶⁾

$I_{rel} = f(\varphi); T_S = 25 \text{ }^\circ\text{C}$



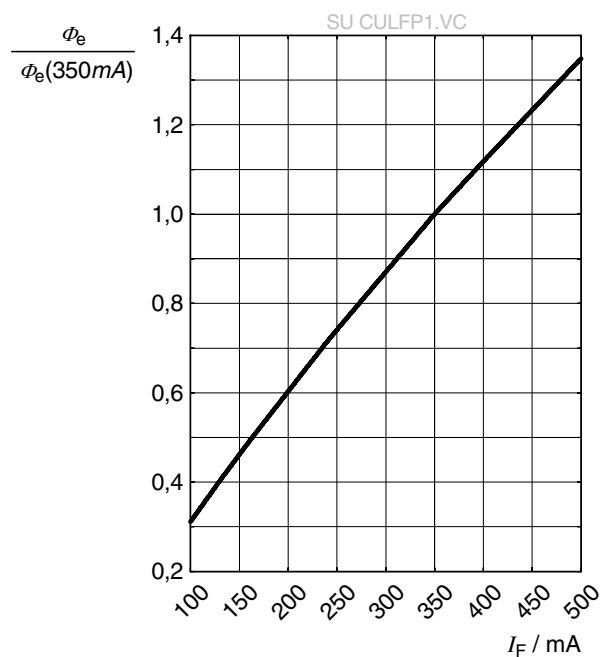
正向电流 ⁶⁾

$$I_F = f(V_F); T_S = 25\text{ }^\circ\text{C}$$



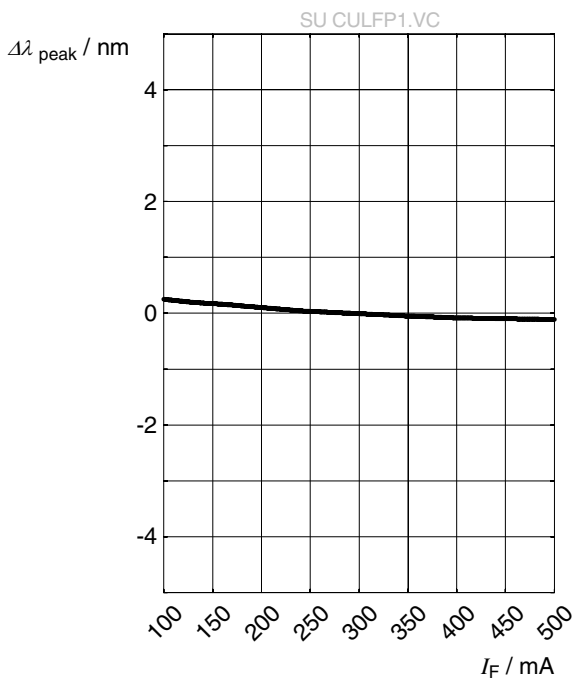
相对辐射功率 ^{6), 7)}

$$\Phi_E / \Phi_E(350\text{ mA}) = f(I_F); T_S = 25\text{ }^\circ\text{C}$$



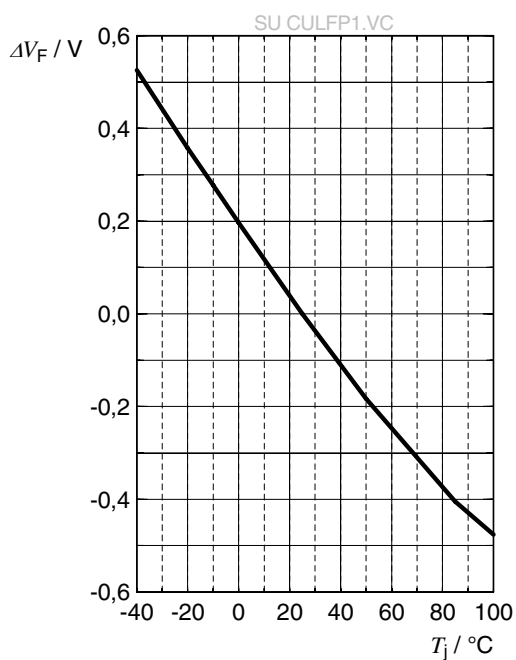
峰值波长 ⁶⁾

$$\lambda_{\text{peak}} = f(T_j); I_F = 350\text{ mA}$$



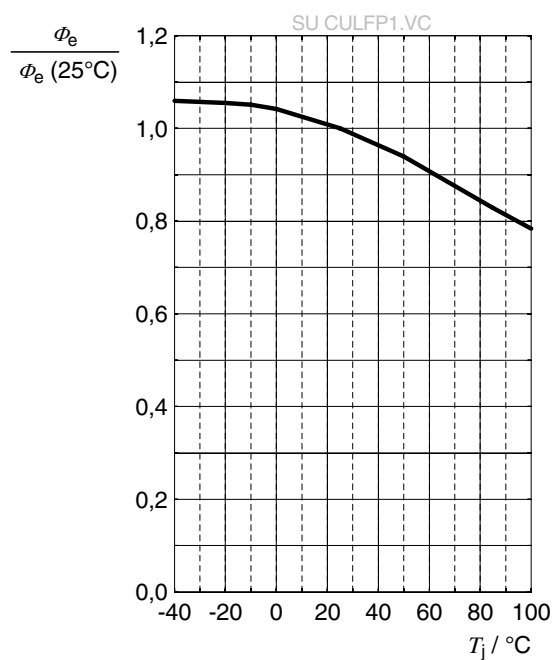
正向电压 ⁶⁾

$$\Delta V_F = V_F - V_F(25\text{ }^\circ\text{C}) = f(T_j); I_F = 350\text{ mA}$$



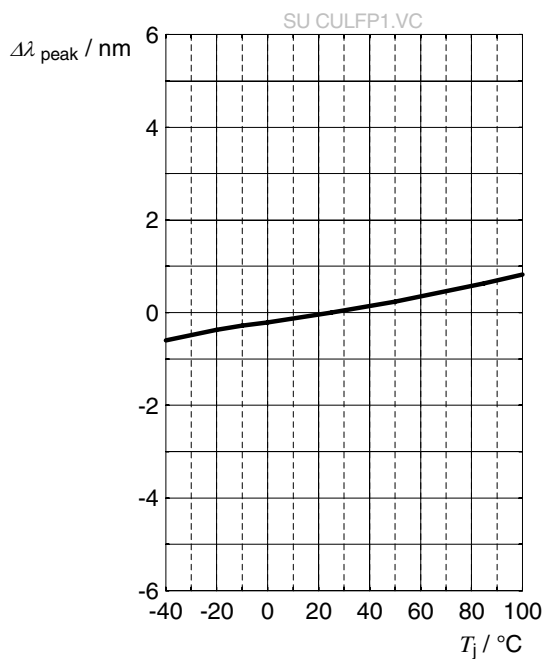
相对辐射功率 ⁶⁾

$$\Phi_E / \Phi_E(25\text{ }^\circ\text{C}) = f(T_j); I_F = 350\text{ mA}$$



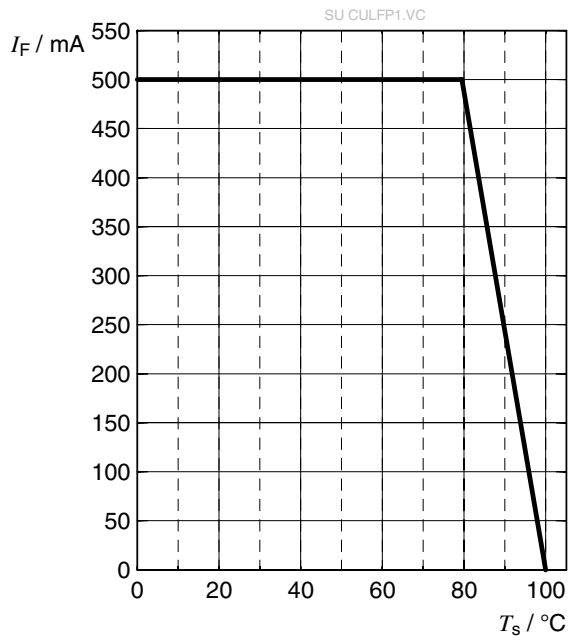
峰值波长 ⁶⁾

$$\lambda_{\text{peak}} = f(T_j); I_F = 350\text{ mA}$$

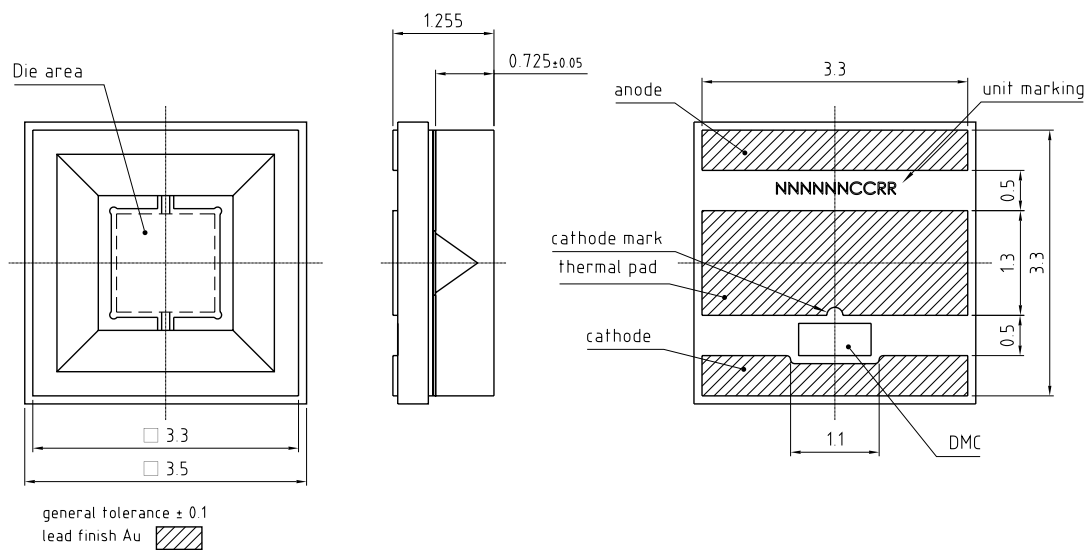


最大容许正向电流 ⁵⁾

$$I_F = f(T)$$



尺寸图 8)



C67062-A0461-A1-04

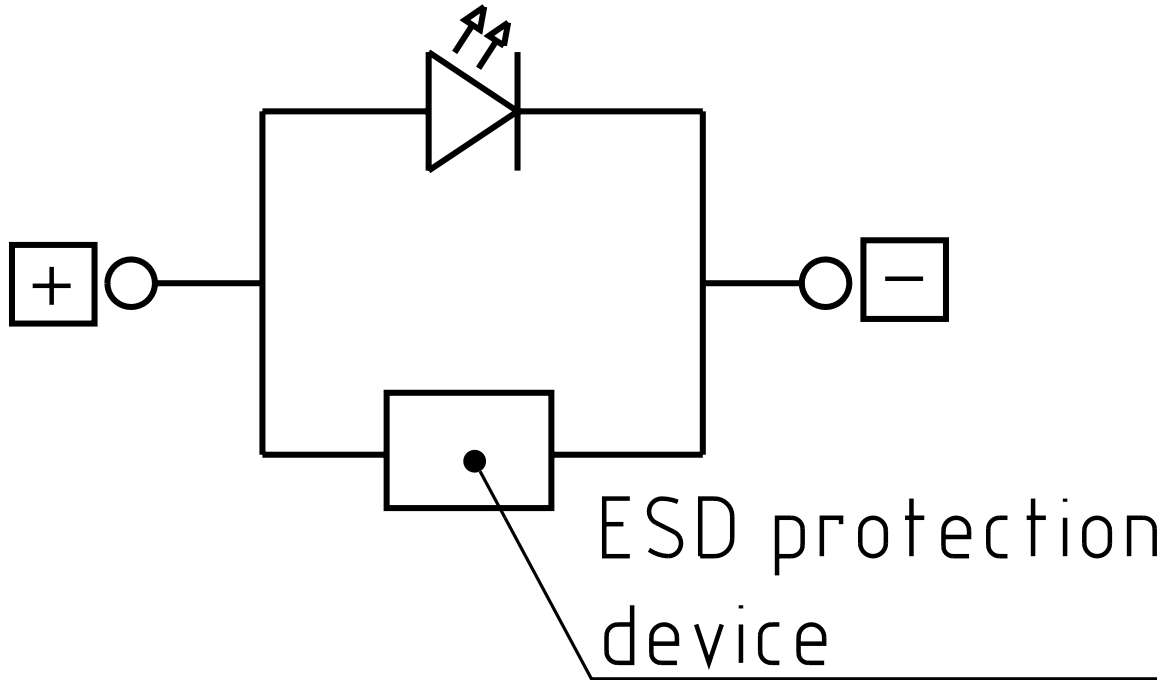
备注:

近似重量: 36.0 mg

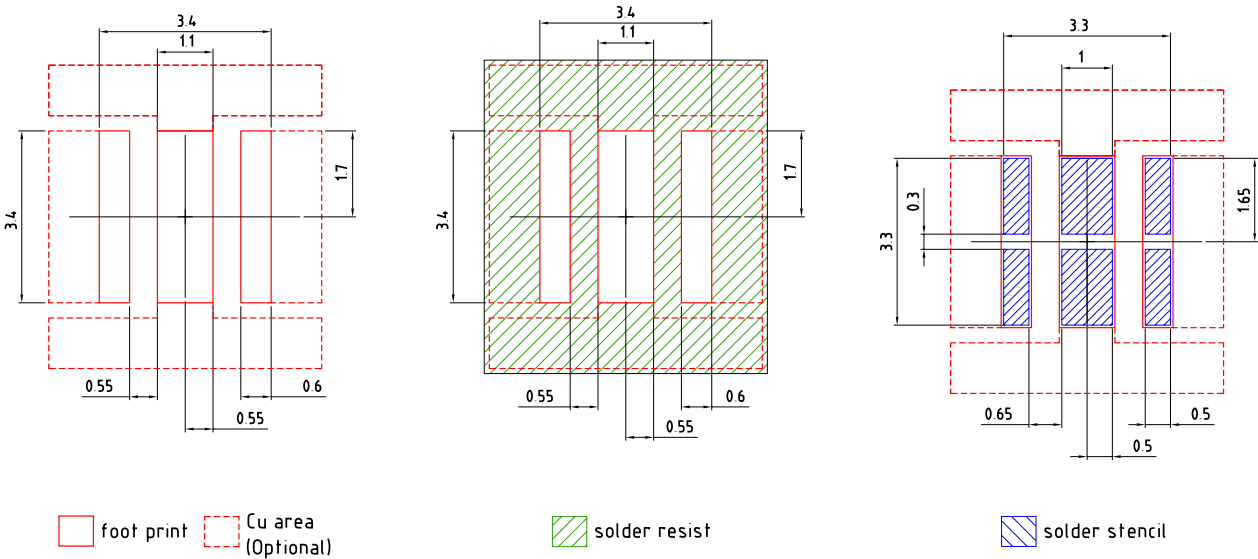
包装信息: 负极

ESD建议: LED is protected by ESD device which is connected in parallel to LED-Chip.

内部电子电路



推荐焊盘 8)

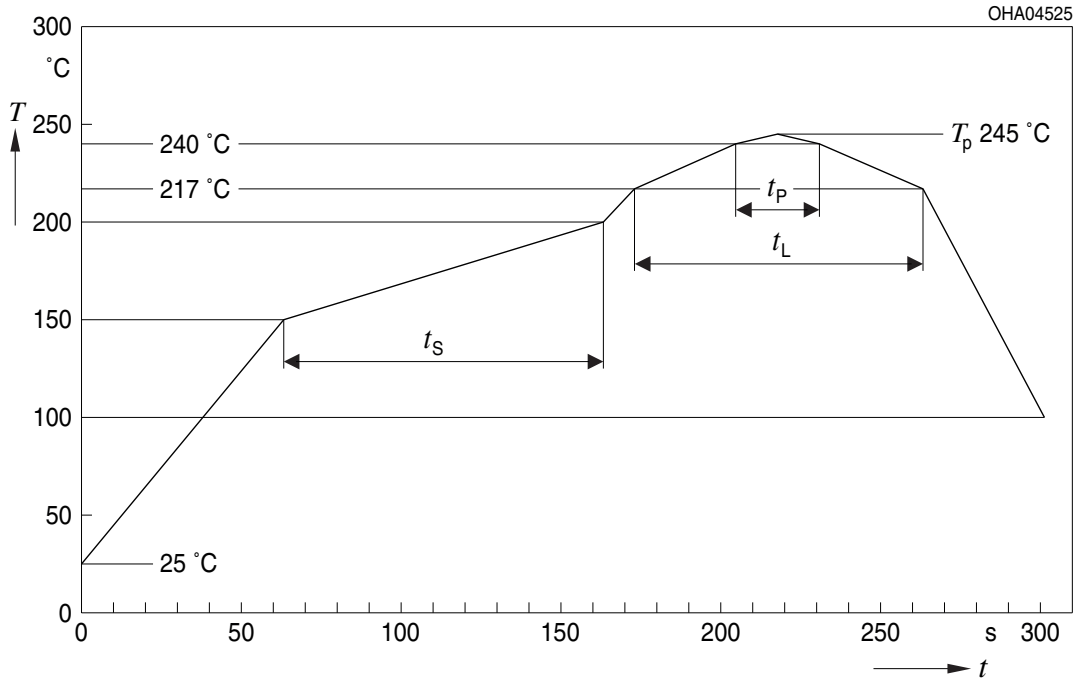


E067.0346.22-01

为了获得最佳的焊点连接效果，我们建议在标准氮气环境下进行焊接。更多信息，请参阅我们的应用说明：陶瓷封装LED的操作和工艺详情 不适合任何类型的湿式清洁或超声波清洁的封装。

回流焊曲线

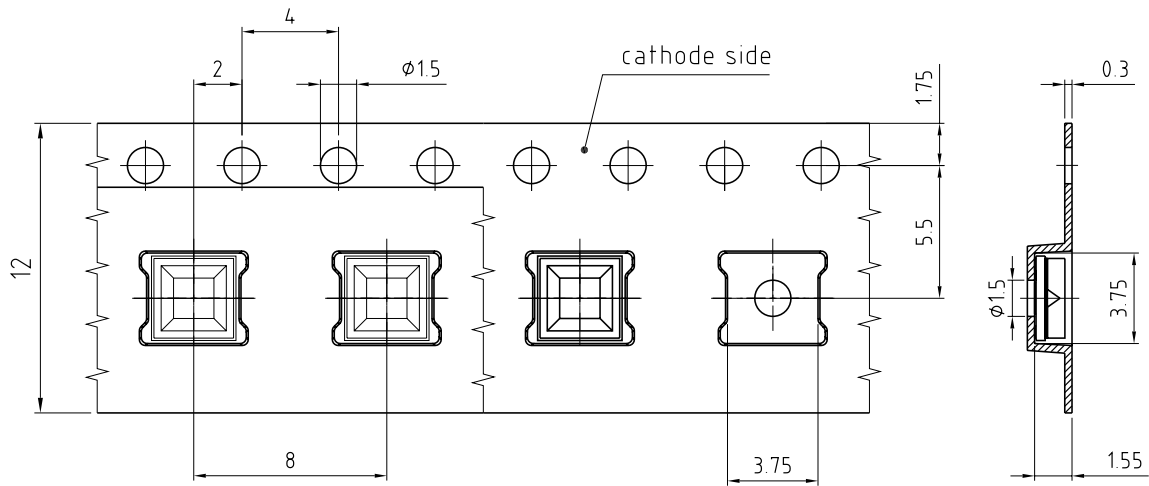
根据JEDEC J-STD-020E, 产品符合MSL等级 2



曲线特征	符号	无铅组装			单位
		最小值	推荐值	最大值	
预热升温速率 ¹⁾ 25 °C 至 150 °C			2	3	K/s
时间 t_s T_{Smin} 至 T_{Smax}	t_s	60	100	120	s
峰值升温速率 ¹⁾ T_{Smax} 至 T_p			2	3	K/s
液相线温度	T_L		217		°C
超过液相线温度的时间	t_L		80	100	s
峰值温度	T_p		245	260	°C
温度保持在指定峰值温度 $T_p - 5$ K 的 5 °C 范围内的时间	t_p	10	20	30	s
降温速率* T_p 至 100 °C			3	6	K/s
时间 25 °C 至 T_p				480	s

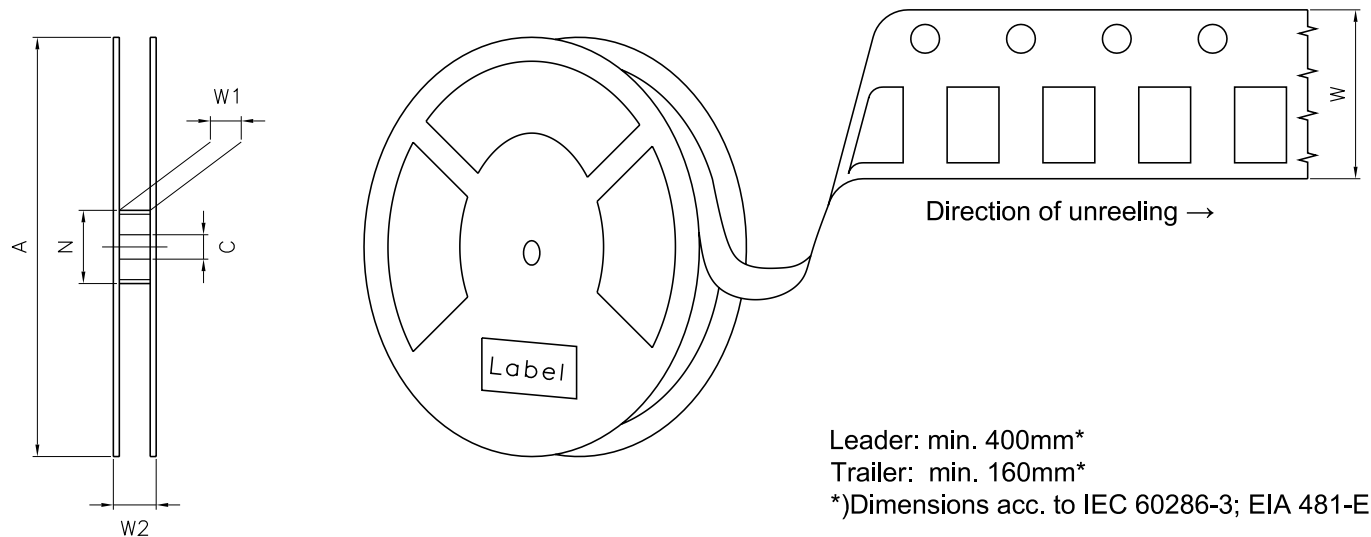
所有温度均指从元件顶部测得的封装中心温度
* 斜率计算 DT/Dt : Dt 最大值为 5 s; 涵盖整个 T 范围

编带机 8)



C67062-A0461-B4 -03

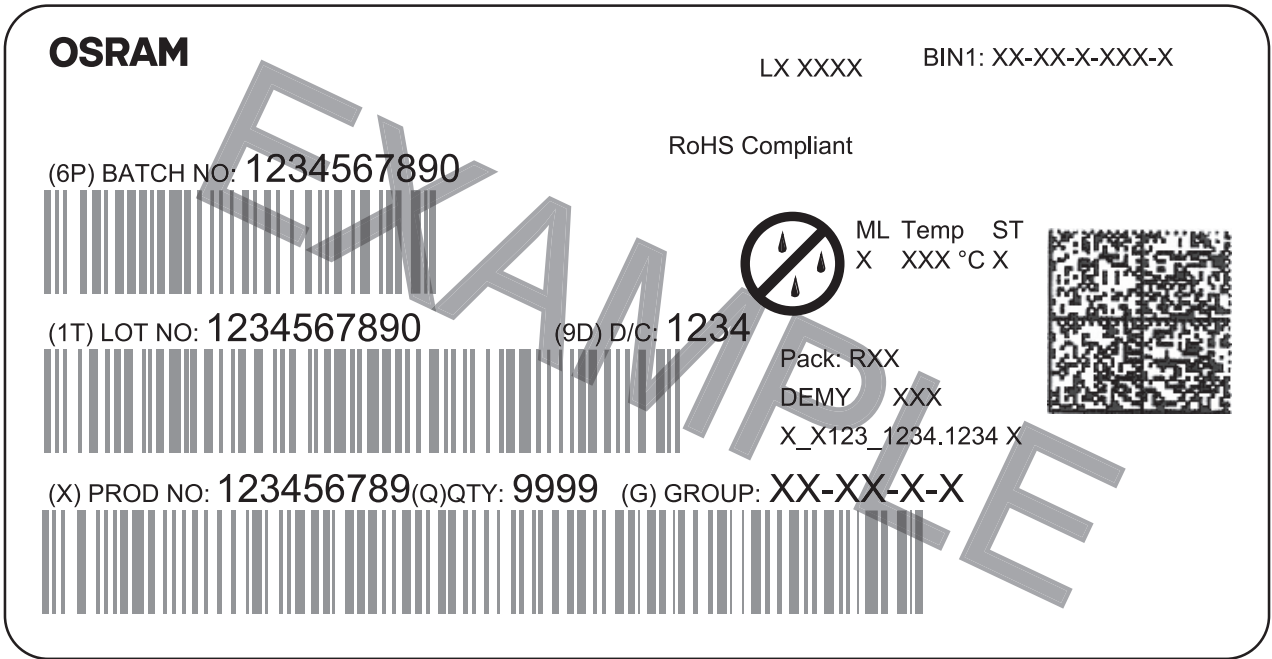
编带和卷带 ⁹⁾



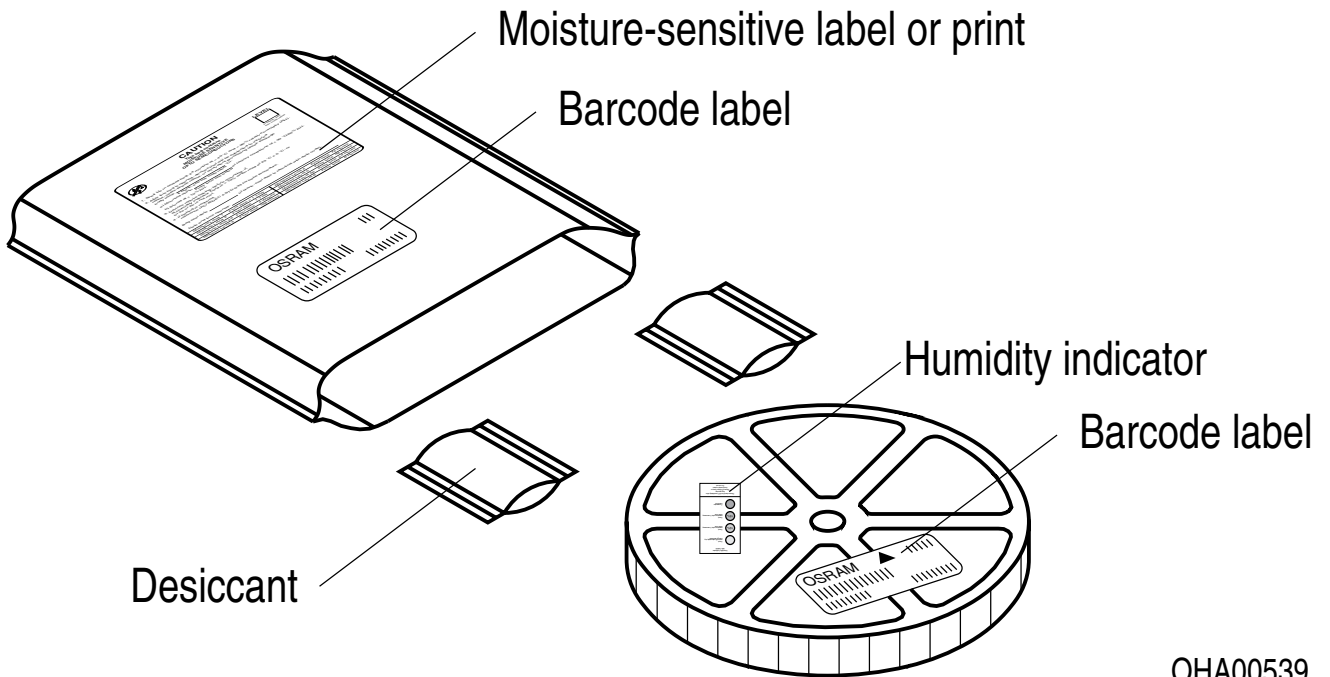
盘尺寸

A	W	N_{min}	W_1	W_{2max}	每卷带上的数量
180 mm	$12 + 0.3 / - 0.1$ mm	60 mm	$12.4 + 2$ mm	18.4 mm	500

条形码-产品-标签 (BPL)



干燥包装工艺和材料 ⁸⁾



根据JEDEC-STD-33,湿敏产品包装在一个干燥的袋子中, 包含干燥剂和湿度卡.

备注

该光生物安全性的评估是根据IEC 62471 : 2006标准进行的 (灯和灯系统的光生物安全性)。在此IEC标准的风险分组系统中,本规格书中指定的器件属于**高风险类别 3**。警告-该产品会发出紫外线。请避免眼睛和皮肤接触未屏蔽的产品。

除其他物质外,该器件的子组件还包含金属填充材料,包括银。金属填充材料可能会受到含残留侵蚀性物质的环境的影响。因此,我们建议客户在存储、生产和使用过程中尽量少将器件暴露于腐蚀性物质环境中。当使用上述测试条件进行测试时,器件在规定的测试持续时间内表现出了颜色的变化,但其各项性能的变化均未超出失效极限的定义。IEC60810中描述了相关的各项失效极限。

根据 JEDEC 46C文件的产品更改管理方法。该物性表的更新不会进行另行通知。

由于芯片技术的革新周期非常快速,该产品会经常性的采用最新的芯片技术。

更多的应用信息,请访问 <https://ams-osram.com/support/application-notes>

免责声明

Attention please!

The information describes the type of component and shall not be considered as assured characteristics. Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.

For information on the types in question please contact our Sales Organization.

If printed or downloaded, please find the latest version on our website.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Product and functional safety devices/applications or medical devices/applications

Our components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.

Our products are not qualified at module and system level for such application.

An entire (100%) testing shall be performed after assembly of our product to the final product. Our products are not qualified at module and system level for such application. Customer is fully responsible and accountable for detection capability in case of sudden changes in electro-optical characteristics at component level.

In case buyer – or customer supplied by buyer – considers using our components in product safety devices/applications or medical devices/applications, buyer and/or customer has to inform our local sales partner immediately and we and buyer and/or customer will analyze and coordinate the customer-specific request between us and buyer and/or customer.

Please carefully read the below instructions.

WARNING: Each user bears full responsibility for making their own determination as to the suitability of our products, recommendations or advice for its own end use. Each user must identify and perform all tests and analyses necessary to ensure that its finished application incorporating our products will be safe and suitable for use under end-use conditions. We make no warranty or guarantee, express or implied, as to results obtained in end-use, nor of any design incorporating its products, recommendations or advice.

WARNING: High intensity ultraviolet-C (UV-C) radiation is emitted from this product, which is harmful to skin and eyes. Take appropriate protective measures to avoid any exposure to direct or reflected UV-C radiation.

WARNING: During operating lifetime of our UV-C product different aging mechanisms can cause failures. This may lead to a significant deviation of the function in the final product and application. Please contact us in advance for further information.

词汇表

- 1) **亮度:** 亮度组通常在10 ms电流脉冲持续时间内进行测试，公差为 $\pm 10\%$
- 2) **反向工作:** 并非设计用于反向工作。连续反向工作会导致器件迁移和损坏。
- 3) **峰值波长:** 峰值波长通常在10 ms电流脉冲持续时间内进行测试，公差为 ± 3 nm。
- 4) **正向电压:** 正向电压通常在1 ms电流脉冲持续时间内进行测试，公差为 ± 0.1 V。
- 5) **热电阻:** $R_{th\ max}$ 以统计值 (6σ) 为基础。
- 6) **典型值:** 由于半导体器件制造工艺的特殊条件，技术参数的典型数据或计算相关性只能反映统计数字。这些参数不一定对应每个产品的实际参数，可能不同于产品的典型数据和计算相关性或典型特性线。如有要求（例如由于技术改进），这些典型数据会被更改，恕不另行通知。
- 7) **特性曲线:** 如图形线段断开，即可预期同一封装单元内的单个器件之间的差异会较大。
- 8) **测量公差:** 除非图纸中另有说明，公差表示为 ± 0.1 ，尺寸表示为mm。
- 9) **编带和卷料:** 所有尺寸和公差均遵循IEC 60286-3，单位为mm。

修订历史

版本	日期	修改
1.0	2024-10-07	初始版本
1.1	2024-10-22	回流焊波形



EU RoHS and China RoHS compliant product

此产品符合欧盟 RoHS 指令的要求；
按照中国的相关法规和标准，
不含有毒有害物质或元素。

Published by ams-OSRAM AG

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