

## GW JDSMS1.PC



The DURIS® E 5 combines high efficacy and a wide beam angle into a compact format (5.6 mm x 3.0 mm). This is key to homogeneous illumination applications where the DURIS® E 5 never fails to impress with its performance on system level.

### Features:

- **Package:** white SMT package, colored diffused silicone resin
- **Viewing angle at 50 % I<sub>v</sub>:** 120°
- **Color:** 3000 K - 6500 K ( white )
- **CRI:** min. 70
- **Luminous Flux:** typ. 48 lm @ 5000 K
- **Luminous efficacy:** typ. 127 lm/W @ 5000 K

### Applications

- Retrofits and fixtures
- Task lights

DURIS® E 5 在一个紧凑的封装尺寸 ( 5.6 毫米 x3.0 毫米 ) 内同时具备高发光效率和宽发光角度, 这是 DURIS® E 5 实现高性能系统设计和均匀照明应用的关键。

### 性能:

- **封装:** 白色贴片式, 色散硅树脂
- **视角 at 50 % I<sub>v</sub>:** 120°
- **色温:** 3000 K - 6500 K ( 白色 )
- **显色指数:** min. 70
- **典型光通量:** typ. 48 lm @ 5000 K
- **发光效率:** typ. 127 lm/W @ 5000 K

### 应用

- 替换灯和灯具
- 工作灯

## Ordering Information 订购信息

Type: 类型 :	Color Temperature 色温 [K]	Luminous Intensity <sup>1) page 24</sup> 发光强度 <sup>1) 第 24</sup> $I_F = 120 \text{ mA}$ $I_V [\text{mcd}]$	Ordering Code 订购代码
GW JDSMS1.PC-FTGP-5C8E-L1N2	6500	15000 ... 19400	Q65111A5428
GW JDSMS1.PC-FTGP-5E8G-L1N2	5700	15000 ... 19400	in process
GW JDSMS1.PC-FTGP-5H7I-L1N2	5000	15000 ... 19400	Q65111A5427
GW JDSMS1.PC-FTGP-5L7N-L1N2	4000	15000 ... 19400	Q65111A5431
GW JDSMS1.PC-FSFU-5L7N-L1N2	4000	14000 ... 18000	Q65111A5377
GW JDSMS1.PC-FTGP-5R8T-L1N2	3000	15000 ... 19400	Q65111A5430
GW JDSMS1.PC-FSFU-5R8T-L1N2	3000	14000 ... 18000	Q65111A5429

*Note: The above Type Numbers represent the order groups which include only a few brightness groups (see page ). Only one group will be shipped on each packing unit (there will be no mixing of two groups on each packing unit). E. g. GW JDSMS1.PC-FTGP-5H7I-L1N2 means that only one group FT, FU, GP will be shippable for any packing unit. In order to ensure availability, single brightness groups will not be orderable.*

*In a similar manner for colors where color chromaticity coordinate groups are measured and binned, single groups will be shipped on any one packing unit. GW JDSMS1.PC-FTGP-5H7I-L1N2 means that the device will be shipped within the specified limits. In order to ensure availability, single color chromaticity groups will not be orderable (see page ).*

*In a similar manner for colors where forward voltage groups are measured and binned, single forward voltage groups will be shipped on any packing unit. E. g. GW JDSMS1.PC-FTGP-5H7I-L1N2 means that only one forward voltage group L1,L2,M1,M2,N1,N2 will be shippable. In order to ensure availability, single forward voltage groups will not be orderable (see page ).*

**注释：** 上述类型编号代表仅包含几个亮度组的订购组（参见第 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，GW JDSMS1.PC-FTGP-5H7I-L1N2 表示任何一个卷盘上仅可装运一个亮度组：FT, FU, GP。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，GW JDSMS1.PC-FTGP-5H7I-L1N2 表示仅可装运特定范围内的一个色度坐标组（参见第 页）。为了确保可用性，单个色度坐标组将不接受订购。

同样，对于需要测量和分选正向电压组的 LED，每个卷盘上将仅装运一个正向电压组。例如，GW JDSMS1.PC-FTGP-5H7I-L1N2 表示每卷盘上仅可装运正向电压组 L1,L2,M1,M2,N1,N2 中的一个。为了确保可用性，单个正向电压组将不接受订购（参见第 页）。

## Maximum Ratings

## 最大额定值

Parameter 参数	Symbol 符号	Values 值	Unit 单位
Operating temperature range 工作温度范围	$T_{op}$	-40 ... 85	°C
Storage temperature range 储存温度范围	$T_{stg}$	-40 ... 100	°C
Junction temperature 结点温度	$T_j$	110	°C
Forward current 正向电流 ( $T_S = 25\text{ °C}$ )	$I_F$	180	mA
Surge current 冲击电流 ( $t \leq 10\ \mu\text{s}$ ; $D = 0.005$ ; $T_S = 25\text{ °C}$ )	$I_{FM}$	300	mA
Reverse voltage 反向电压 ( $T_S = 25\text{ °C}$ )	$V_R$	not designed for reverse operation	V
ESD withstand voltage ESD 耐压 (acc. to ANSI/ESDA/JEDEC JS-001 - HBM)	$V_{ESD}$	up to 5	kV

Characteristics ( $T_S = 25\text{ °C}$ ;  $I_F = 120\text{ mA}$ )

特性

Parameter 参数		Symbol 符号	Values 值	Unit 单位
Viewing angle at 50 % $I_V$ 50 % $I_V$ 时的全视角	(typ.)	$2\phi$	120	°
Forward voltage <sup>2) page 24</sup> 正向电压 <sup>2) 第 24</sup>	(min.) (typ.) (max.)	$V_F$ $V_F$ $V_F$	2.80 3.15 3.60	V V V
Reverse current 反向电流		$I_R$	not designed for reverse operation	
Color reproduction index <sup>3) page 24</sup> 显色指数 <sup>3) 第 24</sup>	(min.)	$R_a$	70	-
Real thermal resistance junction / solder point <sup>4) page 24</sup> 结点 - 焊点热阻 <sup>4) 第 24</sup>	(typ.) (max.)	$R_{th\ JS\ real}$ $R_{th\ JS\ real}$	33 53	K/W K/W
"Electrical" thermal resistance junction / solder point <sup>4) page 24</sup> “电学”热阻 (结点 / 焊点) <sup>4) 第 24</sup> (with efficiency $\eta_e = 30\%$ )	(typ.) (max.)	$R_{th\ JS\ el}$ $R_{th\ JS\ el}$	25 40	K/W K/W

Note: Individual forward voltage groups see next page

注释：具体的正向电压分组参见下一页

## Brightness Groups

## 亮度组

Group 组	Luminous Intensity 1) page 24 发光强度 1) 第 24 (min.) $I_V$ [mcd]	Luminous Intensity 1) page 24 发光强度 1) 第 24 (max.) $I_V$ [mcd]	Luminous Flux (extrapolated min.) $\Phi_V$ [mlm]	Luminous Flux (extrapolated max.) $\Phi_V$ [mlm]
FS	14000	15000	41200	44100
FT	15000	16400	44100	48200
FU	16400	18000	48200	52900
GP	18000	19400	52900	57000

Note: The standard shipping format for serial types includes either a lower family group, an upper family group or a grouping of all individual brightness groups of only a few brightness groups. Individual brightness groups cannot be ordered.

The extrapolated typical minimum and maximum values are calculated with a typical  $\Phi_V/I_V$  factor of 2.94. It is to consider that the  $\pm 3\sigma$  range of the  $\Phi_V/I_V$  factor is 2.8 - 3.1.

注释：标准的连续类型的运输形式包括以下几种可能，1) 一部分低亮度等级 2) 一部分高亮度等级 3) 一些混合了两至三个亮度等级。单一的亮度等级是不可以在大批量生产是订购的。

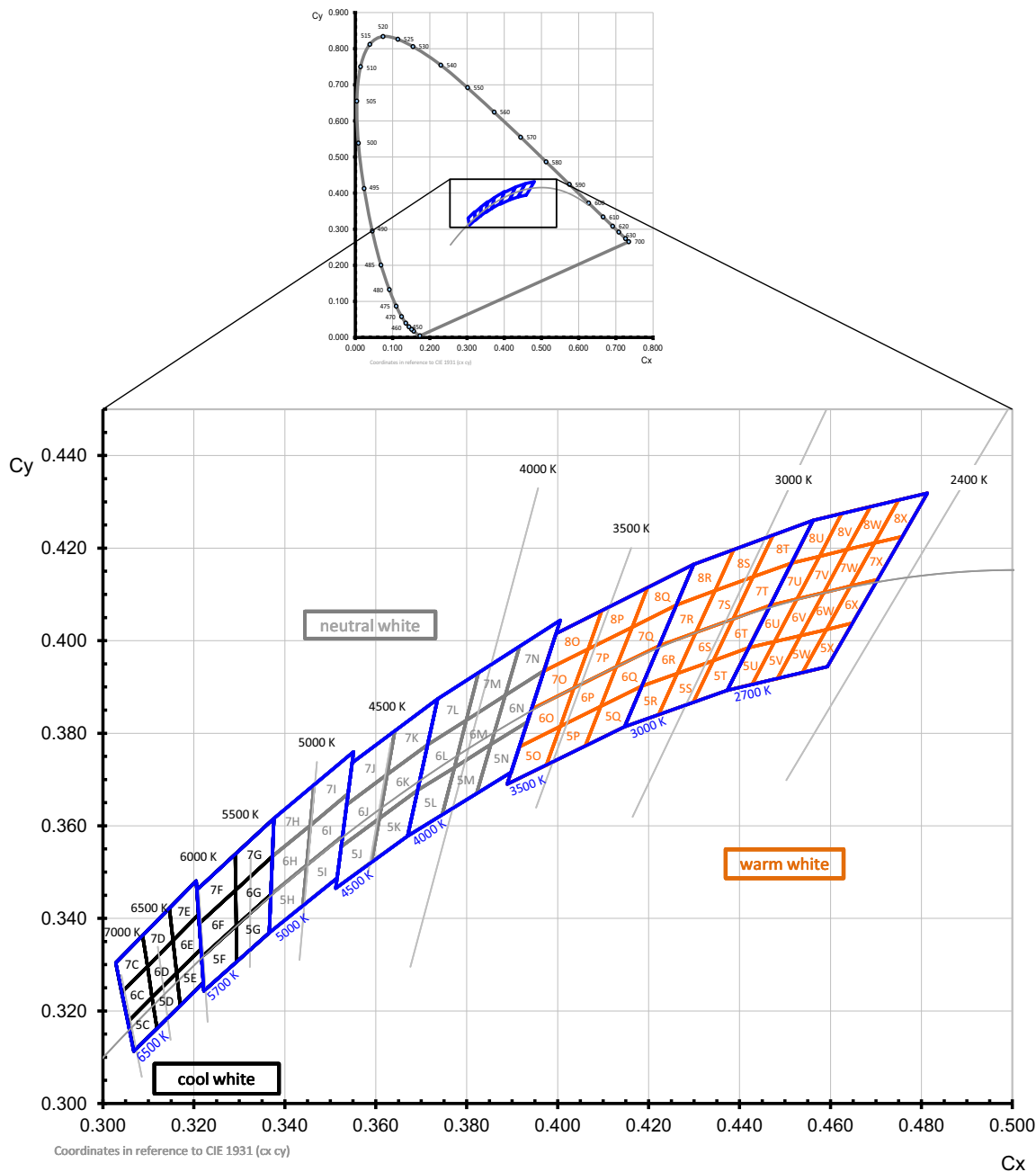
\*典型的最小值和最大值均根据 2.94 的  $\Phi_V/I_V$  典型因数计算得出。假定  $\Phi_V/I_V$  因数  $\pm 3\sigma$  的范围为 2.8 ~ 3.1。

Forward Voltage Groups <sup>2) page 24</sup>正向电压组 <sup>2) 第 24</sup>

Group 组	(min.) $V_F$ [V]	(max.) $V_F$ [V]
L1	2.80	2.90
L2	2.90	3.00
M1	3.00	3.10
M2	3.10	3.20
N1	3.20	3.30
N2	3.30	3.40
P1	3.40	3.50
P2	3.50	3.60

Chromaticity Coordinate Groups <sup>5)</sup> page 24

色坐标分组 <sup>5)</sup> 第 24



Color Chromaticity Groups <sup>5)</sup> page 24色度坐标组 <sup>5)</sup> 第 24

Group 组	Cx	Cy	Group 组	Cx	Cy	Group 组	Cx	Cy
5C	0.3055	0.3177	5G	0.3293	0.3384	5N	0.3822	0.3670
	0.3068	0.3113		0.3294	0.3306		0.3853	0.3776
	0.3108	0.3229		0.3366	0.3369		0.3898	0.3716
	0.3119	0.3162		0.3369	0.3451		0.3934	0.3825
6C	0.3041	0.3240	6G	0.3292	0.3461	6N	0.3853	0.3776
	0.3055	0.3177		0.3293	0.3384		0.3885	0.3882
	0.3098	0.3296		0.3369	0.3451		0.3934	0.3825
	0.3108	0.3229		0.3373	0.3534		0.3970	0.3935
7C	0.3028	0.3304	7G	0.3292	0.3461	7N	0.3885	0.3882
	0.3041	0.3240		0.3292	0.3539		0.3916	0.3987
	0.3087	0.3363		0.3373	0.3534		0.3970	0.3935
	0.3098	0.3296		0.3376	0.3616		0.4006	0.4044
8C	0.3015	0.3368	8G	0.3291	0.3617	5R	0.4147	0.3814
	0.3028	0.3304		0.3292	0.3539		0.4185	0.3902
	0.3076	0.3430		0.3376	0.3616		0.4222	0.3840
	0.3087	0.3363		0.3379	0.3698		0.4263	0.3929
5D	0.3108	0.3229	5H	0.3366	0.3369	6R	0.4185	0.3902
	0.3119	0.3162		0.3369	0.3451		0.4223	0.3990
	0.3162	0.3282		0.3441	0.3428		0.4263	0.3929
	0.3170	0.3212		0.3448	0.3515		0.4305	0.4019
6D	0.3098	0.3296	6H	0.3369	0.3451	7R	0.4223	0.3990
	0.3108	0.3229		0.3373	0.3534		0.4261	0.4077
	0.3154	0.3352		0.3448	0.3515		0.4305	0.4019
	0.3162	0.3282		0.3456	0.3601		0.4346	0.4108
7D	0.3087	0.3363	7H	0.3373	0.3534	8R	0.4261	0.4077
	0.3098	0.3296		0.3376	0.3616		0.4299	0.4165
	0.3146	0.3422		0.3456	0.3601		0.4346	0.4108
	0.3154	0.3352		0.3464	0.3688		0.4387	0.4197

Group 组	Cx	Cy	Group 组	Cx	Cy	Group 组	Cx	Cy
8D	0.3076	0.3430	5I	0.3441	0.3428	5S	0.4222	0.3840
	0.3087	0.3363		0.3448	0.3515		0.4263	0.3929
	0.3138	0.3492		0.3515	0.3487		0.4298	0.3867
	0.3146	0.3422		0.3527	0.3578		0.4342	0.3957
5E	0.3162	0.3282	6I	0.3448	0.3515	6S	0.4263	0.3929
	0.3170	0.3212		0.3456	0.3601		0.4305	0.4019
	0.3216	0.3334		0.3527	0.3578		0.4342	0.3957
	0.3221	0.3262		0.3539	0.3669		0.4386	0.4048
6E	0.3154	0.3352	7I	0.3456	0.3601	7S	0.4305	0.4019
	0.3162	0.3282		0.3464	0.3688		0.4346	0.4108
	0.3210	0.3408		0.3539	0.3669		0.4386	0.4048
	0.3216	0.3334		0.3551	0.3760		0.4430	0.4138
7E	0.3146	0.3422	5L	0.3670	0.3578	8S	0.4346	0.4108
	0.3154	0.3352		0.3692	0.3677		0.4387	0.4197
	0.3205	0.3481		0.3746	0.3624		0.4430	0.4138
	0.3210	0.3408		0.3773	0.3726		0.4474	0.4228
8E	0.3138	0.3492	6L	0.3692	0.3677	5T	0.4298	0.3867
	0.3146	0.3422		0.3714	0.3775		0.4342	0.3957
	0.3200	0.3554		0.3773	0.3726		0.4373	0.3893
	0.3205	0.3481		0.3799	0.3828		0.4420	0.3985
5F	0.3217	0.3316	7L	0.3714	0.3775	6T	0.4342	0.3957
	0.3222	0.3243		0.3736	0.3874		0.4386	0.4048
	0.3293	0.3384		0.3799	0.3828		0.4420	0.3985
	0.3294	0.3306		0.3826	0.3931		0.4468	0.4077
6F	0.3212	0.3389	5M	0.3746	0.3624	7T	0.4386	0.4048
	0.3217	0.3316		0.3773	0.3726		0.4430	0.4138
	0.3292	0.3461		0.3822	0.3670		0.4468	0.4077
	0.3293	0.3384		0.3853	0.3776		0.4515	0.4168
7F	0.3206	0.3462	6M	0.3773	0.3726	8T	0.4430	0.4138
	0.3212	0.3389		0.3799	0.3828		0.4474	0.4228
	0.3292	0.3461		0.3853	0.3776		0.4515	0.4168
	0.3292	0.3539		0.3885	0.3882		0.4562	0.4260



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Group 组	Cx	Cy	Group 组	Cx	Cy	Group 组	Cx	Cy
8F	0.3201	0.3534	7M	0.3799	0.3828			
	0.3206	0.3462		0.3826	0.3931			
	0.3291	0.3617		0.3885	0.3882			
	0.3292	0.3539		0.3916	0.3987			

**Group Name on Label****标签上的组名**

Example: FT-5H-L1

示例：FT-5H-L1

Brightness 亮度组	Chromaticity Coordinate 色度坐标组	Forward Voltage 正向电压
FT	5H	L1

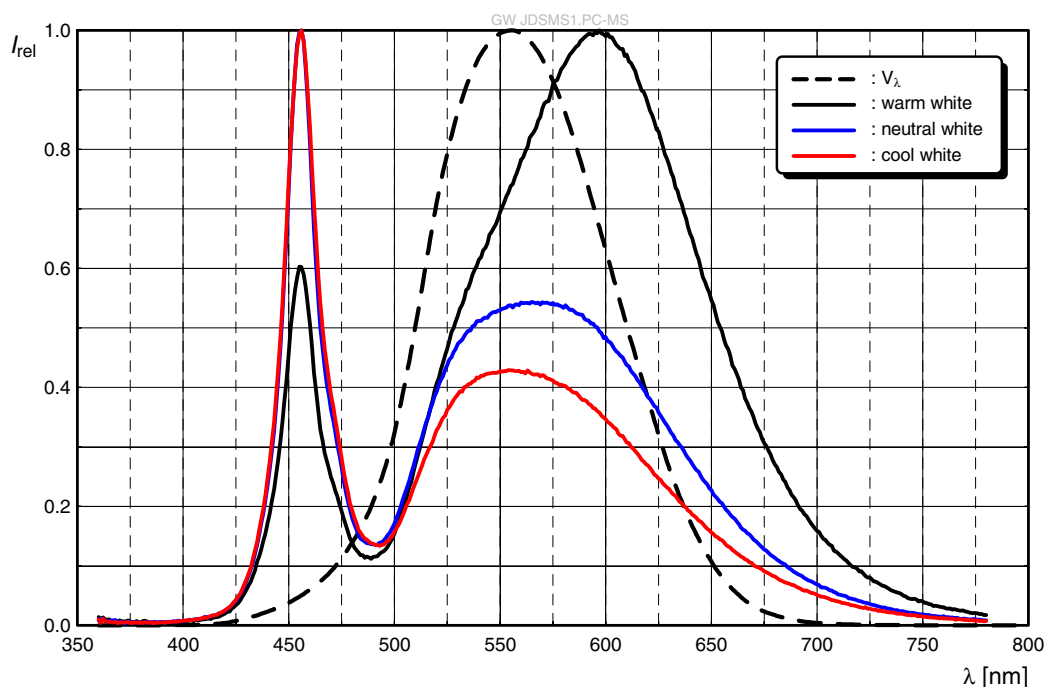
*Note: No packing unit / tape ever contains more than one group for each selection.*

*注释：任何一个单独包装都只包括一个亮度和颜色的分组*

Relative Spectral Emission -  $V(\lambda) = \text{Standard eye response curve}$  <sup>6) page 24</sup>

相对辐射光谱 <sup>6) 第 24</sup>

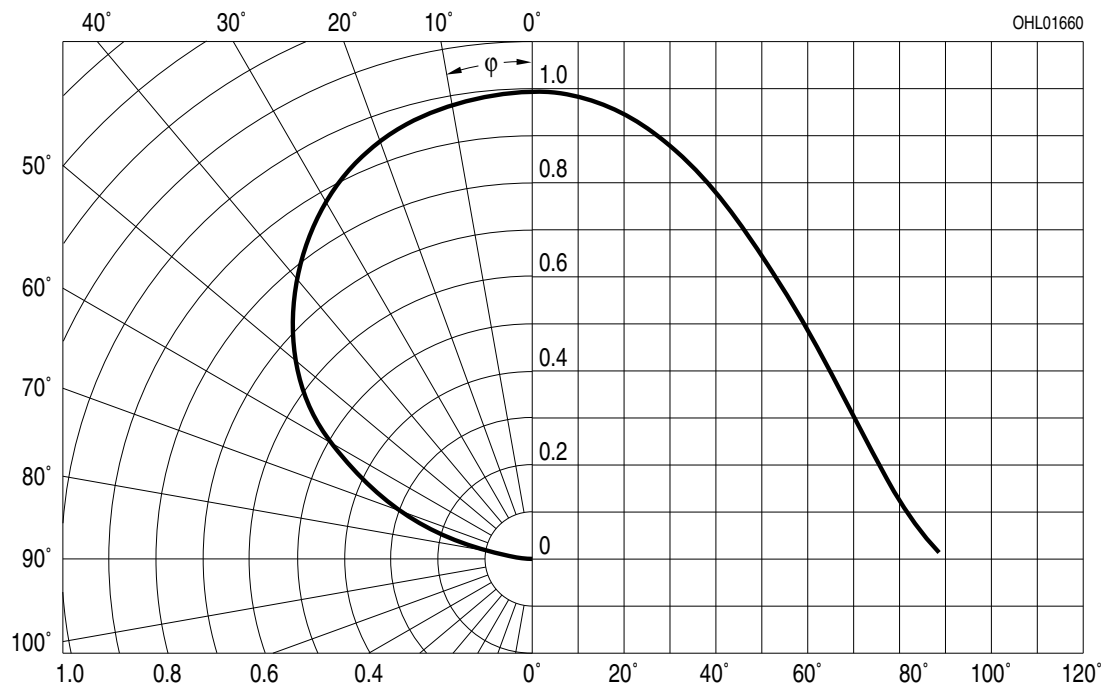
$I_{rel} = f(\lambda); T_S = 25\text{ }^\circ\text{C}; I_F = 120\text{ mA}$



Radiation Characteristics <sup>6) page 24</sup>

配光曲线 <sup>6) 第 24</sup>

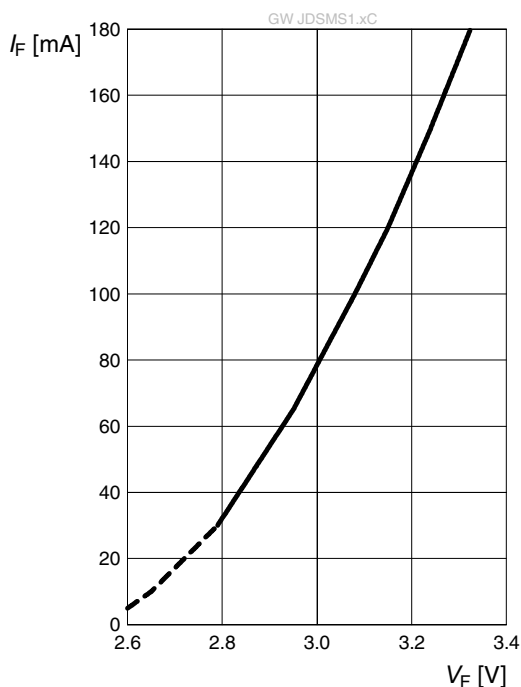
$I_{rel} = f(\phi); T_S = 25\text{ }^\circ\text{C}$



Forward Current <sup>6) page 24</sup>

正向电流 <sup>6) 第 24</sup>

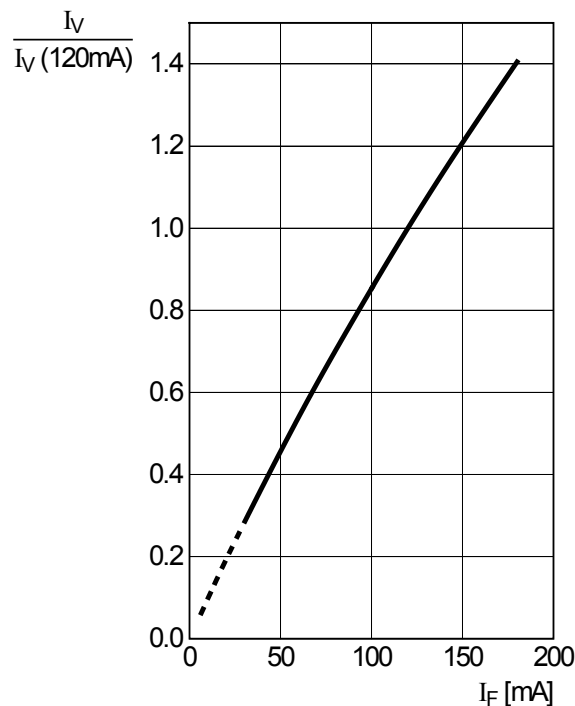
$I_F = f(V_F); T_S = 25\text{ }^\circ\text{C}$



Relative Luminous Intensity <sup>6) page 24</sup>

相对发光强度 <sup>6) 第 24</sup>

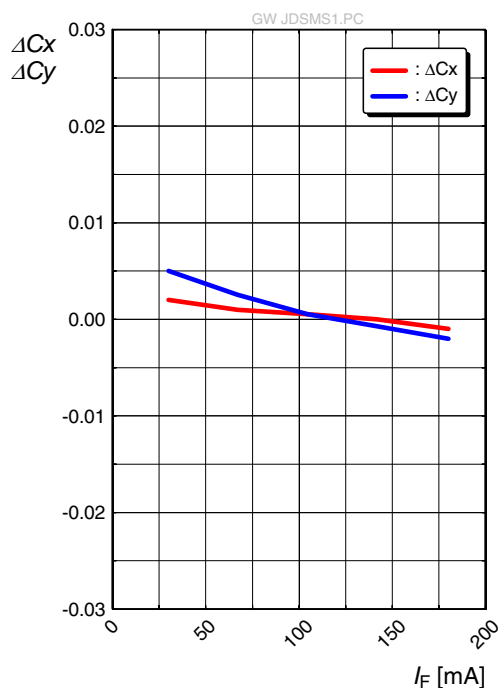
$I_V/I_V(120\text{ mA}) = f(I_F); T_S = 25\text{ }^\circ\text{C}$



Chromaticity Coordinate Shift <sup>6) page 24</sup>

色度坐标偏移 <sup>6) 第 24</sup>

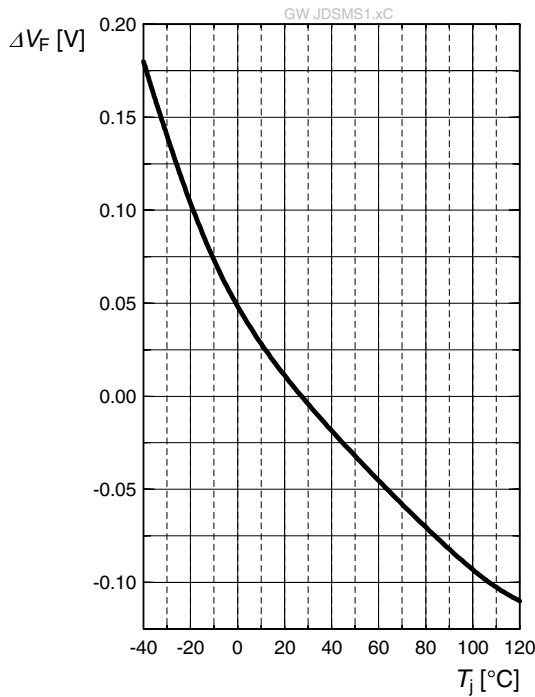
$\Delta C_x, \Delta C_y = f(I_F); T_S = 25\text{ }^\circ\text{C}$



Relative Forward Voltage <sup>6) page 24</sup>

相对正向电压 <sup>6) 第 24</sup>

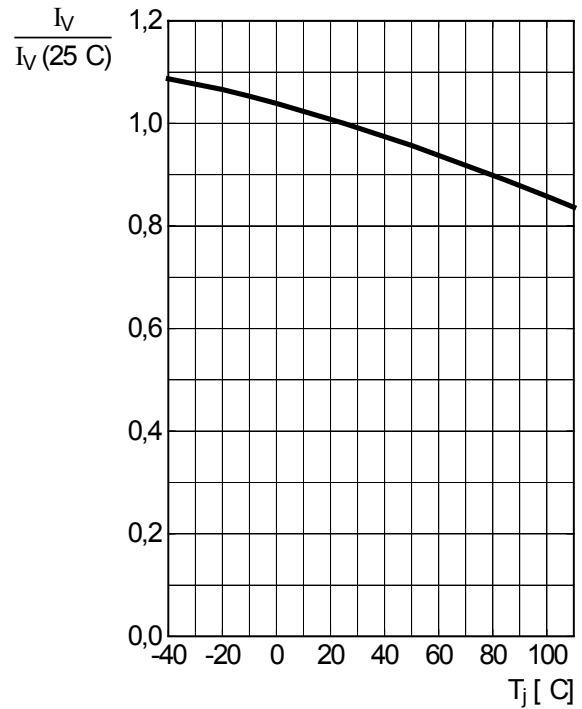
$$\Delta V_F = V_F - V_F(25^\circ\text{C}) = f(T_j); I_F = 120 \text{ mA}$$



Relative Luminous Intensity <sup>6) page 24</sup>

相对发光强度 <sup>6) 第 24</sup>

$$I_V/I_V(25^\circ\text{C}) = f(T_j); I_F = 120 \text{ mA}$$

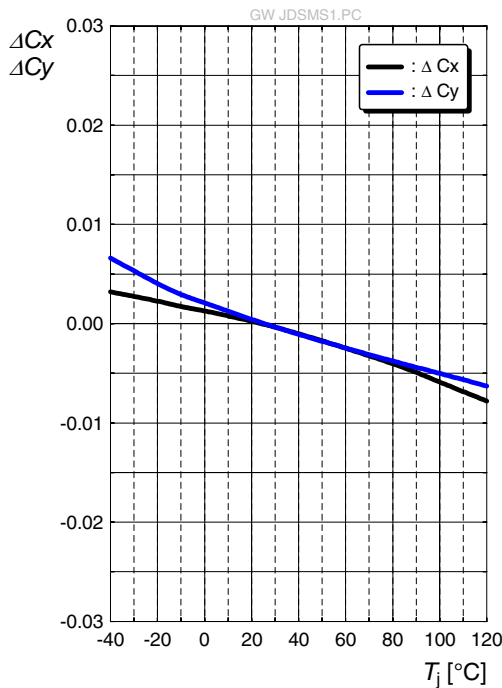


Chromaticity Coordinate Shift <sup>6) page 24</sup>

色度坐标偏移 <sup>6) 第 24</sup>

$$\Delta C_x, \Delta C_y = f(T_j); I_F = 120 \text{ mA}$$

warm white / 暖白光

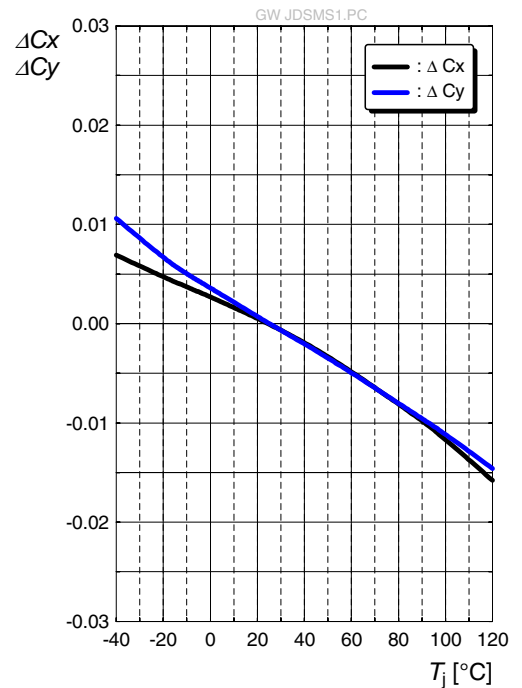


Chromaticity Coordinate Shift <sup>6) page 24</sup>

色度坐标偏移 <sup>6) 第 24</sup>

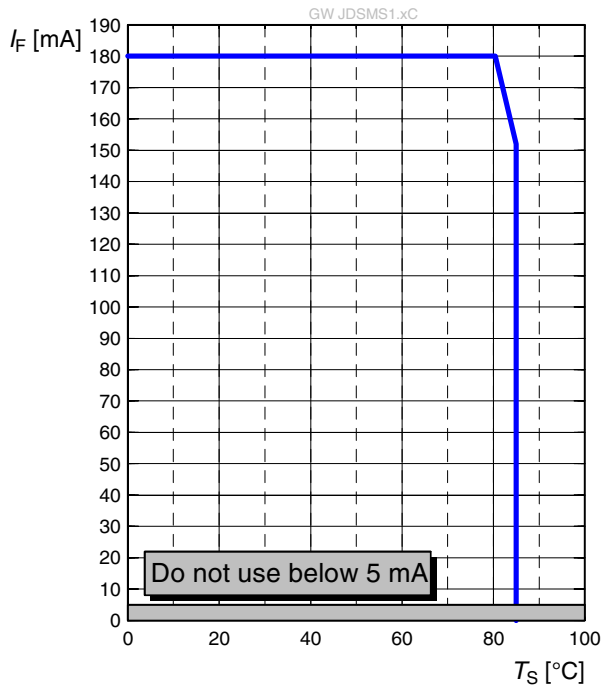
$$\Delta C_x, \Delta C_y = f(T_j); I_F = 120 \text{ mA}$$

cool white / 冷白光

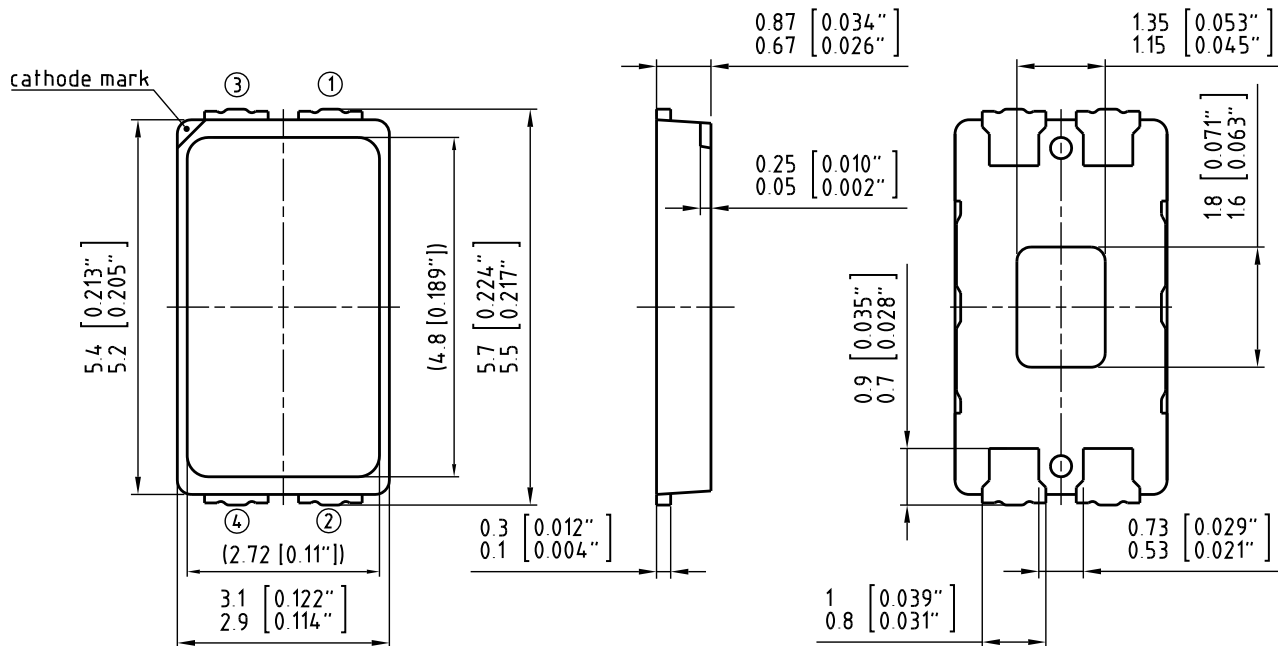


Max. Permissible Forward Current  
最大允许正向电流

$$I_F = f(T)$$



Package Outline <sup>7)</sup> page 24  
封装轮廓 <sup>7)</sup> 第 24



C63062-A4109-A1...-06

Approximate Weight:

35 mg

参考重量:

35 mg

Function:

P2 and thermal pad: Anode; P3: Cathode; P1&amp;P4 not connected

功能:

P2 和散热底盘: 正极; P3: 负极; P1&amp;P4 没有电极连接

ESD information:

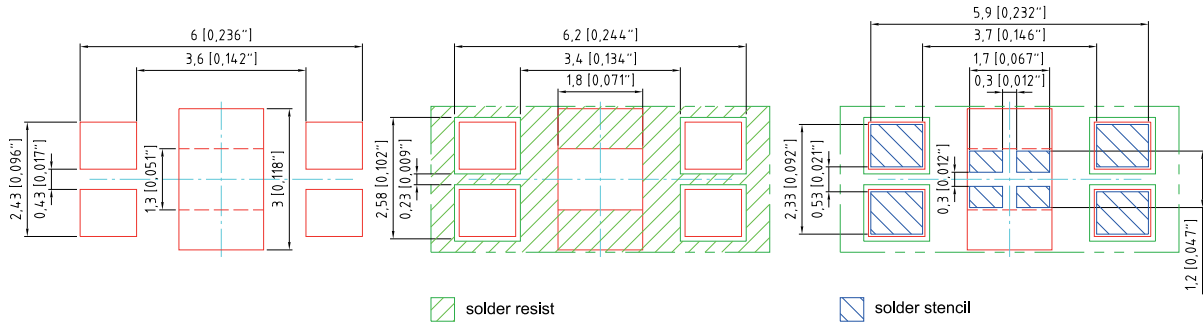
LED is protected by ESD device which is connected in parallel to LED-Chip.

ESD 信息:

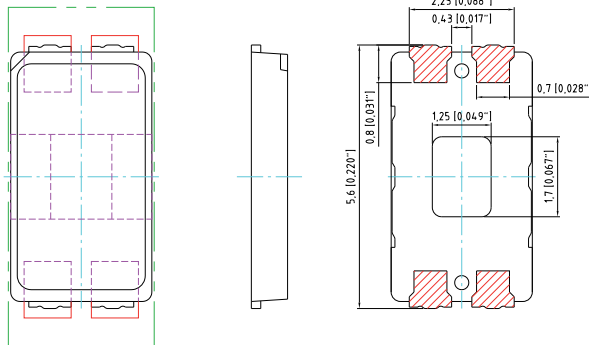
LED 由并联的 ESD 器件 (齐纳二极管) 所保护。

Recommended Solder Pad <sup>7)</sup> page 24  
 推荐焊盘 <sup>7)</sup> 第 24

Reflow soldering  
 红外线回流焊接



Component Location on Pad



E062.3010.88-01

Note:

Package not suitable for ultra sonic cleaning.  
 For superior solder joint connectivity results we recommend soldering under standard nitrogen atmosphere.

注释:

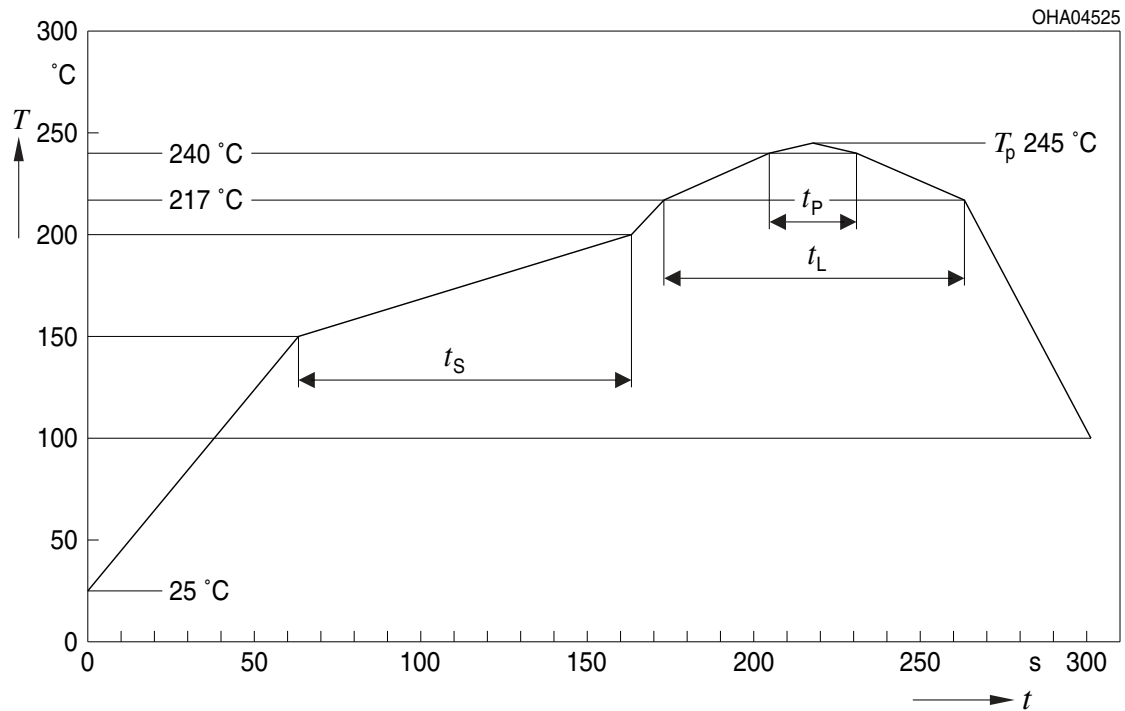
封装不适合超声波清洗。  
 为达到卓越的焊点连接效果，我们建议在标准氮气环境下焊接。



## Reflow Soldering Profile

## 回流焊曲线

Preconditioning: JEDEC Level 3 acc. to JEDEC J-STD-020D.01



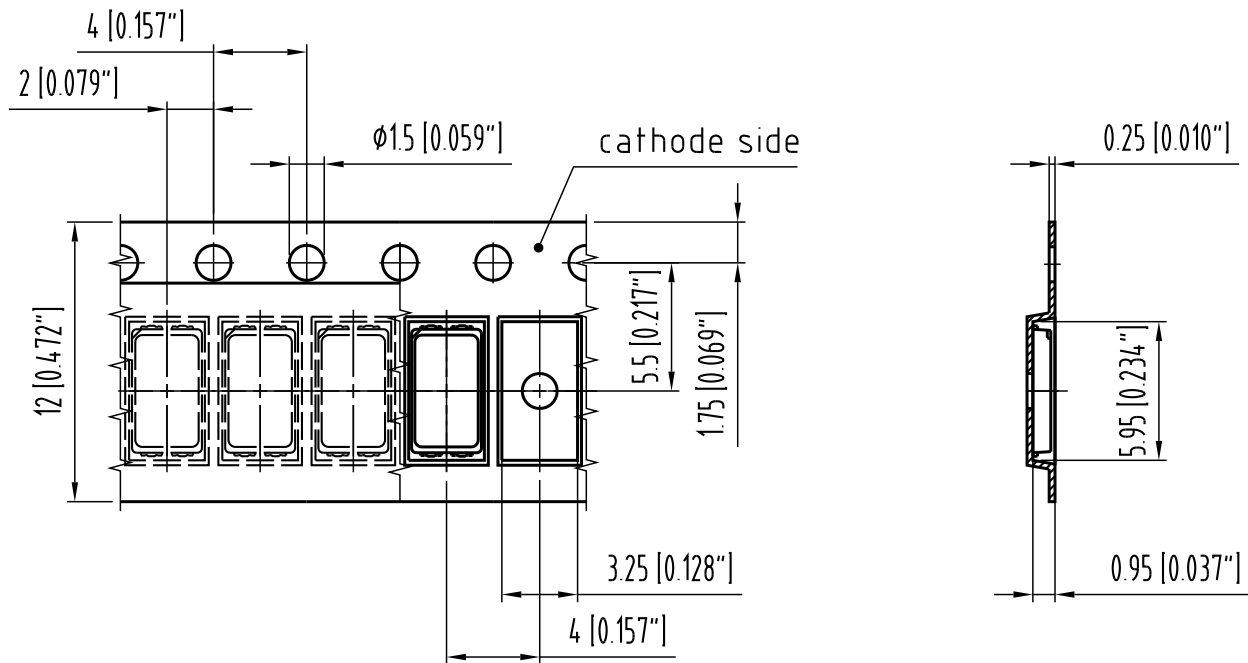
OHA04612

Profile Feature Profil-Charakteristik	Symbol Symbol	Pb-Free (SnAgCu) Assembly			Unit Einheit
		Minimum	Recommendation	Maximum	
Ramp-up rate to preheat*) 25 °C to 150 °C			2	3	K/s
Time $t_S$ $T_{Smin}$ to $T_{Smax}$	$t_S$	60	100	120	s
Ramp-up rate to peak*) $T_{Smax}$ to $T_P$			2	3	K/s
Liquidus temperature	$T_L$	217			°C
Time above liquidus temperature	$t_L$		80	100	s
Peak temperature	$T_P$		245	260	°C
Time within 5 °C of the specified peak temperature $T_P - 5$ K	$t_P$	10	20	30	s
Ramp-down rate* $T_P$ to 100 °C			3	6	K/s
Time 25 °C to $T_P$				480	s

All temperatures refer to the center of the package, measured on the top of the component

\* slope calculation  $DT/Dt$ :  $Dt$  max. 5 s; fulfillment for the whole T-range

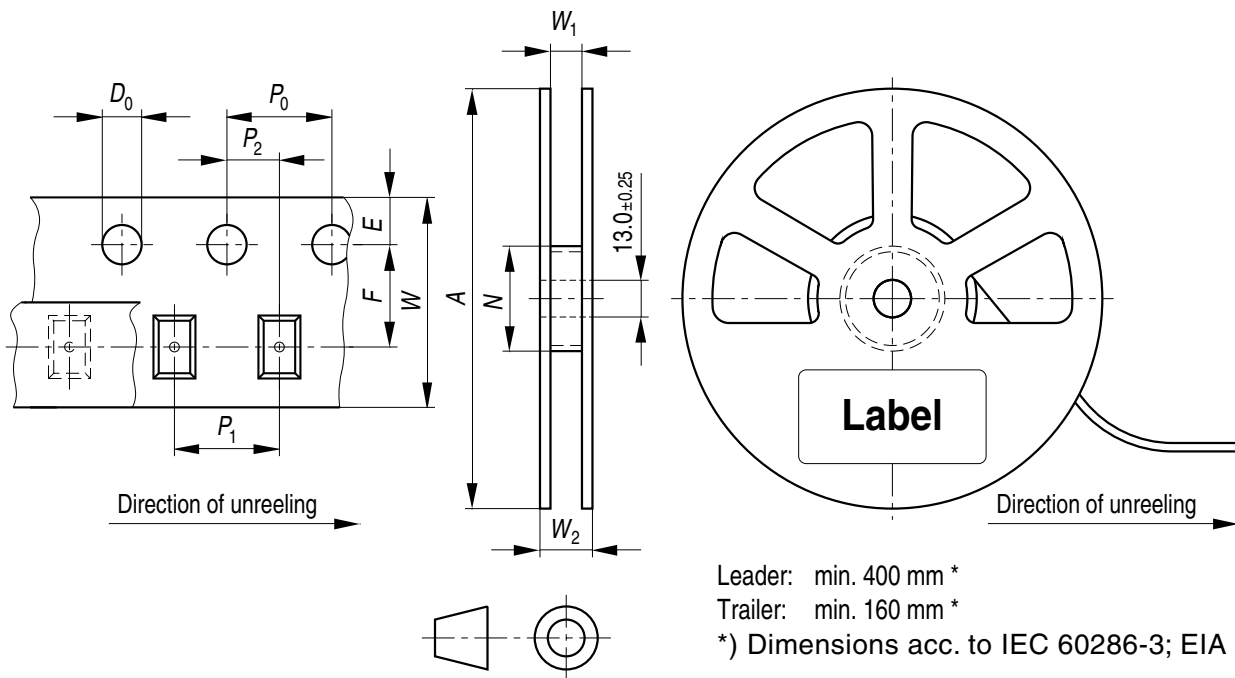
Method of Taping <sup>7)</sup> page 24  
 装卷带方法 <sup>7)</sup> 第 24



C63062-A4109-B1-03

## Tape and Reel

## 卷带和卷盘

12 mm tape with 2000 pcs. on  $\varnothing$  180 mm reel

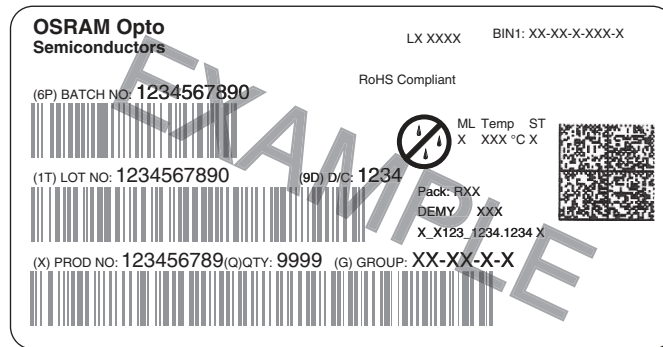
Tape dimensions in mm (inch) / 卷带尺寸 (单位: mm (英寸))

W	P <sub>0</sub>	P <sub>1</sub>	P <sub>2</sub>	D <sub>0</sub>	E	F
12 +0.3/-0.1	4 ± 0.1 (0.157 ± 0.004)	4 ± 0.1 (0.157 ± 0.004) or 8 ± 0.1 (0.315 ± 0.004)	2 ± 0.05 (0.079 ± 0.002)	1.5 ± 0.1 (0.059 ± 0.004)	1.75 ± 0.1 (0.069 ± 0.004)	5.5 ± 0.05 (0.217 ± 0.002)

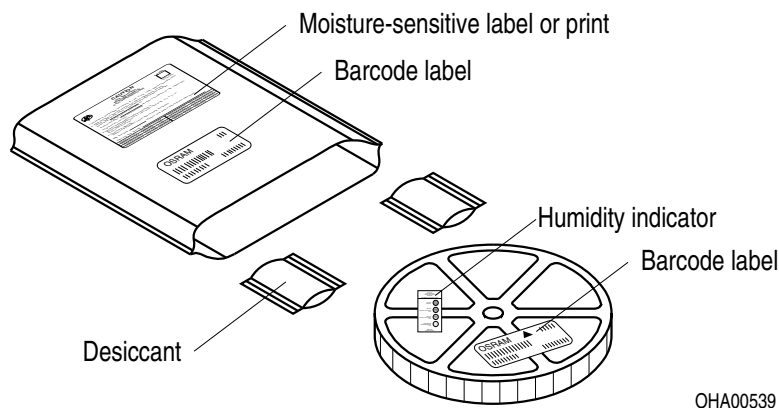
Reel dimensions in mm (inch) / 卷盘尺寸 (单位: mm (英寸))

A	W	N <sub>min</sub>	W <sub>1</sub>	W <sub>2max</sub>
180 (7)	12 (0.472)	60 (2.362)	12.4 + 2 (0.488 + 0.079)	18.4 (0.724)

**Barcode-Product-Label (BPL)**  
**条码 - 产品 - 标签 (BPL)**



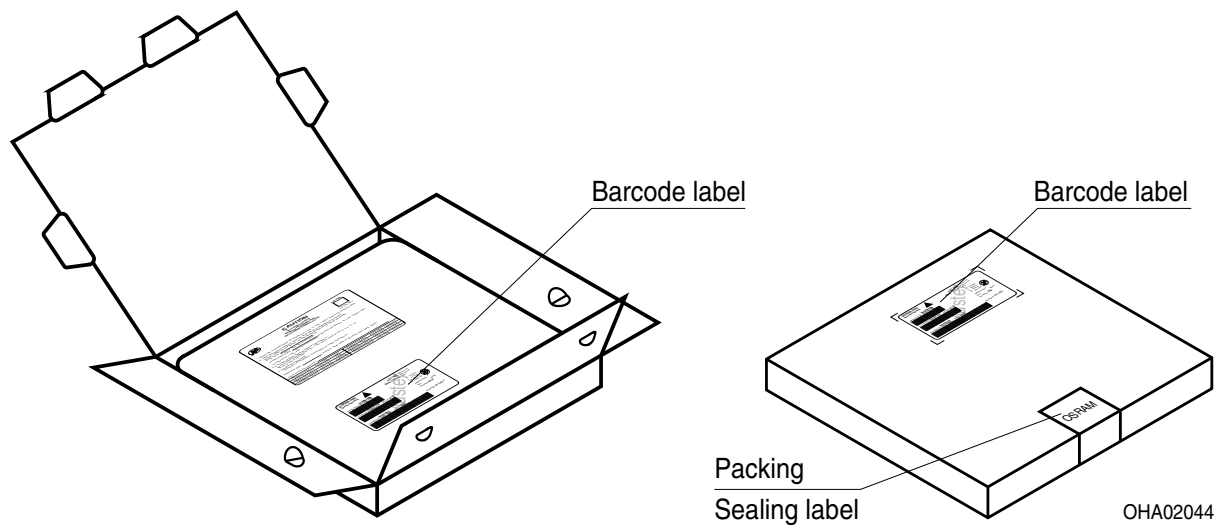
**Dry Packing Process and Materials**  
**干燥封装过程和材料**



**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.

**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。

Transportation Packing and Materials  
运输 包装 和 材料



Dimensions of transportation box in mm (inch): / 运输包装的尺寸单位 mm (英寸)

Width / 宽度	Length / 长度	Height / 高度
195 ± 5 (7.677 ± 0.1968)	195 ± 5 (7.677 ± 0.1968)	30 ± 5 (1.181 ± 0.196)

## Notes

The evaluation of eye safety occurs according to the standard IEC 62471:2008 ("photobiological safety of lamps and lamp systems"). Within the risk grouping system of this CIE standard, the LED specified in this data sheet fall into the class Exempt group (exposure time 10000 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. As 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.

Subcomponents of this LED are silverplated. Silver is discoloring when being exposed to environments containing high concentrations of aggressive substances. Corroded silver may lead to a worsening of the optical performance of the LED and can in the worst case lead to a failure of the LED. Do not expose this LED to aggressive atmospheres. Note, that corrosive gases may as well be emitted from materials close to the LED in the final product.

Change management for this component is aligned with the requirements of the lighting market.

## 注释

本产品根据 IEC 62471:2008 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 “无风险” 组 (接触时间为 1000 秒)。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。

该款 LED 的子组件含镀银成分。当银被暴露在含有高浓度的腐蚀性物质的环境中会产生变色。锈蚀的银可能导致 LED 的光学性能下降, 并可以在最坏的情况下导致 LED 的故障。因此不要将这款 LED 暴露在高腐蚀性环境。注意, 腐蚀性气体也可能从最终产品中 LED 周围的材料中产生。

该组件的变更管理是与照明市场的要求相一致的。

## Disclaimer

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## 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 in the Internet.

## 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.

## Components used in life-support devices or systems must be expressly authorized for such purpose!

Critical components\* may only be used in life-support devices\*\* or systems with the express written approval of OSRAM OS.

\*) 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.

\*\*) 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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如果对类型信息有疑问，请联系我们的销售部门。

如需打印或下载，请到公司网站寻找最新版本。

## 封装

请联系您所熟悉的物资回收公司。我们也可以帮助您联系最近的销售办事处。

如果您已对包装材料进行了分类，我们将根据协议进行回收，所产生的运输费用须由您承担。对于未经分类即退回本公司或我们没有责任接受的包装材料，我们将开具发票由您支付因此产生的一切费用。

## 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 \* 用于生命支持装置或系统 \*\*。

\*) 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。

\*\*) 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。

## Glossary

- 1) **Brightness:** Brightness groups are tested at a current pulse duration of 25 ms and a tolerance of  $\pm 11\%$ .
- 2) **Forward Voltage:** Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of  $\pm 0.1\text{ V}$ .
- 3) **Color reproduction index:** Color reproduction index values (CRI-RA) are measured during a current pulse of typically 25 ms and with a tolerance of  $\pm 3$ .
- 4) **Thermal Resistance:**  $R_{th\ max}$  is based on statistic values ( $6\sigma$ ).
- 5) **Chromaticity coordinate groups:** Chromaticity coordinate groups are tested at a current pulse duration of 25 ms and a tolerance of  $\pm 0.01$ .
- 6) **Typical Values:** 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.
- 7) **Tolerance of Measure:** Dimensions are specified as follows: mm (inch).

## 词汇表

- 1) **亮度:** 亮度分组是在电流脉冲为 25 毫秒的条件下测试，容差为  $\pm 11\%$ 。
- 2) **正向电压:** 正向电压是在电流脉冲为 1 毫秒的条件下测试，容差为  $\pm 0.1\text{V}$ 。
- 3) **显色指数:** 显色指数 (CRI-RA) 是在电流脉冲为 25 毫秒的条件下测试，容差为  $\pm 3$ 。
- 4) **热阻:** 最大热阻基于统计数据 ( $6\sigma$ )。
- 5) **色度坐标组:** 颜色分组是在电流脉冲为 25 毫秒的条件下测试，容差为  $\pm 0.01$ 。
- 6) **典型值:** 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。
- 7) **测量容差:** 尺寸单位指定为：mm（英寸）。

