



# HVCY-3535MGS

## 3535 系列产品 / Products Series

具有高发光效率、高一致性、高稳定性、高可靠性，主要用于汽车应用

High luminous efficiency, consistency, stability and reliability, it is mainly used in automobile applications.

## 特征

- 外观：白色EMC塑料，荧光硅胶封装
- 50%  $I_v$  视角：120°
- 颜色：Cx=0.57,Cy=0.42 ( CIE1931 )
- 资格：可靠性测试符合AEC Q102和 IEC 60810标准
- 潮湿敏感等级-2

## Features

- Package: Colored diffused silicone in white EMC cup
- Viewing angle at 50%  $I_v$ : 120°
- Color: Cx=0.57,Cy=0.42 ( acc. to CIE1931 )
- Qualifications: Reliability test compliance with AEC Q102 and IEC 60810
- MSL-2

## 应用

- 信号灯
- 汽车内外部照明应用

## Applications

- Signaling
- Interior and exterior lighting for automotive

## 订购信息 / Ordering Information

型号 Type	光通量 Luminous Flux $\Phi_v$ @ $I_f=350\text{mA}$	订单编号 Ordering Code
HVCY-3535MGS-XXXX - XX - XX                           亮度档     色度坐标     电压档 Brightness Chromaticity Forward Coordinate                   Voltage	71 -112 lm	XXXXXX

## 备注

**■ 亮度档**

单个最小包装只装有同一个亮度档次的产品，具体分档信息请见第4页

例如：HVCY-3535MGS-5K8K-XX-XX，单个卷盘中的产品只有5K、6K、7K、8K中的某一档

**■ 色度坐标档**

具体信息请见第4页

**■ 正向电压档**

单个最小包装只装有同一个正向电压档次的产品，具体分档信息请见第4页

例如：HVCY-3535MGS-XXXX-XX-8F8H，单个卷盘中的产品只有8F、8G、8H中的某一档

## Note

**■ Brightness Grouping**

Only one brightness group will be packed in each reel. Please refer to page #4 for details.  
E.g.: HVCY-3535MGS-5K8K-XX-XX, means only one bin of 5K, 6K, 7K or 8K is in each reel.

**■ Chromaticity Coordinate Grouping**

Please refer to page #4 for details.

**■ Forward Voltage Groups**

Only one forward voltage group will be packed in each reel. Please refer to page #4 for details.

E.g.: HVCY-3535MGS-XXXX-XX-8F8H, means only one bin of 8F, 8G or 8H is in each reel.

## 极限参数 / Maximum Ratings

参数 Parameters	符号 Symbol	数值 Rating	单位 Unit
结温 / Junction Temperature	$T_j$	150	°C
正向电流 / Forward Current ( $T_s=25^\circ\text{C}$ )	$I_f$	500	mA
峰值正向电流 Peak Forward Current ( $t \leq 10\mu\text{s}$ ; $D=0.005$ ; $T_s=25^\circ\text{C}$ )	$I_{fp}$	1000	mA
反向电压 / Reverse Voltage ( $T_s=25^\circ\text{C}$ )	$V_r$	不可施加反向电压 / not designed for reverse operation	V
抗静电能力 Electrostatic Discharge (HBM)	$V_{ESD}$	2000	V
操作温度 / Operating Temperature	$T_{opr}$	-40 ~ +125	°C
储存温度 / Storage Temperature	$T_{stg}$	-40 ~ +125	°C

特性 / Characteristics ( $T_s = 25^\circ\text{C}$ ;  $I_f = 350\text{ mA}$ )

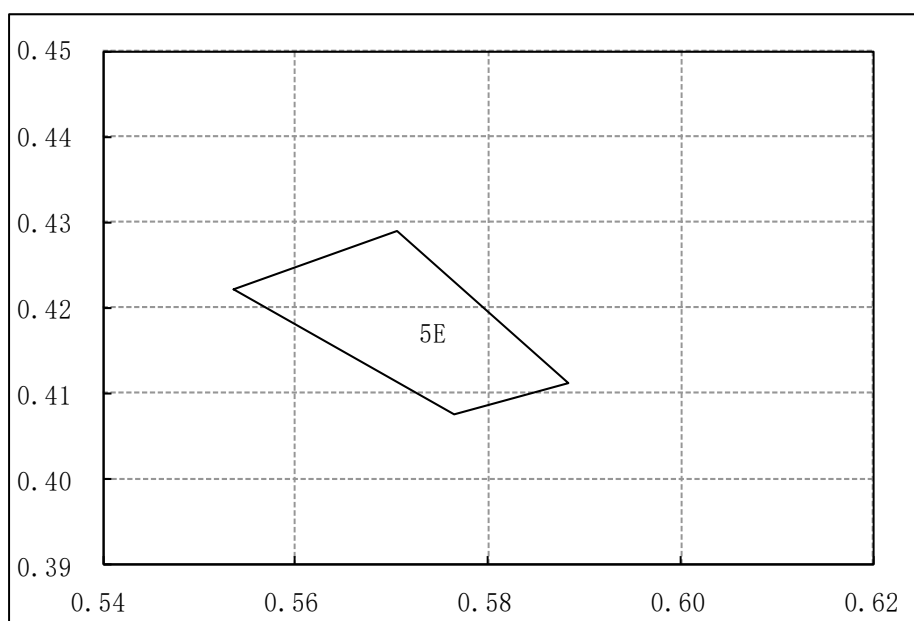
参数 Parameters		符号 Symbol	数值 Rating	单位 Unit
色坐标 / Chromaticity coordinates acc. to CIE 1931	typ.	$C_x$	0.57	-
		$C_y$	0.42	-
50 % $I_v$ 下的视角 / Viewing Angle at 50 % $I_v$	typ.	$2\Phi$	120	°
	min.	$V_f$	2.75	V
	typ.	$V_f$	3.25	V
正向电压 / Forward Voltage	max	$V_f$	3.75	V
	typ.			
反向电流 / Reverse Current ( $V_R=12\text{V}$ )	typ.	$I_r$	不可施加反向 电压 / not designed for reverse operation	uA
	max.	$I_r$		uA
实际热阻值 (PN结-焊点) / Real Thermal Resistance (Junction / Solder Point)	max.	$R_{th JS_{real}}$	7.2	K/W

亮度分档 / Brightness Grouping ( $T_s = 25\text{ }^\circ\text{C}$ ;  $I_f = 350\text{ mA}$ )

档次 Grouping	光通量 Luminous Flux $\Phi_v$ ( min. )	光通量 Luminous Flux $\Phi_v$ ( max. )
5K	71 lm	80 lm
6K	80 lm	90 lm
7K	90 lm	100 lm
8K	100 lm	112 lm

正向电压分档 / Forward Voltage Grouping ( $T_s = 25\text{ }^\circ\text{C}$ ;  $I_f = 350\text{ mA}$ )

档次 Grouping	正向电压 Forward Voltage $V_f$ ( min. )	正向电压 Forward Voltage $V_f$ ( max. )
8E	2.75 V	3.00 V
8F	3.00 V	3.25 V
8G	3.25 V	3.50 V
8H	3.50 V	3.75 V

颜色色度分档 / Colour Chromaticity Groups ( $T_s = 25\text{ }^\circ\text{C}$ ;  $I_f = 350\text{ mA}$ )

5E	
X	Y
0.5536	0.4221
0.5705	0.4289
0.5764	0.4075
0.5883	0.4111

## 标签信息 / Information on Label

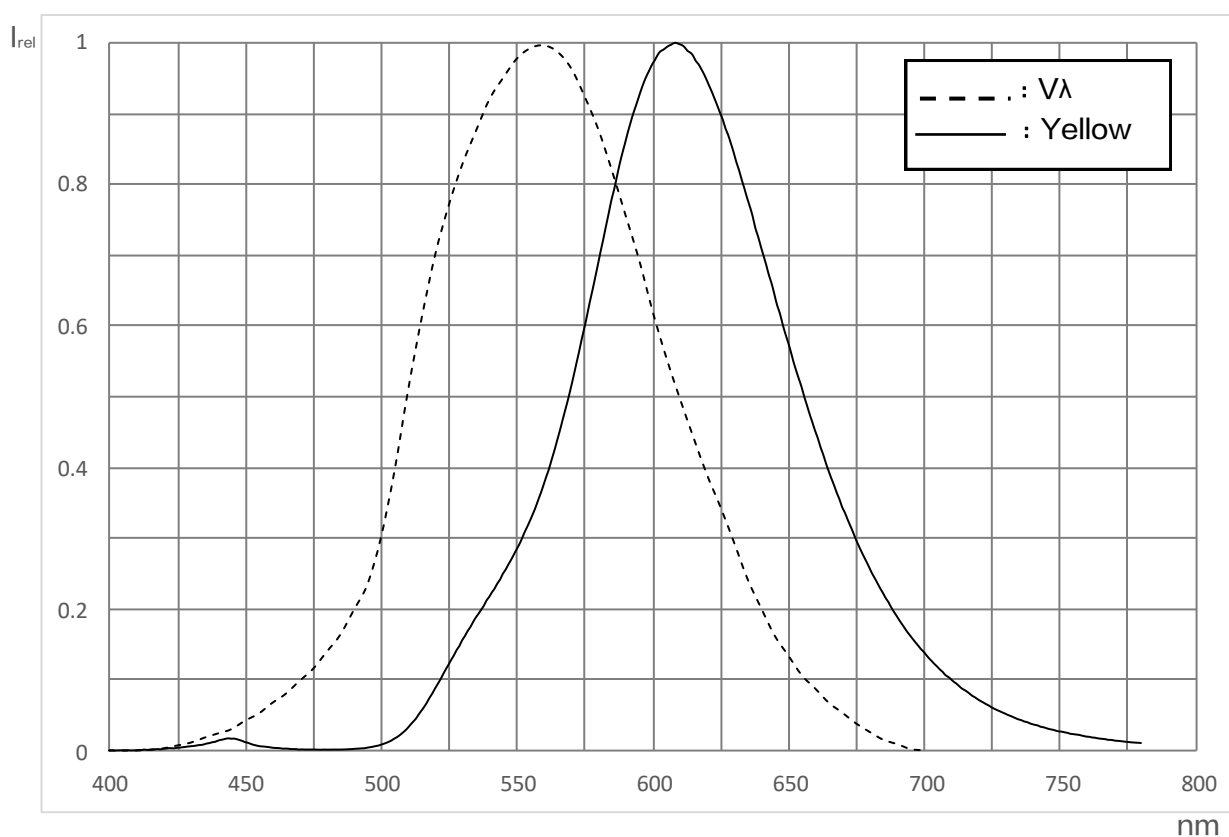
例 / E.g.: 5K-5E-8G

亮度档 / Brightness	颜色 / Color	正向电压 / Forward Voltage
5K	5E	8G

相对发射光谱 -  $V(\lambda)$  = 标准人眼视觉曲线

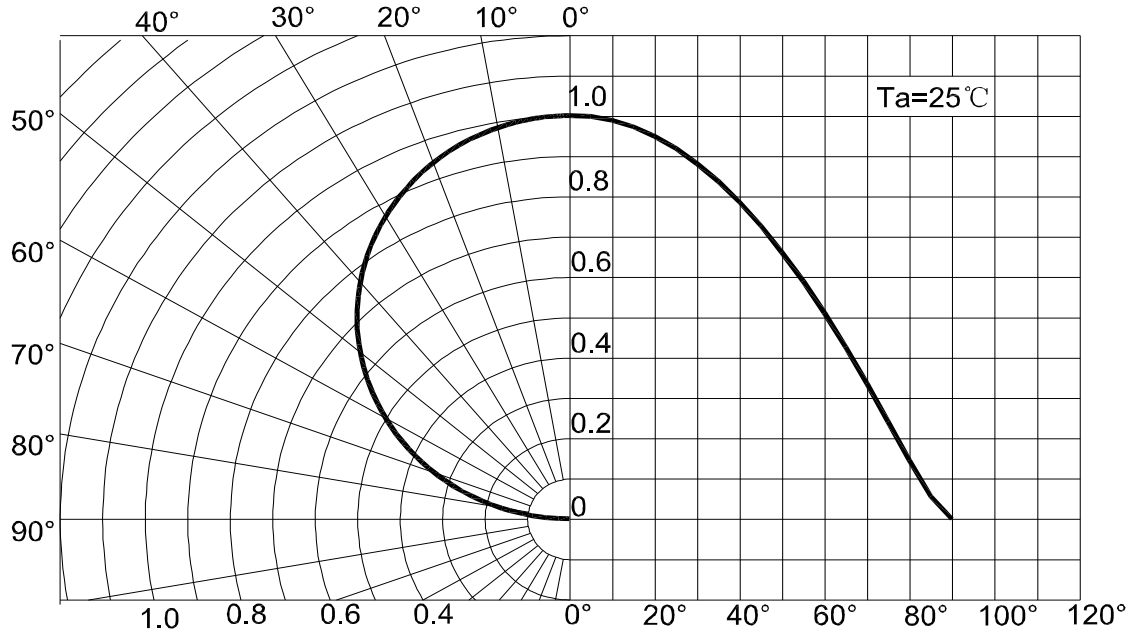
Relative Spectral Emission -  $V(\lambda)$  = Standard Eye Response Curve

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



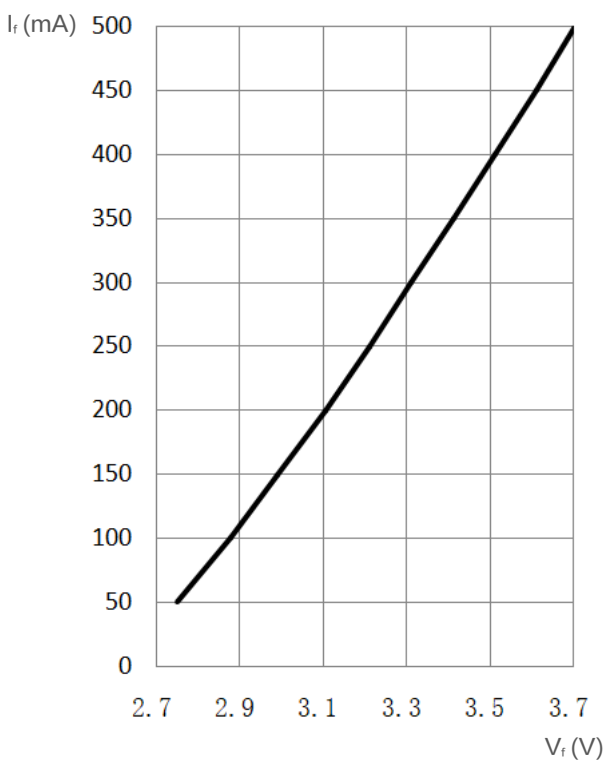
辐射特性 / Radiation Characteristics

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



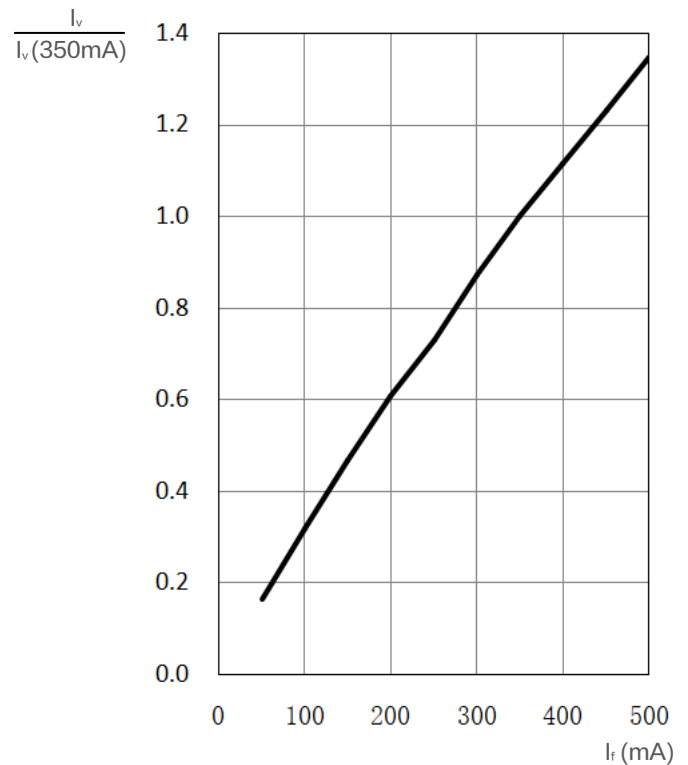
正向电流 / Forward Current

$I_f = f(V_f); T_a = 25^\circ\text{C}$



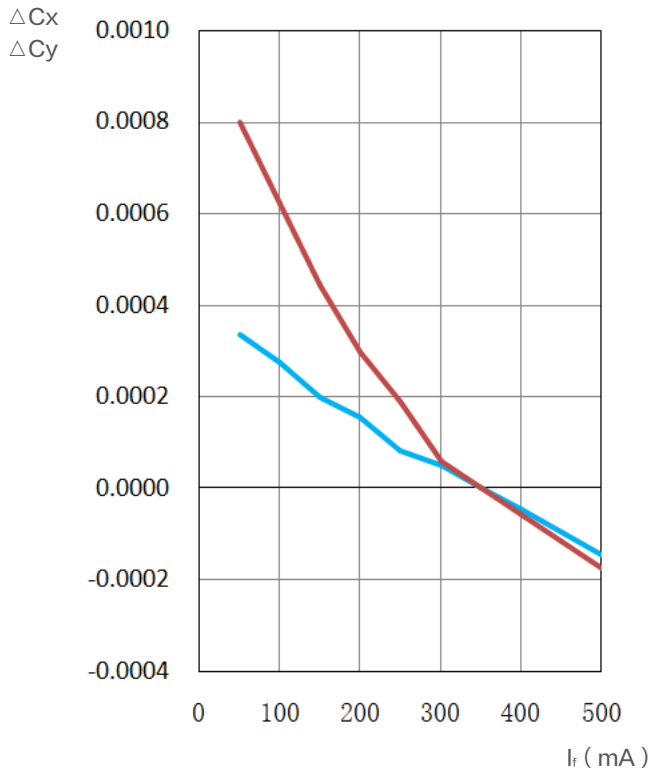
相对亮度特性曲线 / Relative Luminous Intensity

$I_v/I_v(350\text{mA}) = f(I_f); T_a = 25^\circ\text{C}$



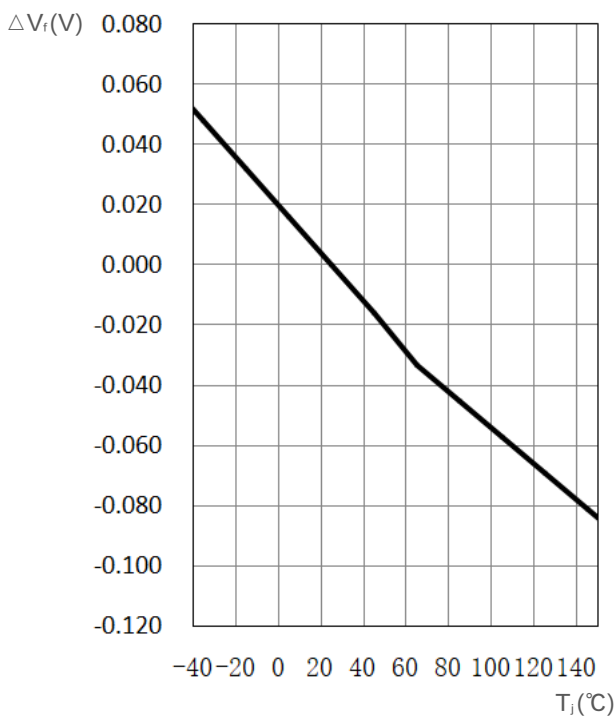
色坐标数据表/Chromaticity coordinate shift

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



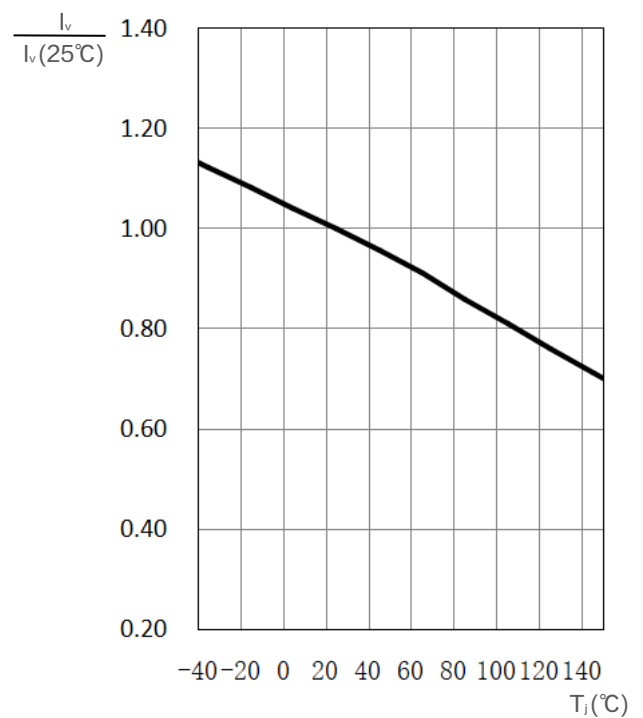
相对正向电压 / Relative Forward Voltage

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



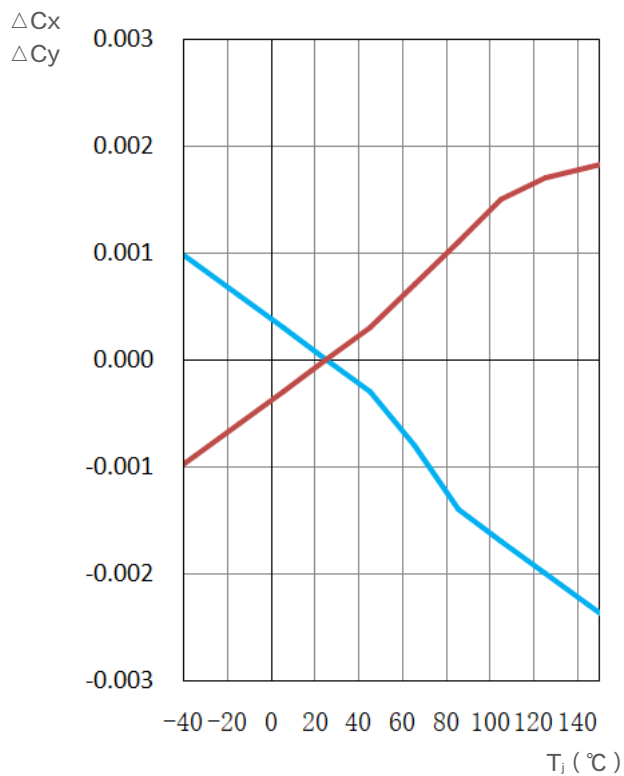
相对发光强度 / Relative Luminous Intensity

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



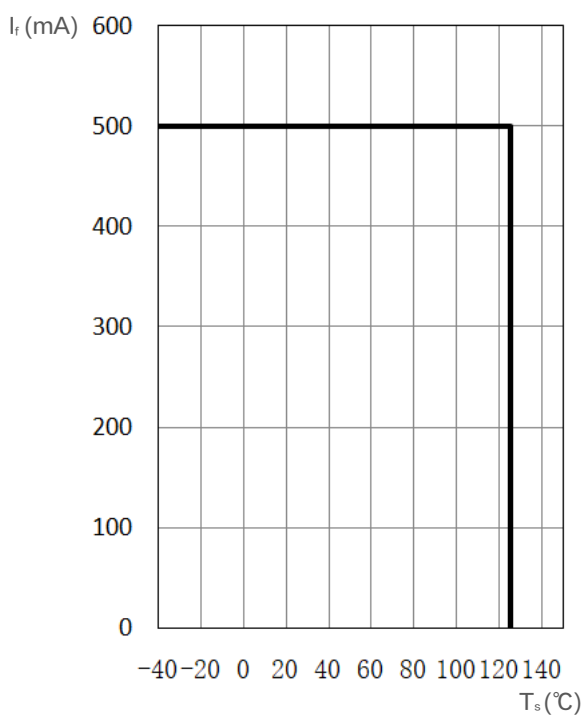
色坐标数据表/Chromaticity coordinate shift

$\Delta C_x, \Delta C_y = f(I_f); I_f = 350\text{mA}$



焊点温度与正向电流 / Solder Point Temperature vs. Forward Current

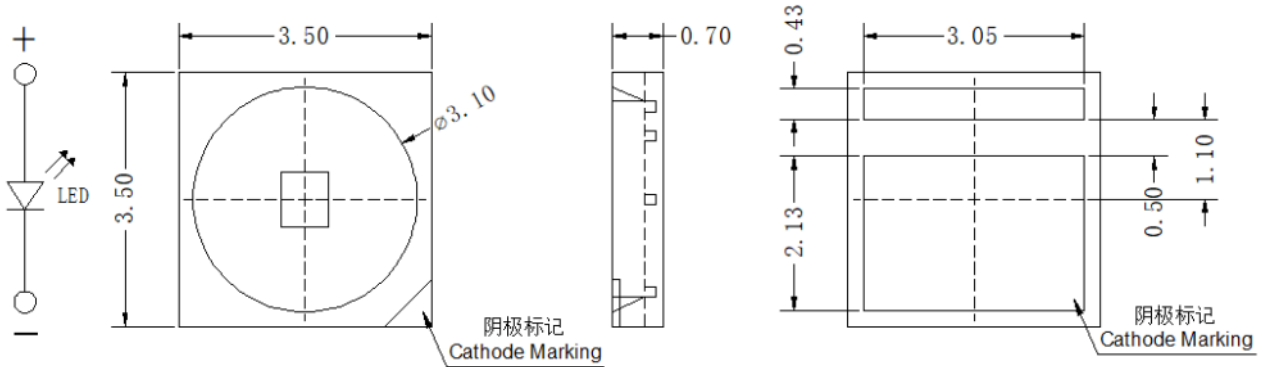
$I_f = f(T_s)$





产品尺寸 / Package Outline

Unit: mm  
Error range: ± 0.1



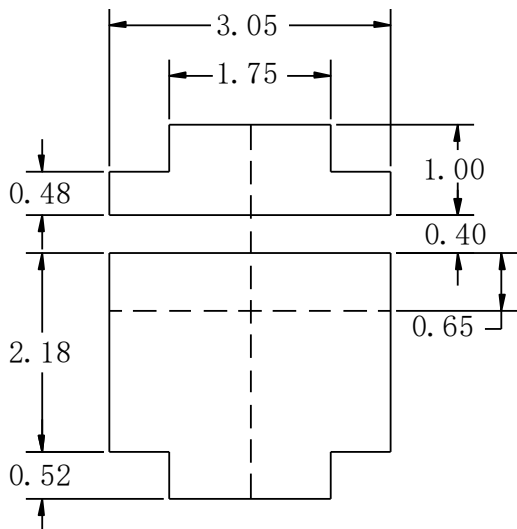
备注

- 统计质量: 60mg
- 标 记: 阴极

NOTE

- Approximate Weight: 60mg
- Mark: Cathode

推荐焊盘 / Recommended Solder Pad



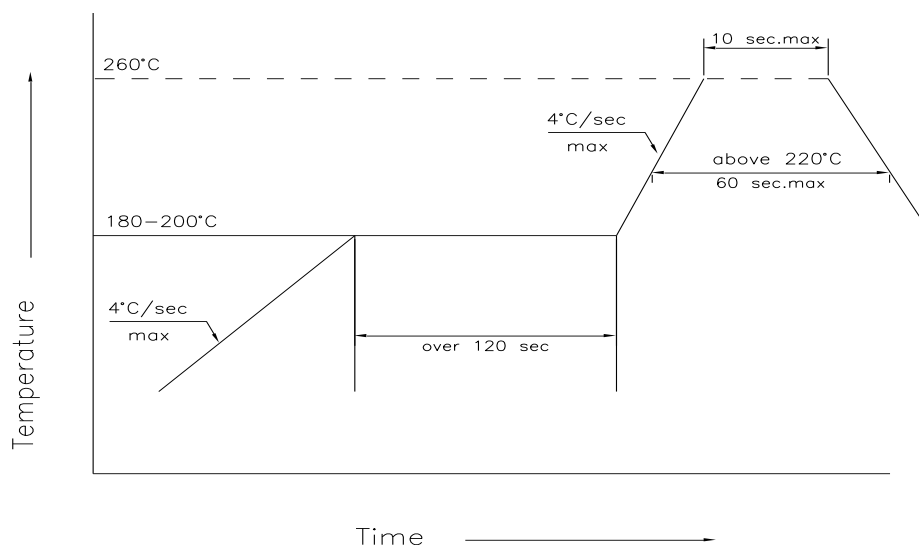
注释

- 不适合超声波清洗的封装

NOTE

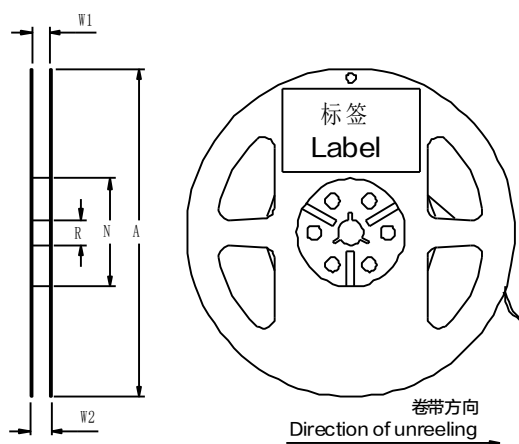
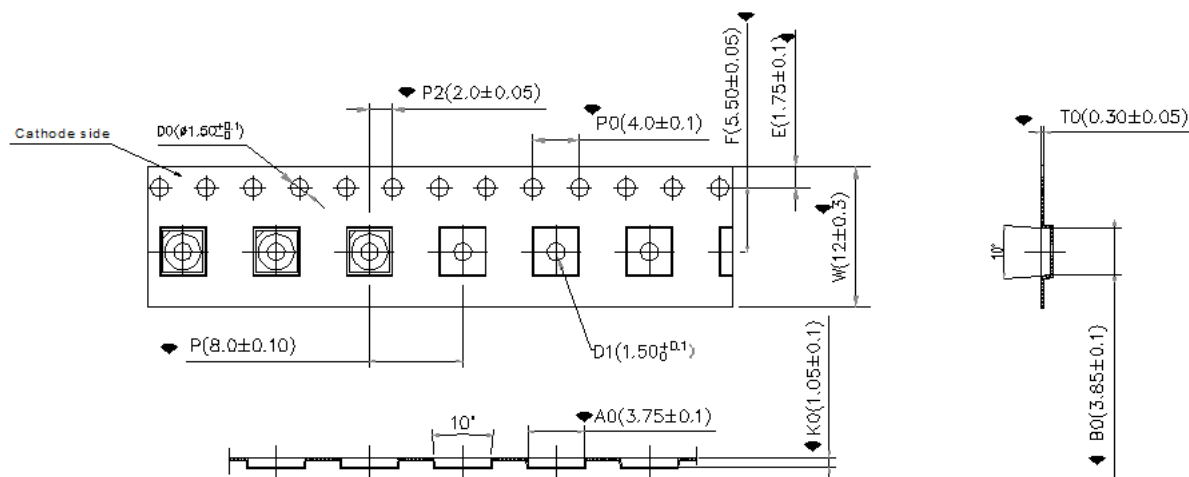
- Package not suitable for ultrasonic cleaning

## 回流焊要求 / Reflow Soldering Profile



主要特性 Profile Feature	符号 Symbol	无铅焊接 Pb-Free (SnAgCu) Assembly			单位 Unit
		min.	rec.	max.	
预热升温速率 Ramp-up Rate to Preheat 25°C-150°C	-	-	2	3	°C/s
时间 / Time ( $T_{smin}$ to $T_{smax}$ )	$T_s$	60	100	120	s
峰值升温速率 Ramp-up Rate to Peak ( $T_{smax}$ to $T_p$ )	-	-	2	3	°C/s
熔点温度 Liquidus Temperature	$T_l$		217		°C
高于熔点温度的时间 Time above Liquidus Temperature	$t_l$	-	80	100	s
峰值温度 / Peak Temperature	$T_p$	-	255	260	°C
规定的峰值温度 ± 5°C 以内的时间 Time within 5°C of the Specified Peak Temperature	$t_p$	10	20	30	s
降温速率 / Ramp-down Rate ( $T_p$ to 100°C)	-	-	3	6	°C/s
时间 / Time (25°C to $T_p$ )	-	-	-	480	s

## 卷带与卷盘 / Tape and Reel



前端空带: 最小400 mm; 尾端空带: 最小160 mm; 尺寸符合: EIA 481-C标准

Leader: min. 400 mm; Trailer: min. 160 mm; Requirement acc. to EIA 481-C

## 卷带尺寸 / Tape Dimensions ( mm )

W	P0	P	P2	D0	E	F
12±0.3	4±0.1	8±0.1	2±0.05	1.50±0.1	1.75±0.1	5.50±0.05

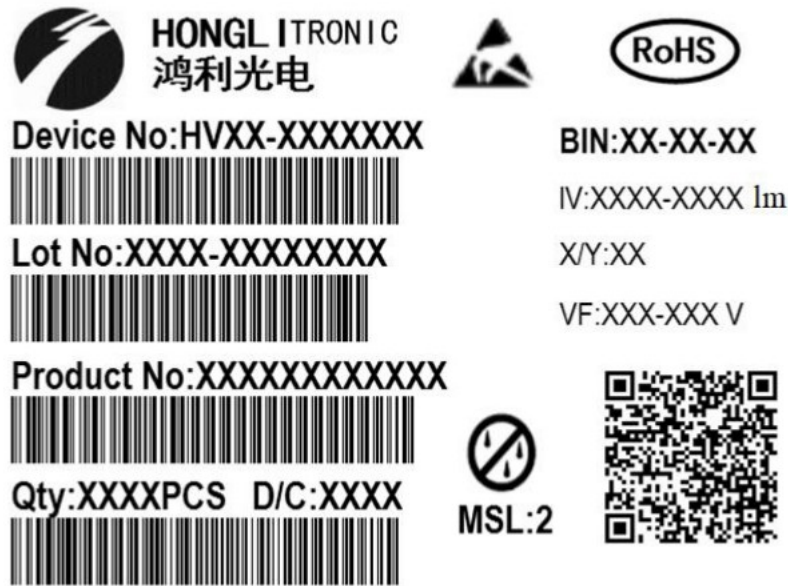
## 卷盘尺寸 / Reel Dimensions ( mm )

A	W1	W2	N	R
178.0±0.2	8.0±0.5	8.0±0.5	60.0±0.4	13.5±0.3

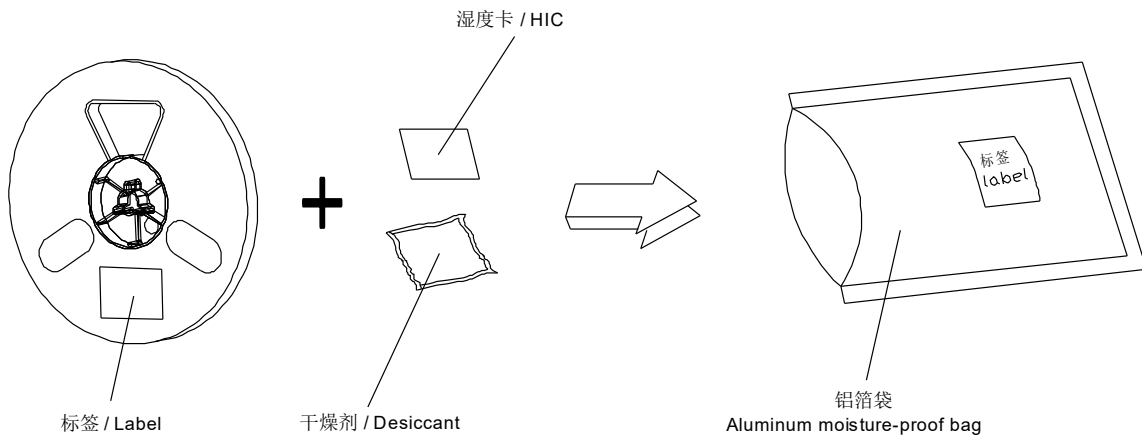
## 数量 (颗/卷) / Quantity ( pcs/reel )

2000

## 条形码标签 / Barcode-Product-Label (BPL)



## 包装材料及过程 / Dry Packing Process and Materials



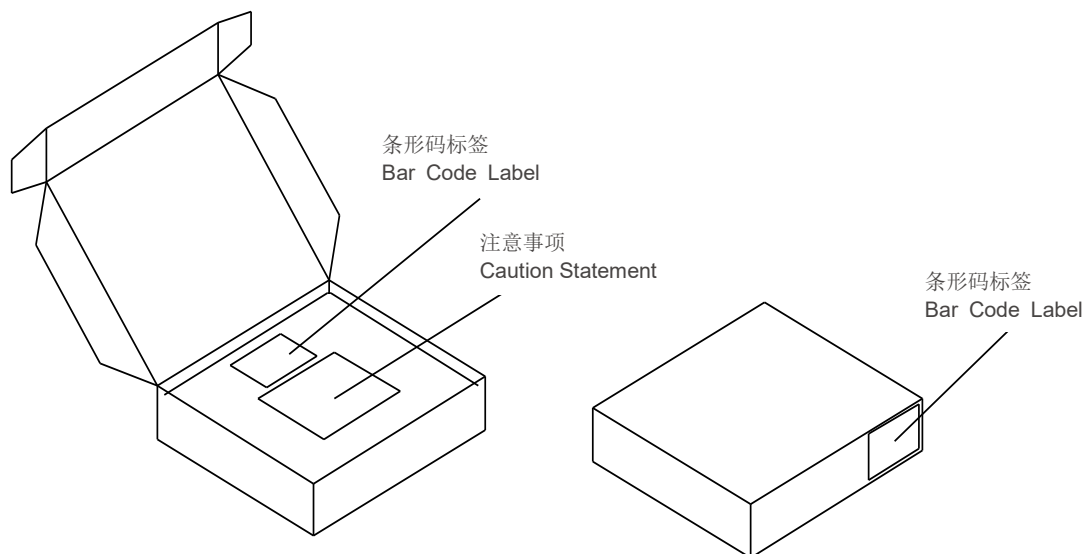
### 备注

产品包装在一个干燥的铝箔袋里，同时内附有干燥剂和湿度卡。  
 对于干燥包装，您可以从网络或JEDEC标准里获取。

### NOTE

Moisture-sensitive product is packed in a dry bag containing desiccant and HIC (humidity indicator card).  
 Regarding dry pack you may find further information in the internet or JEDEC.

## 出货包装及材料 / Transportation Packing and Materials



## 出货箱尺寸 / Dimensions of Transportation Box (mm)

宽度 / Width	长度 / Length	高度 / Height
256 ± 5	223 ± 5	62 ± 5
256 ± 5	223 ± 5	124 ± 5

## 注释

**典型值:** 每个产品的实际值可能与这些统计出的典型值不同。

**公差:** 除非图纸中有说明, 公差默认为  $\pm 0.1$  mm。

**正向电压:** 正向电压是在8ms脉冲电流并且内部再现性为  $\pm 0.05$ V和一个  $\pm 0.1$ V的外在不确定性 (按照GUM K=3因子) 来进行测试的。

**色度坐标:** 色度坐标是在25ms脉冲电流并且内部再现性为  $\pm 0.005$ 和一个  $\pm 0.01$ 的外在不确定性 (按照GUM K=3因子) 来进行测试的。

**亮度:** 亮度是在25ms脉冲电流并且内部再现性为  $\pm 8\%$ 和一个  $\pm 11\%$ 的外在不确定性 (按照GUM K=3因子) 来进行测试的。

**特殊声明:** 本版本最终解释权归属鸿利智汇, 当中英文意思发生歧义时, 以中文为准。

## Glossary

**Typical Values:** Actual values of each product may differ from these statistical values .

**Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with  $+/-0.1$ mm.

**Forward Voltage:** The forward voltage is measured during a current pulse of typically 8 ms, with an internal reproducibility of  $\pm 0.05$  V and an expanded uncertainty of  $\pm 0.1$  V (acc. to GUM with a coverage factor of  $k = 3$ ).

**Chromaticity coordinate groups:** Chromaticity coordinate groups is measured at a current pulse of typically 25 ms, with an internal reproducibility of  $\pm 0.005$  and an expanded uncertainty of  $\pm 0.01$  (acc. to GUM with a coverage factor of  $k = 3$ ).

**Brightness:** Brightness values are measured during a current pulse of typically 25 ms, with an internal reproducibility of  $\pm 8\%$  and an expanded uncertainty of  $\pm 11\%$  (acc. to GUM with a coverage factor of  $k = 3$ ).

**Special Statement:** The final interpretation of this specification shall be vested in Honglitronic, in the case of ambiguity, the Chinese version shall prevail.

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