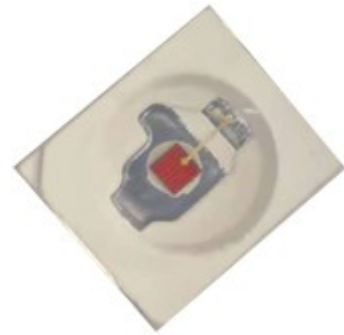


HVS-2835FPYA



2835 PLCC2 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PCT塑料, 无色透明硅树脂封装
- 50% I_v 视角: 120°
- 颜色: 超红 (633nm)
- 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: Colorless clear silicone in white PCT cup
- Viewing angle at 50% I_v : 120°
- Color: Super red (633nm)
- 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	发光强度 Luminous Intensity I _v @ I _f =60mA	订单编号 Ordering Code
HVS-2835FPYA - XXXX - X - XXXX 亮度档 Brightness 颜色档 Color 电压档 Forward Voltage	1.40 - 2.80 cd	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：HVS-2835FPYA-ABBB-1-XXXX，单个卷盘中的产品只有AB、BA、BB中的某一档

颜色档

具体分档信息请见第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：HVS-2835FPYA-XXXX-1-24，单个卷盘中的产品只有2、3、4中的某一档

Note

Brightness Grouping

Only one brightness group will be packed in one reel. Please refer to page #4 for details.
 E.g.: HVS-2835FPYA-ABBB-1-XXXX, means only one bin of AB, BA or BB is in one reel.

Color Grouping

Please refer to page #4 for details.

Forward Voltage Groups

Only one forward voltage group will be packed in one reel. Please refer to page #4 for details.
 E.g.: HVS-2835FPYA-XXXX-1-24, means only one bin of 2, 3 or 4 is in one 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	125	°C
正向电流 / Forward Current ($T_s=25^{\circ}\text{C}$)	I_f	70	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}	100	mA
反向电压 / Reverse Voltage ($T_s=25^{\circ}\text{C}$)	V_r	10	V
抗静电能力 Electrostatic Discharge (HBM)	V_{ESD}	2000	V
操作温度 / Operating Temperature	T_{opr}	-40 ~ +110	°C
储存温度 / Storage Temperature	T_{stg}	-40 ~ +110	°C

特性 / Characteristics ($T_s = 25^{\circ}\text{C}$; $I_f = 60\text{ mA}$)

参数 Parameters		符号 Symbol	数值 Rating	单位 Unit
峰值波长 / Wavelength at Peak Emission	typ.	λ_{peak}	645	nm
主波长 / Dominant Wavelength	min.	λ_{dom}	627	nm
	typ.	λ_{dom}	633	nm
	max.	λ_{dom}	639	nm
半波宽 / Spectral Bandwidth at 50% I_{rel} max	typ.	$\Delta\lambda$	16	nm
50 % I_v 下的视角 / Viewing Angle at 50 % I_v	typ.	2Φ	120	°
正向电压 / Forward Voltage	min.	V_f	1.90	V
	typ.	V_f	2.20	V
	max.	V_f	2.50	V
反向电流 / Reverse Current ($V_R=10\text{V}$)	typ.	I_r	0.2	uA
	max.	I_r	10	uA
实际热阻值 (PN结-焊点) / Real Thermal Resistance (Junction / Solder Point)	max.	$R_{th JS_{real}}$	18	K/W

亮度分档 / Brightness Grouping ($T_s = 25\text{ }^{\circ}\text{C}$; $I_f = 60\text{ mA}$)

档次 Grouping	发光强度 Luminous Intensity I_v (min.)	发光强度 Luminous Intensity I_v (max.)	光通量 Luminous Flux Φ_v (typ.)
AB	1.40 cd	1.80 cd	4.80 lm
BA	1.80 cd	2.24 cd	6.10 lm
BB	2.24 cd	2.80 cd	7.60 lm

正向电压分档 / Forward Voltage Grouping ($T_s = 25\text{ }^{\circ}\text{C}$; $I_f = 60\text{ mA}$)

档次 Grouping	正向电压 Forward Voltage V_f (min.)	正向电压 Forward Voltage V_f (max.)
2	1.70 V	2.00 V
3	2.00 V	2.30 V
4	2.30 V	2.60 V

主波长分档 / Dominant Wavelength Grouping ($T_s = 25\text{ }^{\circ}\text{C}$; $I_f = 60\text{ mA}$)

档次 Grouping	主波长 Dominant Wavelength λ_{dom} (min.)	主波长 Dominant Wavelength λ_{dom} (max.)
1	627 nm	639 nm

标签信息 / Information on Label

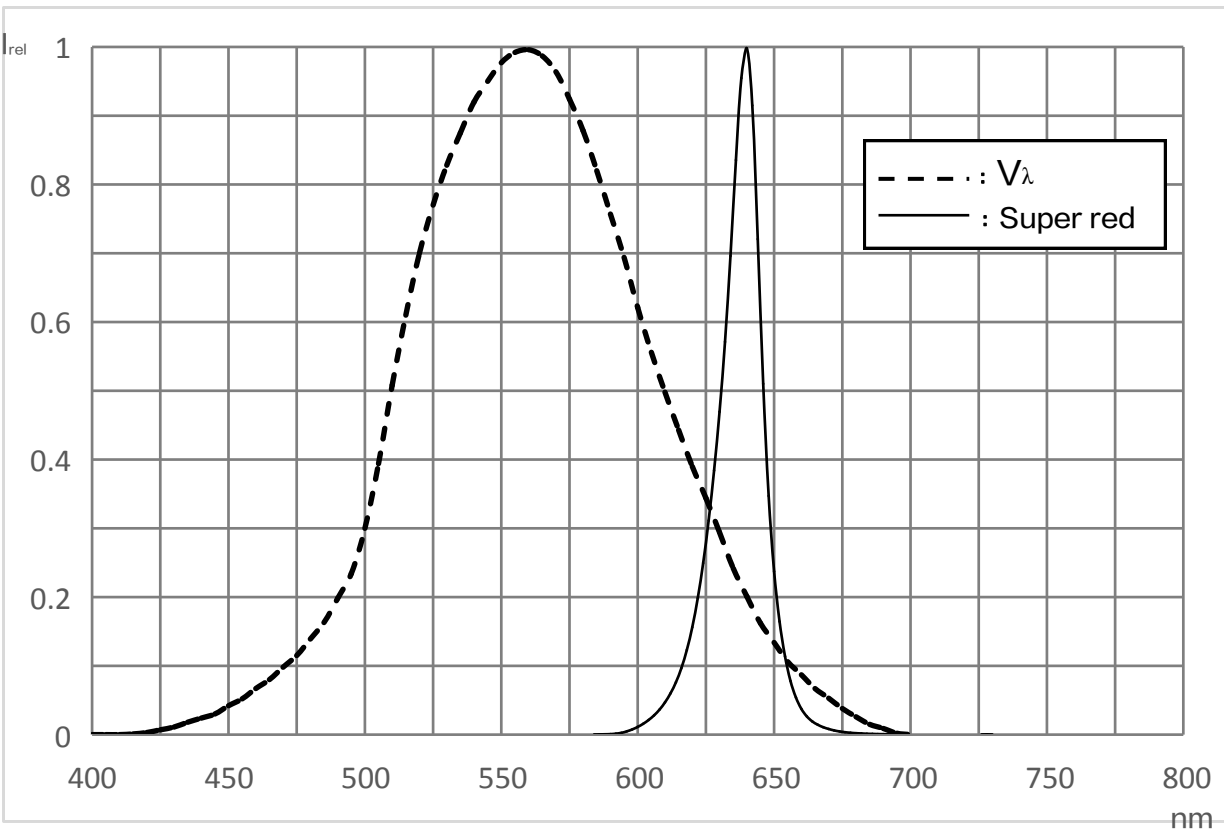
例 / E.g.: AB-1-2

亮度档 / Brightness	颜色 / Color	正向电压 / Forward Voltage
AB	1	2

相对发射光谱 - $V(\lambda)$ = 标准人眼视觉曲线

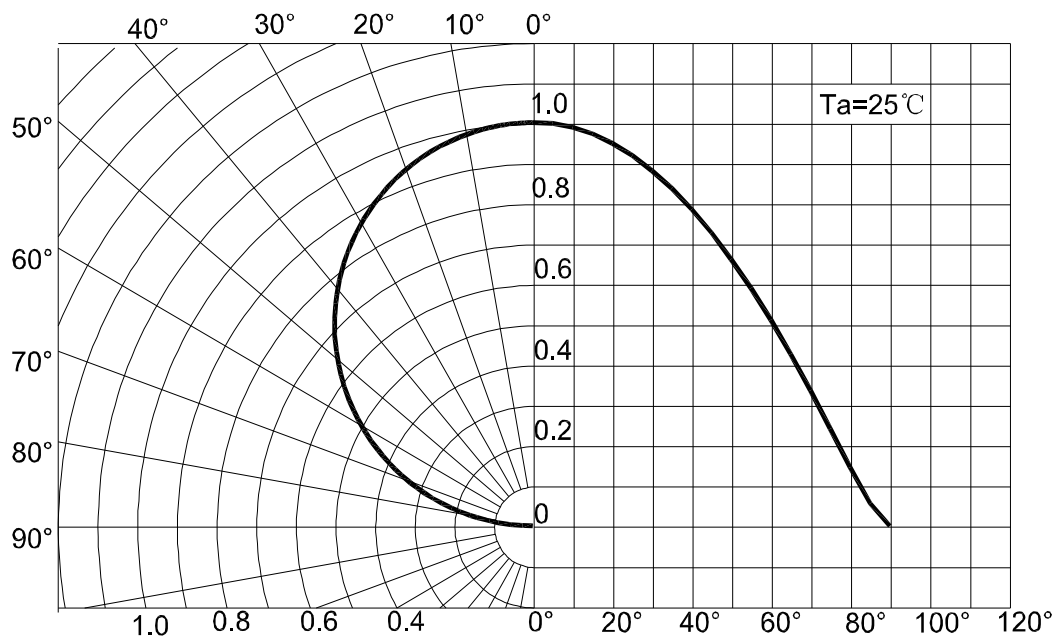
Relative Spectral Emission - $V(\lambda)$ = Standard Eye Response Curve

$I_{rel} = f(\lambda)$; $T_s = 25\text{ }^{\circ}\text{C}$; $I_f = 60\text{ mA}$



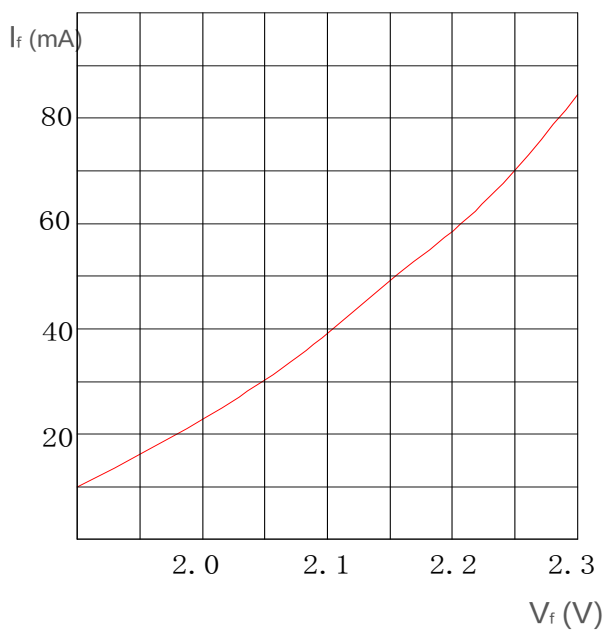
辐射特性 / Radiation Characteristics

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



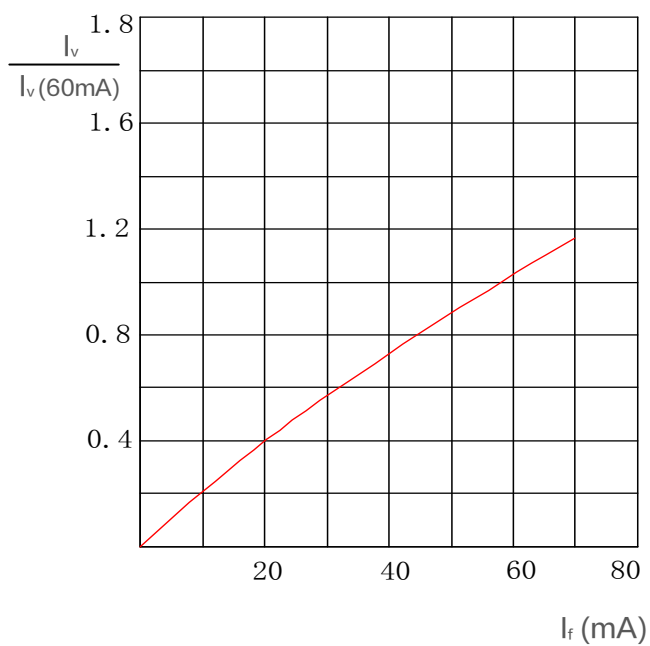
正向电流 / Forward Current

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



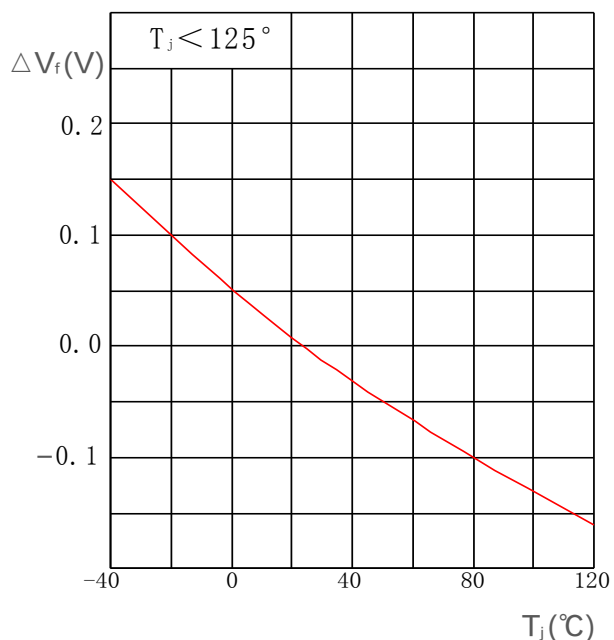
相对亮度特性曲线 / Relative Luminous Intensity

$$I_v/I_v(60\text{ mA}) = f(I_f); T_a = 25\text{ }^{\circ}\text{C}$$



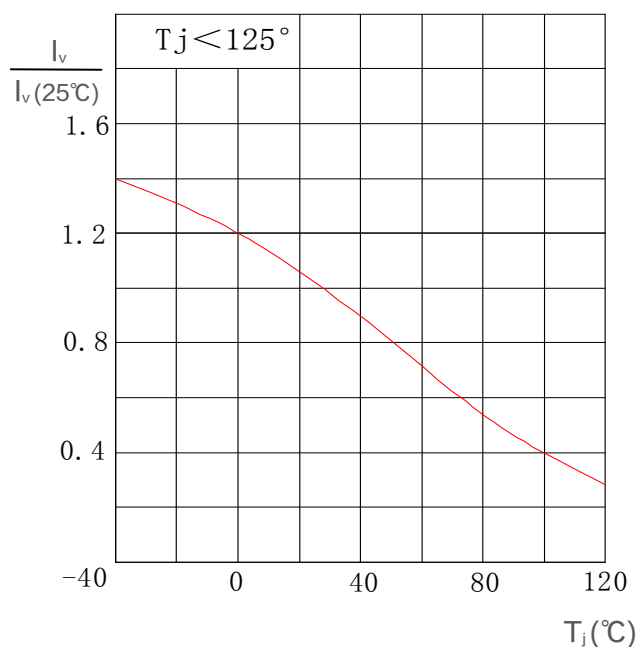
相对正向电压 / Relative Forward Voltage

$$\Delta V_f = V_f - V_f(25^\circ\text{C}) = f(T_j); I_f = 60\text{ mA}$$



相对发光强度 / Relative Luminous Intensity

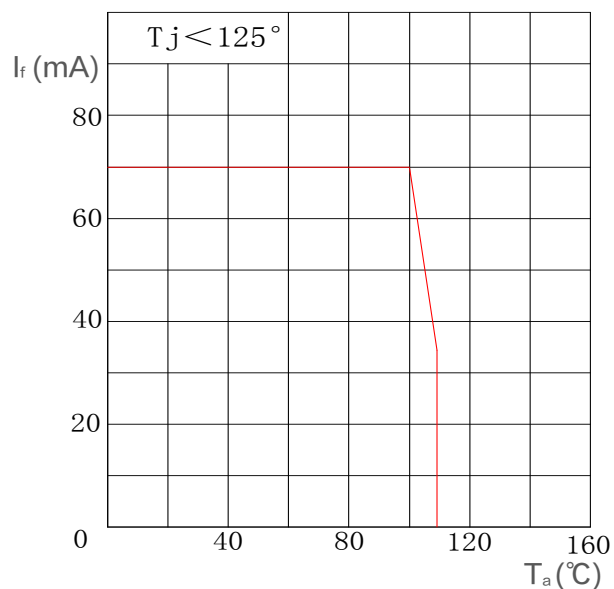
$$I_v/I_v(25^\circ\text{C}) = f(T_j); I_f = 60\text{ mA}$$



环境温度与正向电流

Ambient Temperature vs. Forward Current

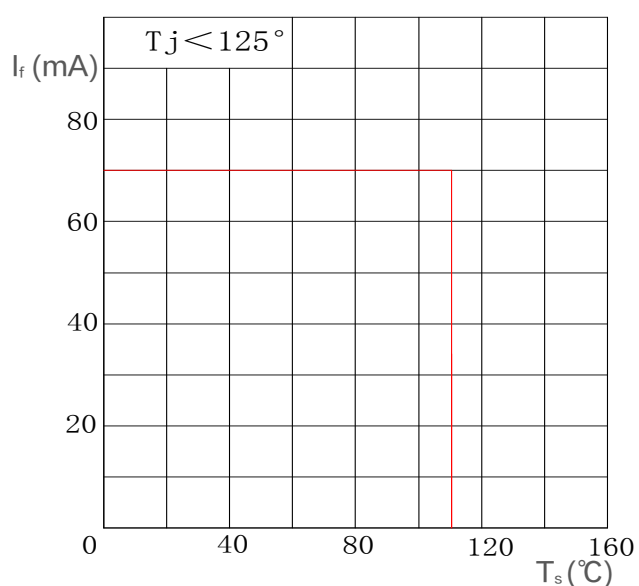
$$I_f = f(T_a)$$



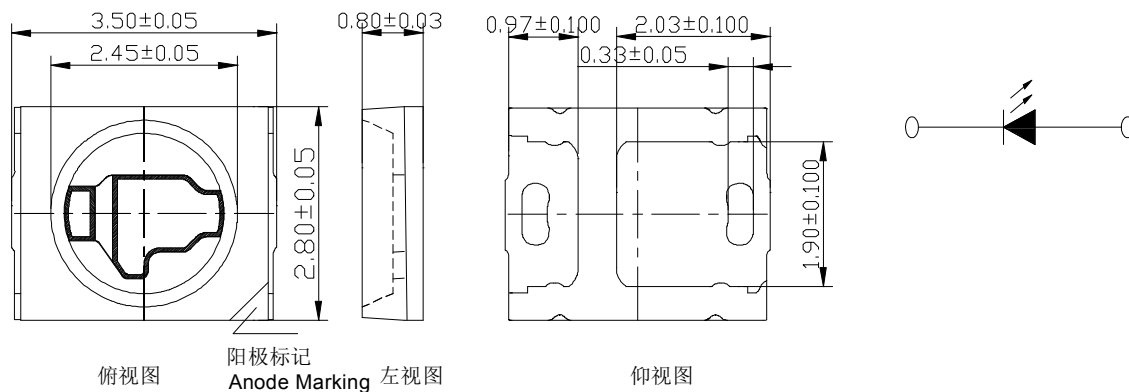
焊点温度与正向电流 / Solder Point Temperature vs. Forward Current

vs. Forward Current

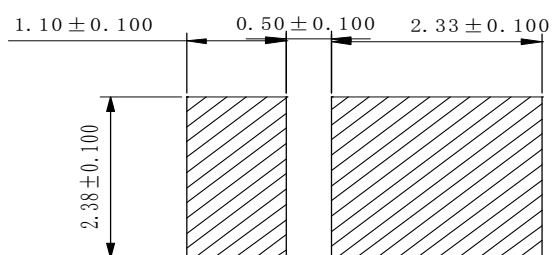
$$I_f = f(T_s)$$



产品尺寸 / Package Outline



推荐焊盘 / Recommended Solder Pad



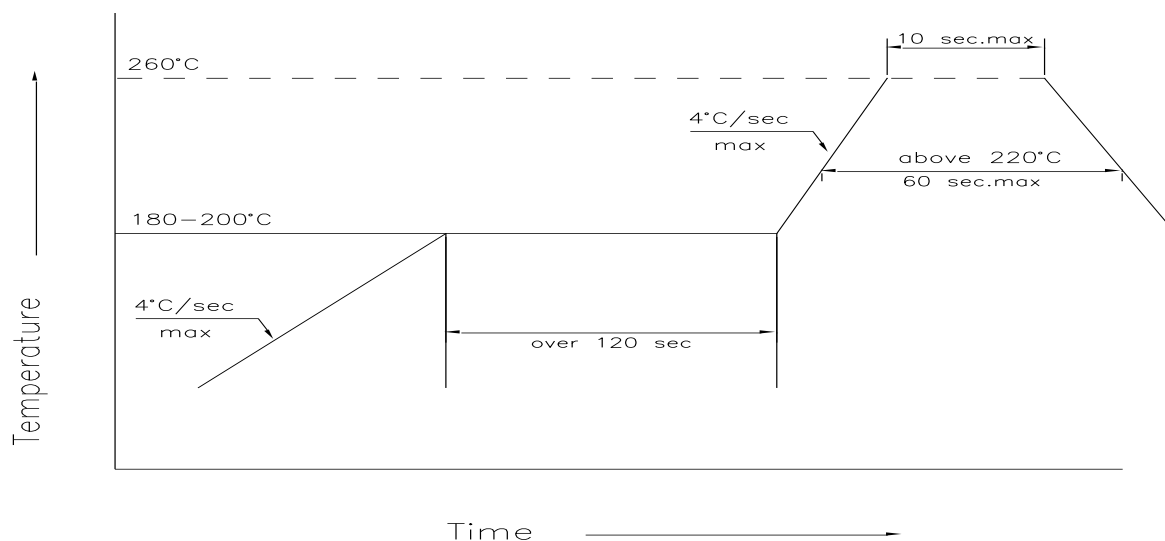
注释

■ 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 Assembly			单位 Unit
		min.	rec.	max.	
预热升温速率 Ramp-up Rate to Preheat 25°C–180°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

可靠性试验 / Reliability Test

试验项目 Test Item	试验方法Test Method	试验条件Test Condition	周期 Duration	试验数量 Number Of Test	试验结果 Test Result
光电测试 Test	产品规格书 Products Datasheet	25℃条件量测光电参数 Measurement of Photoelectric parameters At 25 °C	-	全部 ALL	Pass
外观检查 EV	JESD22 B- 101	显微镜观察 OM observation	-	全部 ALL	Pass
参数验证 PV	产品规格书 Products Datasheet	25℃条件量测光电参数 Measurement of photoelectric parameters at 25 °C	-	75	0/75
破坏性物理分 析 DPA	AEC-Q101- 004	化学开盖后,观察外观结构 After Decap, OM observation	-	10	0/10
人体模式静电 释放 ESD HBM	JESD22 A- 114	±2000V	2次 2 times	30	0/30
机器模式静电 释放 ESD MM	JESD 22- A115C	±200V	2次 2 times	30	0/30
尺寸测量 PD	JESD22 B- 100	参照样品种规格书 Per Products Datasheet	-	30	0/30
高温高湿通电 测试 WHTOL1	JESD22 A- 101	Ta=85° C/85% RH,开/关各30分 钟,If=350mA Ta=85°C 85%RH, 30min. on/30min. off,If=350mA	1000小时 1000 hours	78	0/78
功率温度循环 测试 PTC	JESD22 A- 105	Ta = -40°C ~85°C,驻留时间10分 钟,转换时间11分钟, 开/关各5分钟, If=350mA Ta=-40°C ~85°C,Dwell: 10min,Transition time: 11min, 5 min. on / 5 min. off, If=350mA	1000循环 1000 cyc	78	0/78
高温寿命测试 HTOL	JESD22- A108	Ta = 85° C, If=350mA	1000小时 1000 hours	78	0/78

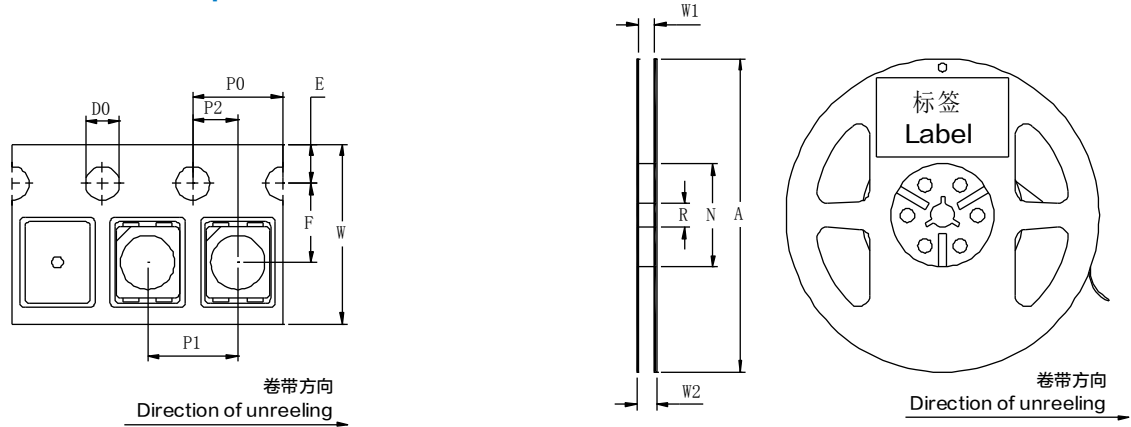
可靠性试验 / Reliability Test

热阻测试 TR	JEDEC JESD51-50 JESD51-51 JESD51-52	需使用不同导热材质分层测试 Need to use different thermal conductivity material layer test	-	10	14
金线拉力 WBP	MIL-STD- 750-2 Method 2037	参照MIL-STD-750-2Method 2037 Per MIL-STD-750-2Method 2037	-	15	Ppk>1.67
金球推力 WBS	AEC Q101- 003	参照AEC Q101-003 Per AEC Q101-003	-	15	Ppk>1.67
晶片推力 DS	MIL-STD- 750-2 Method 2017	参照MIL-STD-750-2Method 2017 Per MIL-STD-750-2Method 2017	-	15	Ppk>1.67

接受标准 / Acceptance Criteria

正向电压 Forward Voltage	Vf变化 $\leq \pm 10\%$ VF shift% $\leq \pm 10\%$ from initial value
光通量 Luminous Flux	LM光通量变化 $\leq \pm 20\%$, 备注: 某些应用环境 $\leq \pm 30\%$, 某些特定应用 (如内饰) $\leq \pm 50\%$ LM shift $\leq \pm 20\%$ from initial value, Note. $\pm 30\%$ may be acceptable for some application. $\pm 50\%$ may be acceptable only for some application (e.g., interior).
主波长 Dominant wavelength	主波长变化 $\leq \pm 2 \text{ nm}$ $\lambda \leq \pm 2 \text{ nm}$ according to initial value
外观 Visual	无迁移, 腐蚀, 分层等 No migration, corrosion, delamination, other

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: IEC 60286-3, EIA 481-D标准

Leader: min. 400 mm; Trailer: min. 160 mm; Requirement acc. to IEC 60286-3, EIA 481-D

卷带尺寸 / Tape Dimensions (mm)

W	P0	P1	P2	D0	E	F
8±0.1	4±0.1	4±0.1	2±0.05	1.50±0.05	1.75±0.1	3.50±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)

4000

条形码标签 / Barcode-Product-Label (BPL)



HONGLI TRONIC
鸿利光电

Device No:HVX-XXXXXXX



Lot No:XXXX-XXXXXXXX



Product No:XXXXXXXXXXXX



Qty:XXXXPCS D/C:XXXX





RoHS

BIN:XX-XX-XX

IV:XXXX-XXXX mcd

WLD:XXX-XXX nm

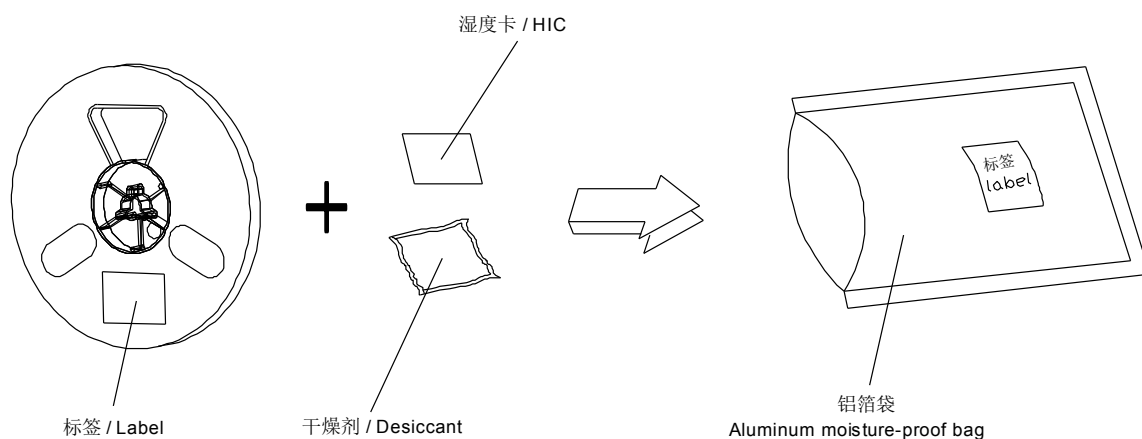
VF:XXX-XXX V



MSL:2



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



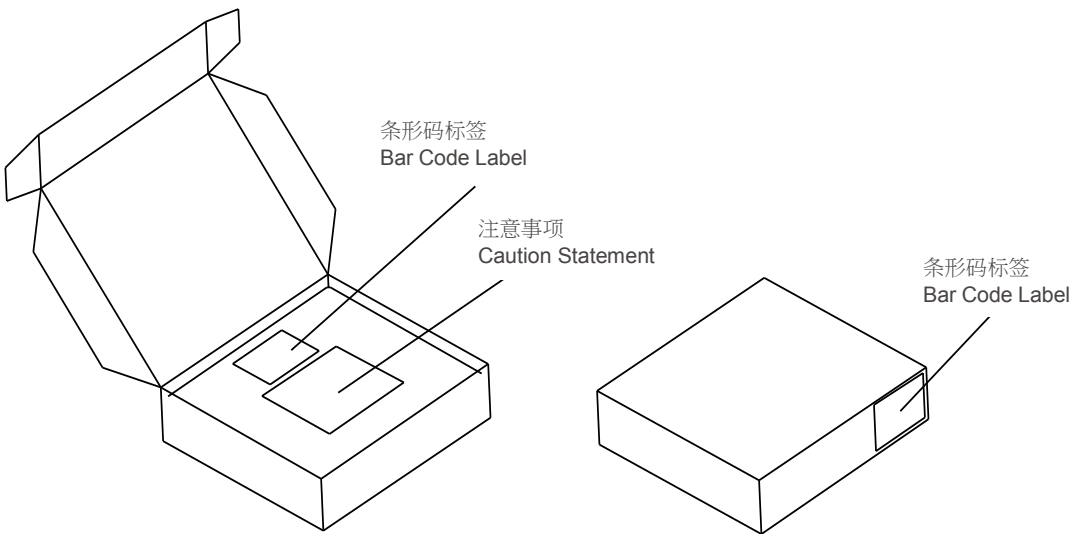
备注

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 $\pm 0.1 \text{ mm}$ 。

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

波长: 波长是在25ms脉冲电流并且内部在线性为 $\pm 0.5\text{nm}$ 和一个 $\pm 1\text{nm}$ 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脉冲电流并且内部在线性为 $\pm 8\%$ 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 $\pm 0.1\text{mm}$.

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

Wavelength: The wavelength is measured at a current pulse of typically 25 ms, with an internal reproducibility of $\pm 0.5 \text{ nm}$ and an expanded uncertainty of $\pm 1 \text{ nm}$ (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.