SPECIFICATIONS FOR HANGKE **LAMP**LED

Model: HK L-572SSWCW-1801A00

L-572SSWCW-1801A00

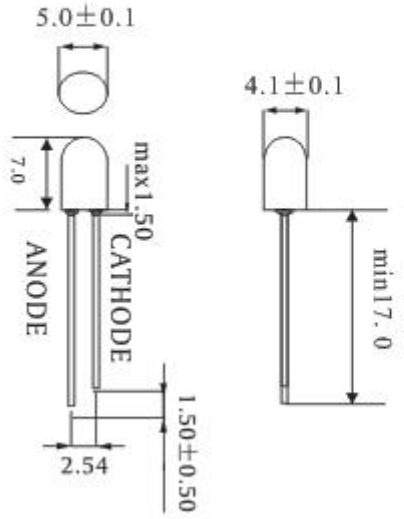
HangZhou HangKe Optoelectronics Co.,LTD.

Http://www.hkled.com 杭科光電

1. OUTLINE DIMENSIONS AND MATERIALS

尺寸和材料

Package Dimensions



- Lens Color : Water Clear
- Emitting Color : Super Bright White
- Chip material : InGaN
- Resin(Mold) : Epoxy Resin
- Leadframe : Ag plating Iron

Notes:

1. All dimensions are in millimeters.
2. Tolerance is ±0.25mm unless otherwise noted.
3. Protruded resin under flange is 1.0mm max.
4. Lead spacing is measured where the leads emerge from the package.

2. SPECIFICATIONS

Absolute Maximum Ratings

绝对最大额定值

Item 项目	Symbol 符号	Absolute Maximum Rating 绝对最大值	Unit 单位
Forward Current 正向电流	I_F	20	mA
Pulse Forward Current 正向脉冲电流[1]	I_{FP}	100	mA
Reverse Voltage 反向电压	V_R	5	V
Power Dissipation 耗散功率	P_D	70	mW
Junction Temperature c 结温	Tj	120	℃
Operating Temperature 操作温度	Topr	-25 ~ +85	℃
Storage Temperature 存储温度	Tstg	-40 ~ +100	℃
Soldering Temperature 焊接温度	Tsld	Manual : 260°C for 2sec. (max) 手工焊：最大260°C for 2sec.	

[1] IFP conditions: pluse width 10msec. and duty 0.1

IFP 条件: 脉冲宽度 10msec. , 占空比 0.1.

Initial Electrical/Optical Characteristics

初始光电特性

Item 项目	Symbol 符号	Condition 测试条件	Min. 最小值	Typ. 典型值	Max. 最大值	Unit 单位
Forward Voltage 正向电压	V_F	IF=20mA	2.9	/	3.5	V
Luminous Flux 光通量	Φ_V		5	/	7.5	lm
Viewing Angle 发光角度	2θ½		/	35/15	/	Deg.
Reverse Current 反向漏电流	I_R	VR=5V	/	/	10	uA

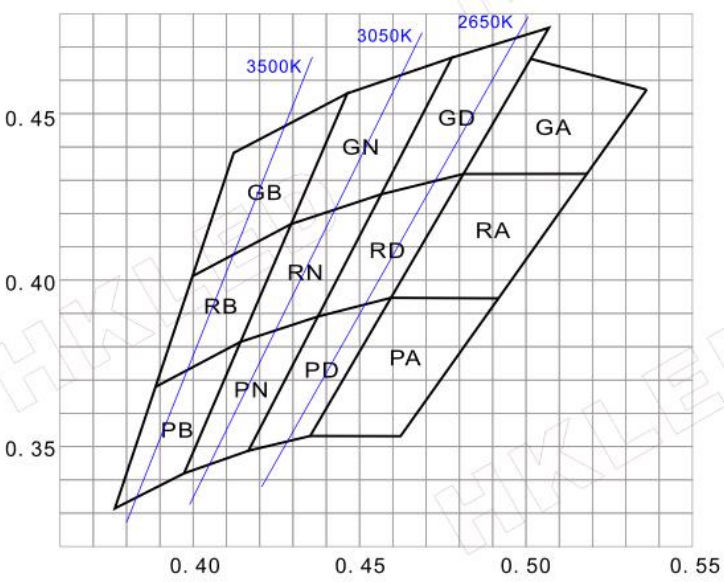
3. BIN CODE

Bin code form: $X_1X_2X_3X_4$

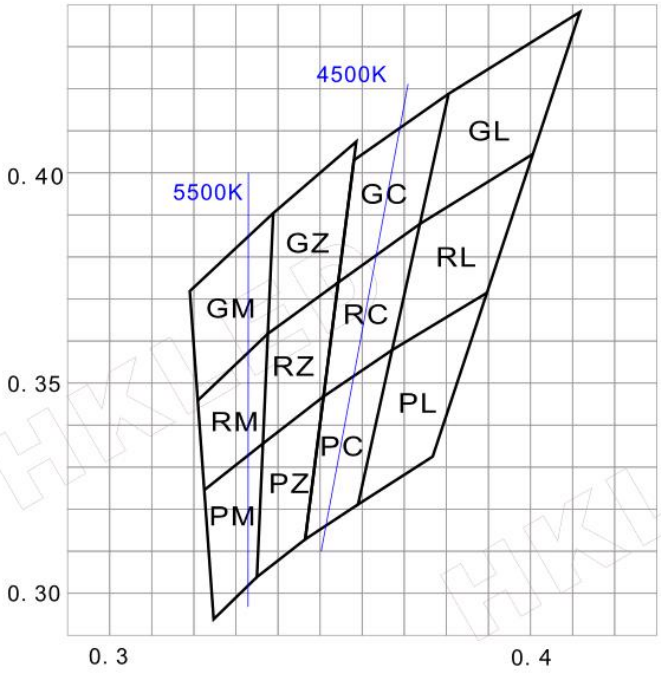
(1) X_1 : Luminous Flux (If=20mA)

X_1	Luminous Flux	Unit
F	**4.5-5.5**	lm
G	**5.5-6.5**	
H	6.5-8.0	

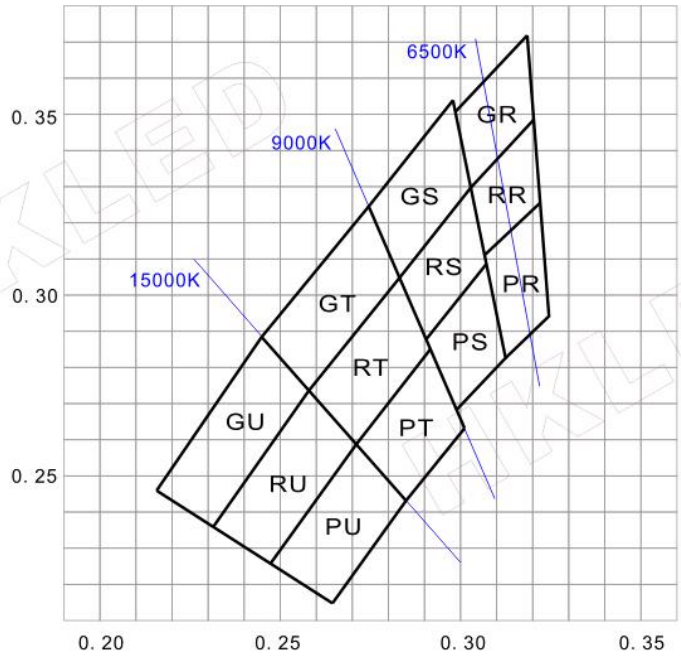
(2) X2 X3 : Correlated Color Temperature (If=20mA)



X_2X_3	X	Y	CCT	X_2X_3	X	Y	CCT
GA	0.5357	0.4573	<2580K	GD	0.5057	0.4736	2700K (2580-2870K)
	0.5024	0.4679			0.4772	0.4669	
	0.4813	0.4319			0.4562	0.4260	
	0.5179	0.4319			0.4813	0.4319	
RA	0.5179	0.4319		RD	0.4813	0.4319	
	0.4813	0.4319			0.4562	0.4260	
	0.4593	0.3944			0.4373	0.3893	
	0.4915	0.3944			0.4593	0.3944	
PA	0.4915	0.3944		PD	0.4593	0.3944	
	0.4593	0.3944			0.4373	0.3893	
	0.4349	0.3528			0.4163	0.3485	
	0.4622	0.3528			0.4349	0.3528	
GN	0.4772	0.4669	3000K (2870-3220K)	GB	0.4468	0.4559	3500K (3220-3710K)
	0.4468	0.4559			0.4118	0.4386	
	0.4299	0.4165			0.3996	0.4015	
	0.4562	0.4260			0.4299	0.4165	
RN	0.4562	0.4260		RB	0.4299	0.4165	
	0.4299	0.4165			0.3996	0.4015	
	0.4148	0.3814			0.3889	0.3690	
	0.4373	0.3893			0.4148	0.3814	
PN	0.4373	0.3893		PB	0.4148	0.3814	
	0.4148	0.3814			0.3889	0.3690	
	0.3978	0.3420			0.3767	0.3319	
	0.4163	0.3485			0.3978	0.3420	



X_2X_3	X	Y	CCT	X_2X_3	X	Y	CCT
GL	0.4118	0.4386	4000K (3710-4260K)	GC	0.3806	0.4189	4500K (4260-4745K)
	0.3806	0.4189			0.3586	0.4028	
	0.3736	0.3874			0.3548	0.3736	
	0.4006	0.4044			0.3736	0.3874	
RL	0.4006	0.4044		RC	0.3736	0.3874	
	0.3736	0.3874			0.3548	0.3736	
	0.3670	0.3578			0.3512	0.3465	
	0.3898	0.3716			0.3670	0.3578	
PL	0.3898	0.3716		PC	0.3670	0.3578	
	0.3670	0.3578			0.3512	0.3465	
	0.3588	0.3211			0.3467	0.3124	
	0.3767	0.3319			0.3588	0.3211	
GZ	0.3592	0.4070	5000K (4745-5310K)	GM	0.3387	0.3902	5700K (5310-6020K)
	0.3387	0.3902			0.3189	0.3721	
	0.3376	0.3616			0.3207	0.3462	
	0.3551	0.3760			0.3376	0.3616	
RZ	0.3551	0.3760		RM	0.3376	0.3616	
	0.3376	0.3616			0.3207	0.3462	
	0.3366	0.3369			0.3222	0.3243	
	0.3515	0.3487			0.3366	0.3369	
PZ	0.3515	0.3487		PM	0.3366	0.3369	
	0.3366	0.3369			0.3222	0.3243	
	0.3352	0.3033			0.3243	0.2938	
	0.3467	0.3124			0.3352	0.3033	



X_2X_3	X	Y	CCT	X_2X_3	X	Y	CCT
GR	0.3189	0.3721	6500K (6020-7040K)	GS	0.2979	0.3537	8000K (7040-9000K)
	0.2986	0.3506			0.2743	0.3243	
	0.3028	0.3304			0.2830	0.3050	
	0.3205	0.3491			0.3029	0.3299	
RR	0.3205	0.3491		RS	0.3029	0.3299	
	0.3028	0.3304			0.2830	0.3050	
	0.3068	0.3113			0.2906	0.2880	
	0.3221	0.3261			0.3073	0.3089	
PR	0.3221	0.3261		PS	0.3073	0.3089	
	0.3068	0.3113			0.2906	0.2880	
	0.3128	0.2826			0.2991	0.2690	
	0.3243	0.2938			0.3128	0.2826	
GT	0.2743	0.3243	12000K (9000-15000K)	GU	0.2458	0.2882	>15000K
	0.2458	0.2882			0.2159	0.2459	
	0.2582	0.2737			0.2315	0.2358	
	0.2830	0.3050			0.2582	0.2737	
RT	0.2830	0.3050		RU	0.2582	0.2737	
	0.2582	0.2737			0.2315	0.2358	
	0.2707	0.2589			0.2472	0.2257	
	0.2917	0.2584			0.2707	0.2589	
PT	0.2917	0.2854		PU	0.4562	0.4260	
	0.2707	0.2589			0.4299	0.4165	
	0.2849	0.2429			0.4148	0.3814	
	0.3015	0.2638			0.4373	0.3893	

(3) X_4 : CRI Rank (If=20mA)

X_4	CRI
B	<60
C	60-80
F	80-90
H	90-100

4. RELIABLITY TESTS

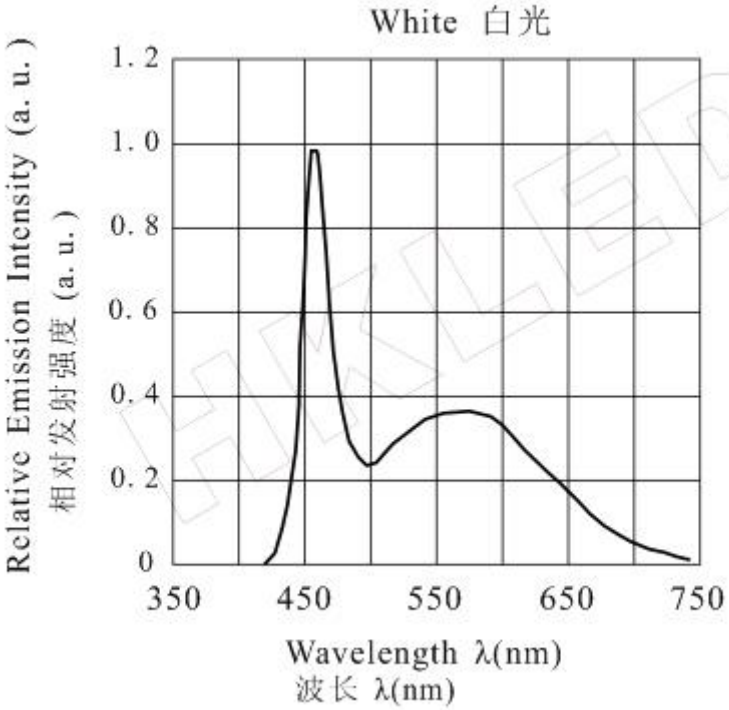
可靠性测试

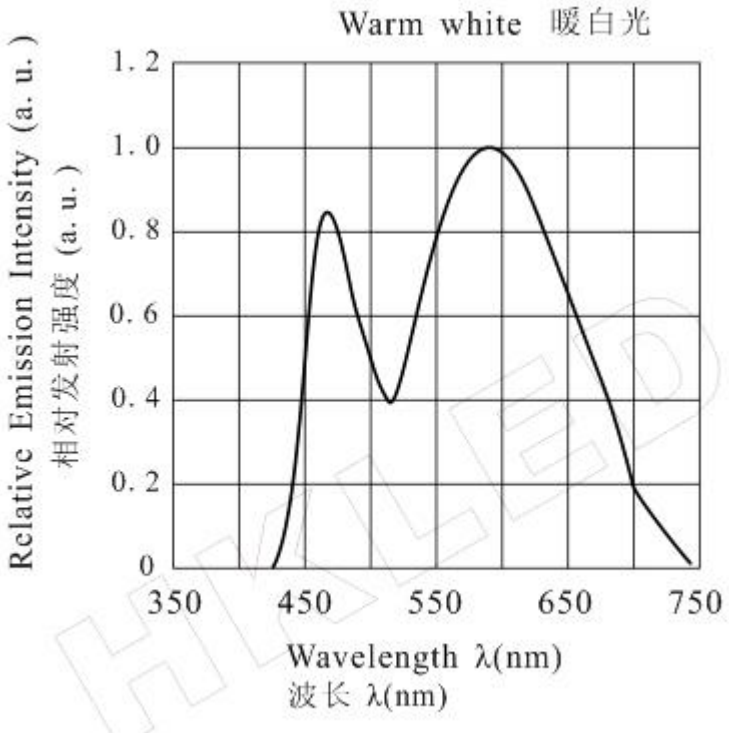
Item	Applicable Standards	Test Conditions	Sample	Ac/ Re
Temperature Cycle 冷热循环	JEITA ED-4701 100 105	-40℃ →25℃ →100℃ →25℃; 30min 5min 30min 5min 100cycle	50	0/ 1
High Temperature Storage 高温存储	JEITA ED-4701 200 201	100℃； 1000h	50	0/ 1
Temperature Humidity Storage 高温高湿	JEITA ED-4701 100 103	60℃； RH=90%； 1000h	50	0/ 1
Low Temperature Storage 低温存储	JEITA ED-4701 200 202	-40℃； 1000h	50	0/ 1
Life Test 寿命测试	—	25℃； I_F=20mA； 1000h	50	0/ 1
High Temperature Operating 高温工作	—	85℃； I_F=20mA； 1000h	50	0/ 1
Low Temperature Operating 低温工作	—	-30℃； I_F=20mA； 1000h	50	0/ 1

5. TYPICAL INITIAL OPTICAL/ELECTRICAL CHARACTERISTICS

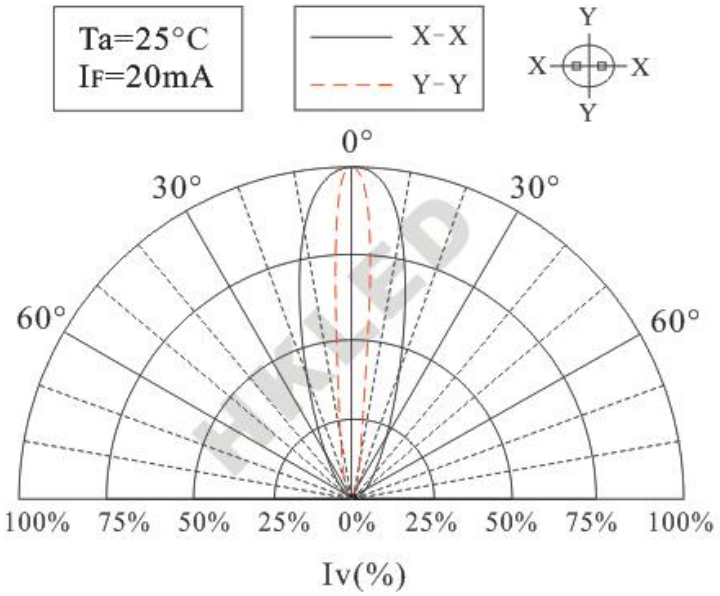
典型光电特性

Spectrum 光谱 (Ta=25℃ IF=20mA)



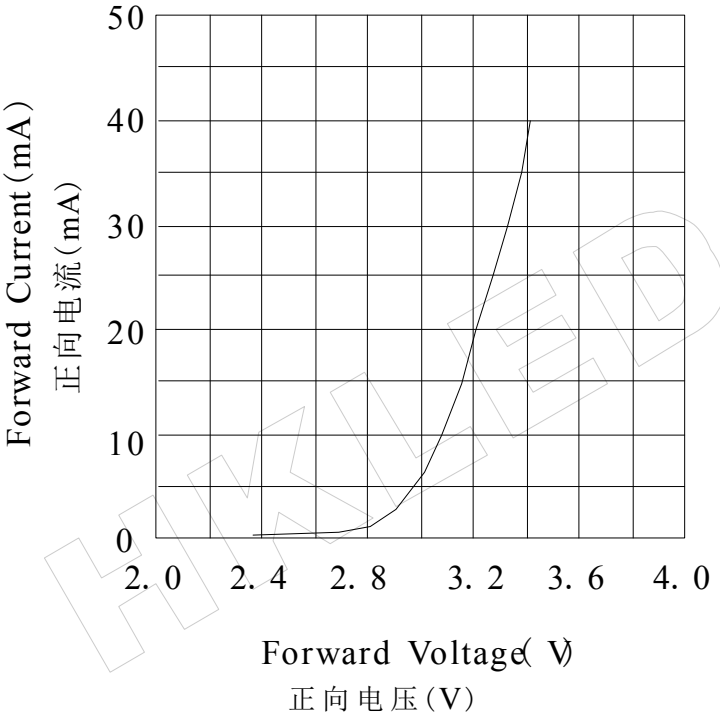


Directivity 配光曲线

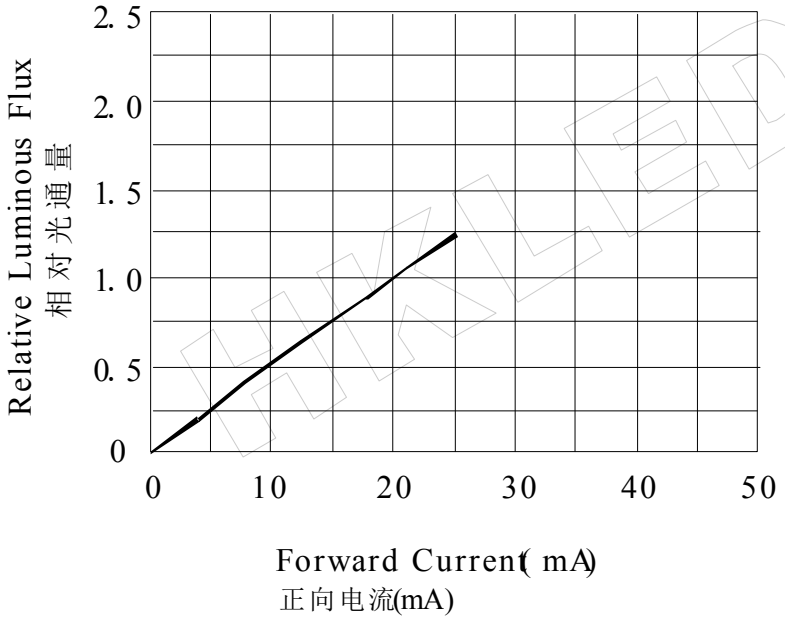


Forward Current & Forward Voltage

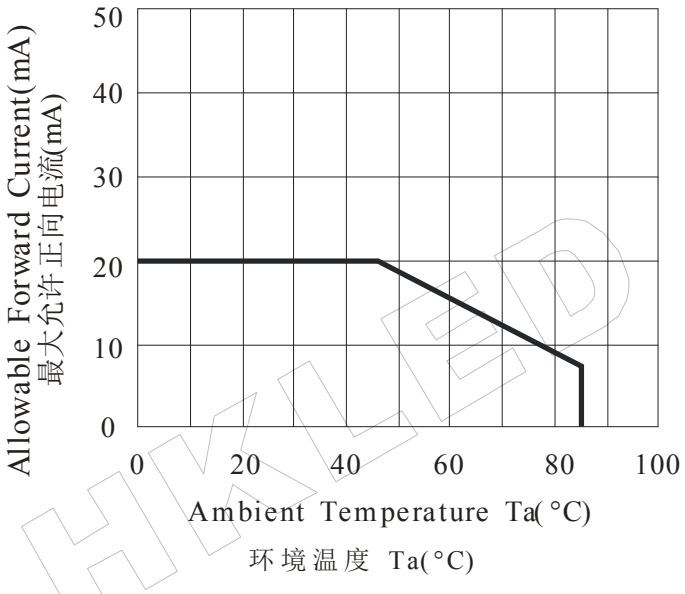
伏安特性曲线 (Ta=25℃)



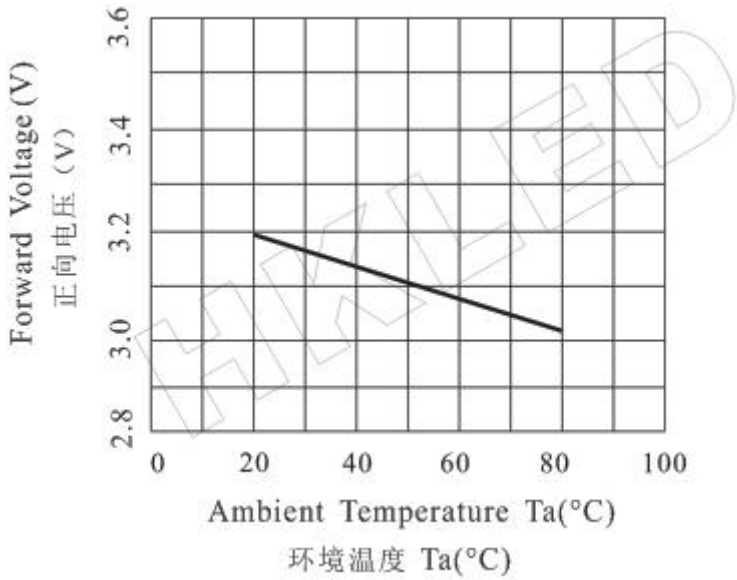
Relative Luminous Flux & Forward Current
相对光通量与正向电流关系特性



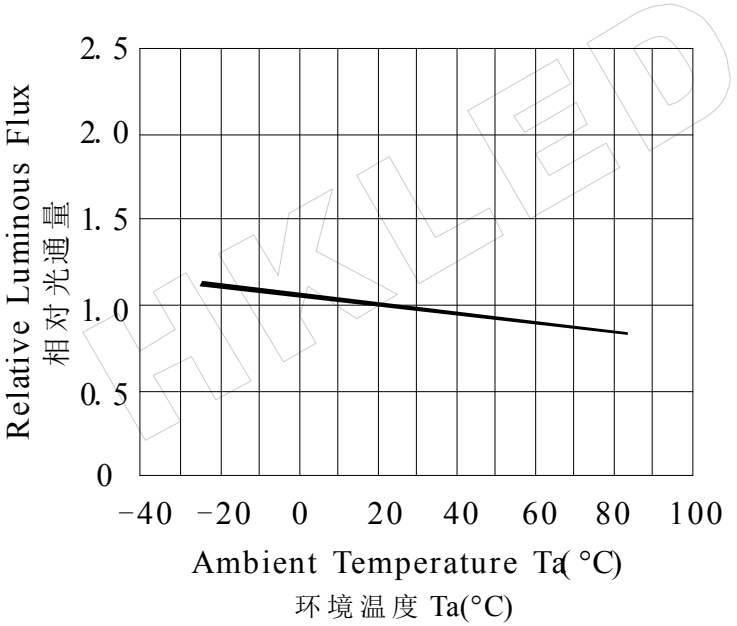
Allowable Forward Current & Ambient Temperature
最大允许正向电流和环境温度关系特性



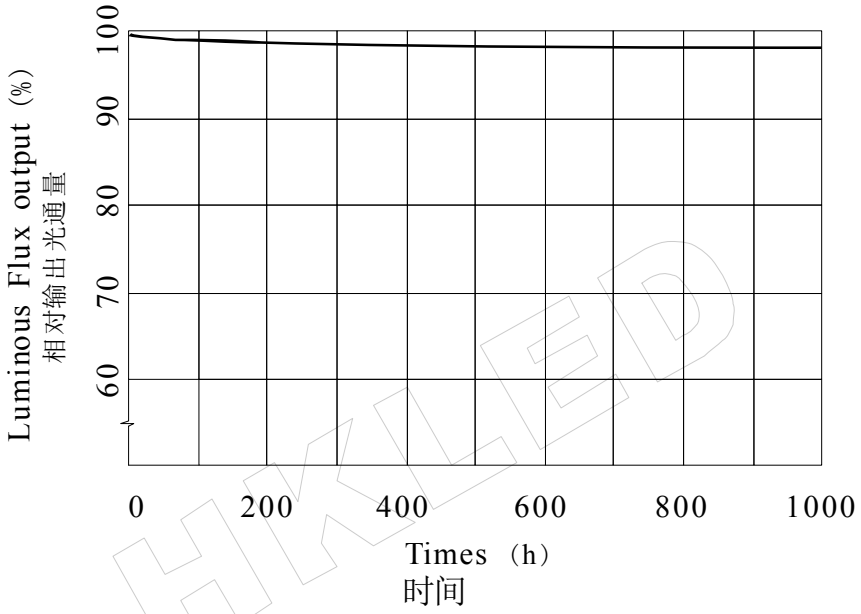
Forward Voltage & Ambient Temperature
正向电压和环境温度关系特性



Relative Luminous Flux & Ambient Temperature
相对光通量和环境温度关系特性



Luminous Flux Attenuation
光衰特性 (IF=20mA Ta=25°C)



6. CAUTIONS

(1) Lead Forming

When forming leads, the leads should be bent at a point at least 2.0mm from the base of the epoxy bulb. Do not use the base of the leadframe as a fulcrum during lead forming.

When forming leads, hold the leadframes tightly not to give stress to the inside of the resin and the leadframe before soldering.

Do not apply any bending stress to the base of the lead. The stress to the base may damage the LEDs' characteristics or it may break the LEDs.

When mounting the LEDs onto a printed circuit board, theholes on the circuit board should be exactly aligned with the leads of the LEDs. If the LEDs are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the LEDs.

(2) Storage

The LEDs should be stored at 30°C or less and 70%RH or the storage life limits are 3 months. If the LEDs are stored for 3 months or more, they can be stored for a year in a sealed container with moisture absorbent material.

HangKe LED leadframes are comprised of a silver plated Iron. The silversurface may be affected by environments which contain corrosive gases and so on. Please avoid conditions which may cause the LED to corrode, tarnish or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the LEDs be used as soon as possible.

Please avoid rapid transitions in ambient temperature, especially, in high humidity environments.

(3) Static Electricity

Static electricity or surge voltage damages the LEDs. It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

All devices, equipment and machinery must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LEDs.

When inspecting the final products in which LEDs were assembled, it is recommended to check whether the assembled LEDs are damaged by static electricity or not. It is easy to find static-damaged LEDs by a light-on test or a VF test at a lower current (below 1mA is recommended).

Damaged LEDs will show some unusual characteristics such as the leak current remarkably increases, the forward voltage becomes lower, or the LEDs do not light at the low current.

(4) Soldering Conditions

Solder the LED no closer than 2.0mm from the base of the epoxy bulb.

Recommended soldering conditions 260°C for 2 seconds Max.

Recommended through-hole diameter is 1.1mm.

Do not apply any stress to the lead particularly when heated.

The LEDs must not be repositioned after soldering.

After soldering the LEDs, the epoxy bulb should be protected from mechanical shock or vibration until the LEDs return to room temperature.

It is possible to solder LEDs directly to the PC board. Take enough care not to damage the resin because of the stress of the bowed PC board.

When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.

Cut the LED leadframes at room temperature. Cutting the leadframes at high temperatures may cause failure of the LEDs.

(5) Cleaning

It is recommended that isopropyl alcohol be used as a solvent for cleaning the LEDs. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the resin or not. Freon solvents should not be used to clean the LEDs because of worldwide regulations.

Do not clean the LEDs by the ultrasonic. When it is absolutely necessary, the influence of ultrasonic cleaning on the LEDs depends on factors such as ultrasonic power and the assembled condition. Before cleaning, a pre-test should be done to confirm whether any damage to the LEDs will occur.

Note:

The appearance and specifications of the product may be modified for improvement without notice.