



SMD SPECIFICATION

Part No./型号 PLCC3014-W3-U



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

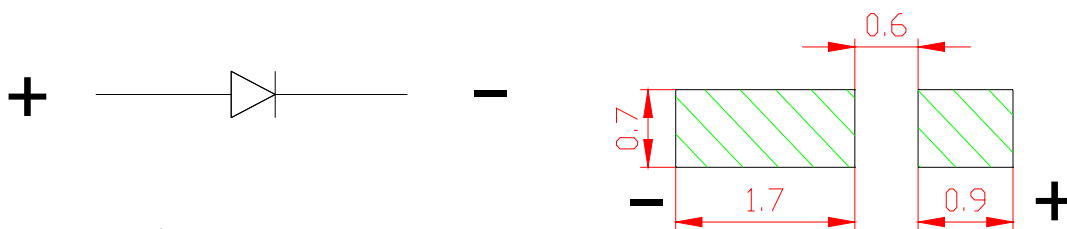
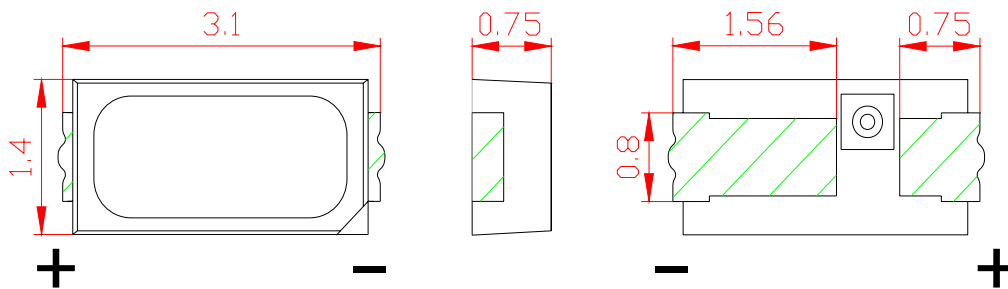
1、Features/特征:

- Emitting Color/发光颜色: White/白色
- Lens Type/封装特性: Yellow Diffused/黄色散射
- Device Outline/外形特征: 3.1×1.4×0.75 (unit:mm)
- HBM ESD:Class 2/人体抗静电指标: Class 2
- Pb-Free/无铅
- RoHS compliant/符合 RoHS 标准

2、Applications/应用:

- Backlight for Mobile, Machine Vision, LCD Display/手机、电话、显示屏背光源
- Indoor Lighting /室内照明

3、Outline Dimensions/产品外形尺寸:



Notes: (备注)
Tolerance is $\pm 0.1\text{mm}$ (公差 $\pm 0.1\text{mm}$)

参考焊盘尺寸



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4、Absolute maximum ratings/极限参数 (Ta = 25°C):

Parameter 参数	Symbol 符号	Value 参数	Unit 单位
Power Dissipation 损耗功率	Pd	100	mW
Reverse Voltage 反向电压	VR	5	V
Pulse Current 正向峰值电流 ^[1]	IFp	100	mA
Forward Current 正向工作电流	IFm	30	mA
Operating Temperature 工作温度范围	Topr	- 40 ~ +85	°C
Storage Temperature 储存温度范围	Tstr	- 40 ~ +100	°C

Notes/备注: [1]. 0.1ms pulse width, 1/10 Duty. / [1] 脉冲宽度0.1ms, 占空比1/10。

5、Electrical and optical characteristics/光电参数 (Ta = 25°C):

Parameter 参数	Symbol 符号	Test Condition 测试条件	Value 参数			Unit 单位
			Min.	Typ.	Max.	
Forward Voltage 正向电压	VF	IF = 30mA	—	3.2	3.6	V
Reverse Current 反向电流	IR	VR = 5V	—	—	30	μ A
Color Correlated Temperature 色温	CCT	IF = 30mA	2580	—	4730	K
Luminous Flux 光通量	Φ	IF = 30mA	—	10.5	—	Lm
color rendering index 显色指数	Ra	IF = 30mA	80	—	—	—
Viewing Angle 发光指向角	2 θ 1/2	IF = 30mA	—	120	—	Deg.

Notes/备注: Tolerance 误差: VF: ±0.10V, Φ: ±15%, 其它: ±5%



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6、Product Ranks/产品分档范围:

亮度分档标准		电压分档标准	
光通量 Φ (Lm) IF=30mA	代表符号	正向电压 V_F 值(V) IF=30mA	代表符号
9-10	L9	2.80--2.90	N
10-11	L10	2.90--3.00	P
11-12	L11	3.00—3.10	Q
		3.10—3.20	R
		3.20—3.30	S
		3.30—3.40	T
		3.40—3.50	U
		3.50—3.60	V

Notes/备注: Rank error/分档误差: V_F : $\pm 0.10V$, Φ : $\pm 15\%$



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色坐标分档:

色坐标误差: ± 0.01

代码	轴	参数				代码	轴	参数			
Wf1	X	0.3559	0.3547	0.3642	0.3659	Wf2	X	0.3547	0.3535	0.3625	0.3642
	Y	0.3826	0.3736	0.3805	0.3899		Y	0.3736	0.3646	0.3710	0.3805
Wf3	X	0.3535	0.3523	0.3608	0.3625	Wf4	X	0.3523	0.3512	0.3591	0.3608
	Y	0.3646	0.3555	0.3616	0.3710		Y	0.3555	0.3466	0.3521	0.3616
Wf5	X	0.3512	0.3500	0.3573	0.3591	Wf6	X	0.3659	0.3642	0.3736	0.3757
	Y	0.3466	0.3374	0.3427	0.3521		Y	0.3899	0.3805	0.3874	0.3973
Wf7	X	0.3642	0.3625	0.3714	0.3736	Wf8	X	0.3625	0.3608	0.3692	0.3714
	Y	0.3805	0.3710	0.3775	0.3874		Y	0.3710	0.3616	0.3676	0.3775
Wf9	X	0.3608	0.3591	0.3670	0.3692	Wf10	X	0.3591	0.3573	0.3648	0.3670
	Y	0.3616	0.3521	0.3578	0.3676		Y	0.3521	0.3427	0.3479	0.3578
Wg1	X	0.3757	0.3736	0.3826	0.3852	Wg2	X	0.3736	0.3714	0.3799	0.3826
	Y	0.3973	0.3874	0.3930	0.4033		Y	0.3874	0.3775	0.3828	0.3930
Wg3	X	0.3714	0.3692	0.3772	0.3799	Wg4	X	0.3692	0.3670	0.3746	0.3772
	Y	0.3775	0.3676	0.3726	0.3828		Y	0.3676	0.3578	0.3624	0.3726
Wg5	X	0.3670	0.3648	0.3719	0.3746	Wg6	X	0.3852	0.3826	0.3916	0.3947
	Y	0.3578	0.3479	0.3521	0.3624		Y	0.4033	0.3930	0.3987	0.4093
Wg7	X	0.3826	0.3799	0.3884	0.3916	Wg8	X	0.3799	0.3772	0.3853	0.3884
	Y	0.3930	0.3828	0.3881	0.3987		Y	0.3828	0.3726	0.3775	0.3881
Wg9	X	0.3772	0.3746	0.3822	0.3853	Wg10	X	0.3746	0.3719	0.3790	0.3822
	Y	0.3726	0.3624	0.3670	0.3775		Y	0.3624	0.3521	0.3564	0.3670
Wg11	X	0.3947	0.3916	0.4005	0.4042	Wg12	X	0.3916	0.3884	0.3969	0.4005
	Y	0.4093	0.3987	0.4044	0.4153		Y	0.3987	0.3881	0.3934	0.4044
Wg13	X	0.3884	0.3853	0.3934	0.3969	Wg14	X	0.3853	0.3822	0.3898	0.3934
	Y	0.3881	0.3775	0.3825	0.3934		Y	0.3775	0.3670	0.3716	0.3825
Wg15	X	0.3822	0.3790	0.3862	0.3898	Wh1	X	0.4023	0.4128	0.4097	0.3997
	Y	0.3670	0.3564	0.3606	0.3716		Y	0.4097	0.4148	0.4065	0.4015
Wh2	X	0.3997	0.4097	0.4067	0.3970	Wh3	X	0.3970	0.4067	0.4036	0.3943
	Y	0.4015	0.4065	0.3982	0.3934		Y	0.3934	0.3982	0.3898	0.3853
Wh4	X	0.3943	0.4036	0.4006	0.3916	Wh5	X	0.3916	0.4006	0.3975	0.3890
	Y	0.3853	0.3898	0.3815	0.3772		Y	0.3772	0.3815	0.3731	0.3690
Wh6	X	0.3890	0.3975	0.3945	0.3863	Wh7	X	0.4128	0.4232	0.4198	0.4097
	Y	0.3690	0.3731	0.3648	0.3609		Y	0.4148	0.42	0.4115	0.4065
Wh8	X	0.4097	0.4198	0.4164	0.4067	Wh9	X	0.4067	0.4164	0.4129	0.4036
	Y	0.4065	0.4115	0.4029	0.3982		Y	0.3982	0.4029	0.3944	0.3898



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Part No./型号 PLCC3014-W3-U

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Wh10	X	0.4036	0.4129	0.4095	0.4006	Wh11	X	0.4006	0.4095	0.4061	0.3975
	Y	0.3898	0.3944	0.3858	0.3815		Y	0.3815	0.3858	0.3773	0.3731
Wh12	X	0.3975	0.4061	0.4027	0.3945	Wh13	X	0.4232	0.4337	0.4299	0.4198
	Y	0.3731	0.3773	0.3687	0.3648		Y	0.42	0.4253	0.4165	0.4115
Wh14	X	0.4198	0.4299	0.4261	0.4164	Wh15	X	0.4164	0.4261	0.4230	0.4129
	Y	0.4115	0.4165	0.4077	0.4029		Y	0.4029	0.4077	0.3989	0.3944
Wh16	X	0.4129	0.4230	0.4185	0.4095	Wh17	X	0.4095	0.4185	0.4147	0.4061
	Y	0.3944	0.3989	0.3902	0.3858		Y	0.3858	0.3902	0.3814	0.3773
Wh18	X	0.4061	0.4147	0.4109	0.4027	Wi1	X	0.4337	0.4428	0.4387	0.4299
	Y	0.3773	0.3814	0.3726	0.3687		Y	0.4253	0.4286	0.4197	0.4165
Wi2	X	0.4299	0.4387	0.4346	0.4261	Wi3	X	0.4261	0.4346	0.4304	0.4230
	Y	0.4165	0.4197	0.4108	0.4077		Y	0.4077	0.4108	0.4018	0.3989
Wi4	X	0.4230	0.4304	0.4263	0.4185	Wi5	X	0.4185	0.4263	0.4222	0.4147
	Y	0.3989	0.4018	0.3929	0.3902		Y	0.3902	0.3929	0.3840	0.3814
Wi6	X	0.4147	0.4222	0.4181	0.4109	Wi7	X	0.4428	0.4519	0.4474	0.4387
	Y	0.3814	0.3840	0.3751	0.3726		Y	0.4286	0.4319	0.4238	0.4197
Wi8	X	0.4387	0.4474	0.4430	0.4346	Wi9	X	0.4346	0.4430	0.4386	0.4304
	Y	0.4197	0.4238	0.4138	0.4108		Y	0.4108	0.4138	0.4047	0.4018
Wi10	X	0.4304	0.4386	0.4342	0.4263	Wi11	X	0.4263	0.4342	0.4298	0.4222
	Y	0.4018	0.4047	0.3957	0.3929		Y	0.3929	0.3957	0.3867	0.3840
Wi12	X	0.4222	0.4298	0.4253	0.4181	Wi13	X	0.4519	0.4609	0.4562	0.4474
	Y	0.3840	0.3867	0.3776	0.3751		Y	0.4319	0.4352	0.4260	0.4238
Wi14	X	0.4474	0.4562	0.4515	0.4430	Wi15	X	0.4430	0.4515	0.4467	0.4386
	Y	0.4238	0.4260	0.4168	0.4138		Y	0.4138	0.4168	0.4076	0.4047
Wi16	X	0.4386	0.4467	0.4420	0.4342	Wi17	X	0.4342	0.4420	0.4373	0.4298
	Y	0.4047	0.4076	0.3983	0.3957		Y	0.3957	0.3983	0.3893	0.3867
Wi18	X	0.4298	0.4373	0.4326	0.4253	Wj1	X	0.4609	0.4673	0.4625	0.4562
	Y	0.3867	0.3893	0.3801	0.3776		Y	0.4352	0.4365	0.4275	0.426
Wj2	X	0.4562	0.4625	0.4576	0.4515	Wj3	X	0.4515	0.4576	0.4526	0.4467
	Y	0.426	0.4275	0.4182	0.4168		Y	0.4168	0.4182	0.4090	0.4076
Wj4	X	0.4467	0.4526	0.4477	0.4420	Wj5	X	0.4420	0.4477	0.4423	0.4373
	Y	0.4076	0.4090	0.3998	0.3983		Y	0.3983	0.3998	0.3905	0.3893
Wj6	X	0.4373	0.4423	0.4379	0.4326	Wj7	X	0.4673	0.4739	0.4688	0.4625
	Y	0.3893	0.3905	0.3813	0.3801		Y	0.4365	0.4382	0.4290	0.4275
Wj8	X	0.4625	0.4688	0.4636	0.4576	Wj9	X	0.4576	0.4636	0.4585	0.4526
	Y	0.4275	0.4290	0.4197	0.4182		Y	0.4182	0.4197	0.4104	0.4090

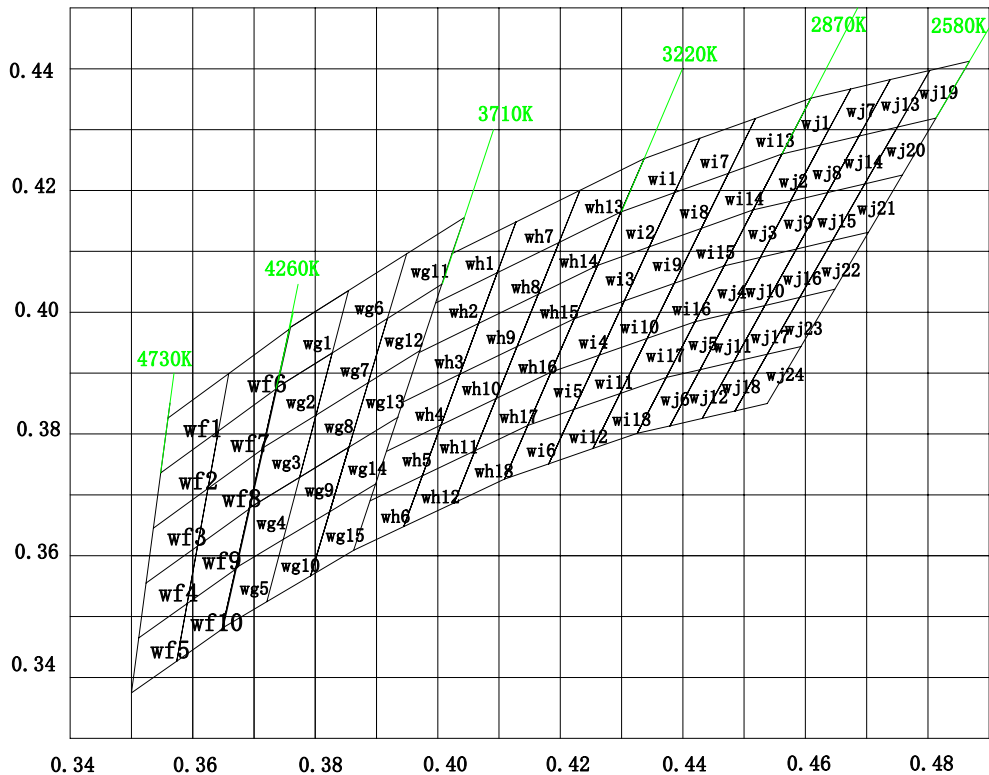


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代码	轴	参数				代码	轴	参数			
Wj10	X	0.4526	0.4585	0.4534	0.4477	Wj11	X	0.4477	0.4534	0.4483	0.4423
	Y	0.4090	0.4104	0.4011	0.3998		Y	0.3998	0.4011	0.3918	0.3905
Wj12	X	0.4423	0.4483	0.4432	0.4379	Wj13	X	0.4739	0.4803	0.4750	0.4688
	Y	0.3905	0.3918	0.3826	0.3813		Y	0.4382	0.4398	0.4304	0.4290
Wj14	X	0.4688	0.4750	0.4697	0.4636	Wj15	X	0.4636	0.4697	0.4644	0.4585
	Y	0.4290	0.4304	0.4210	0.4197		Y	0.4197	0.4210	0.4118	0.4104
Wj16	X	0.4585	0.4644	0.4591	0.4534	Wj17	X	0.4534	0.4591	0.4538	0.4483
	Y	0.4104	0.4118	0.4024	0.4011		Y	0.4011	0.4024	0.3931	0.3918
Wj18	X	0.4483	0.4538	0.4485	0.4432	Wj19	X	0.4803	0.4868	0.4813	0.4750
	Y	0.3918	0.3931	0.3838	0.3826		Y	0.4398	0.4413	0.4319	0.4304
Wj20	X	0.4750	0.4813	0.4758	0.4697	Wj21	X	0.4697	0.4758	0.4703	0.4644
	Y	0.4304	0.4319	0.4225	0.4210		Y	0.4210	0.4225	0.4132	0.4118
Wj22	X	0.4644	0.4703	0.4648	0.4591	Wj23	X	0.4591	0.4648	0.4593	0.4538
	Y	0.4118	0.4132	0.4038	0.4024		Y	0.4024	0.4038	0.3944	0.3931
Wj24	X	0.4538	0.4593	0.4538	0.4485						
	Y	0.3931	0.3944	0.3850	0.3838						

Diagram





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7、Typical electrical/optical characteristic curves/光电特性曲线:

Fig.1 正向电流 Vs. 正向电压

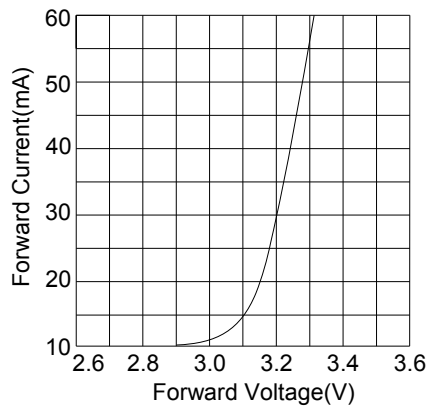


Fig.2 相对亮度 Vs. 正向电流

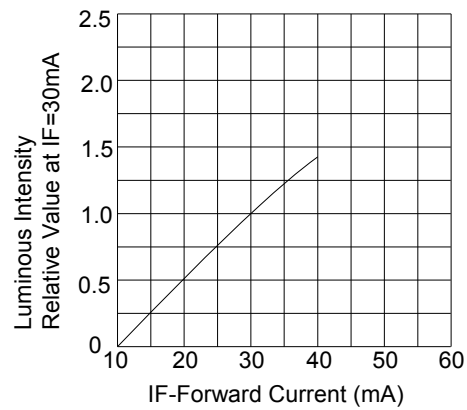


Fig.3 正向电流 Vs. 环境温度

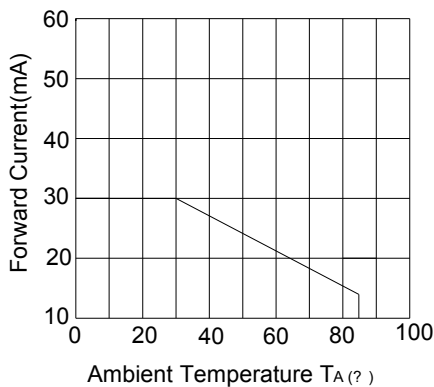
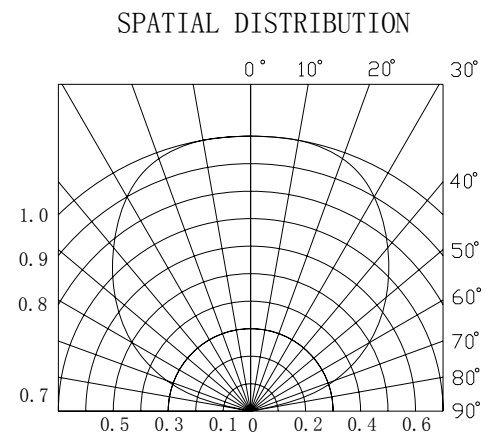
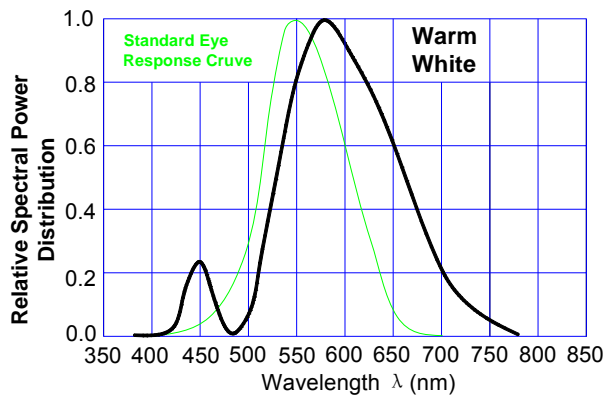
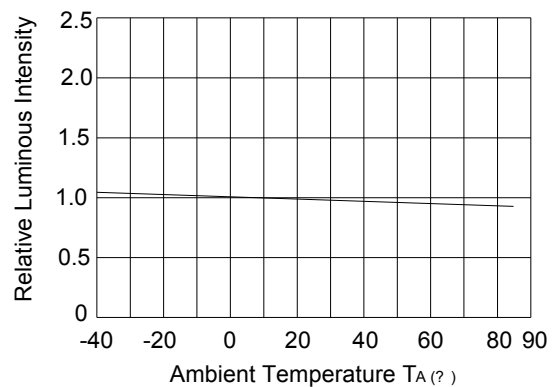


Fig.4 相对亮度 Vs. 环境温度





8、Reliability Analysis/可靠性试验

8.1 Test Items And Results/测试项目和判据

No.	Item/项目	Test Condition/测试条件	Spec. / 引用标准	Q'ty/ 数量	Time/ 时间	Standard/判定
1	IR Reflow (Reflow Soldering) /回流焊接	Tsld=220°C, 10sec	GB/T 4937, II, 2.2	20	2times	ALL PASS
2	Solder ability/可焊性	Tsld=235±5°C, 3sec	GB/T 4937, II, 2.1	20	1times Over 95%	ALL PASS
3	Temperature Cycle/ 高低温循环	-40°C—— 100°C 30min ~ 30min The cut is not more than 1 min	GB/T 4937, III, 1	20	50cycles	ALL PASS
4	Moisture Resistance Cyclic /湿热循环	25°C/12hr~ 55°C/12hr 95%RH	GB/T 4937, III, 4	20	6cycles	ALL PASS
5	High Temperature Storage /高温储存	Ta=100°C	GB/T 4937, III, 2	20	1000hrs	ALL PASS
6	Low Temperature Storage /低温储存	Ta=-40°C	GB/T 4937, III, 2	20	1000hrs	ALL PASS
7	Steady State perating Life /电耐久性	IF=30mA Ta=25°C	GB/T 18904.3 Part A	20	1000hrs	ALL PASS

8.2 Criteria For Judging Damage/判断标准

Item/项目	Symbol/ 符号	Test conditions /测试条件	Criteria for Judgement /判断标准	
			Min./最小值	Max./最大值
Luminous Intensity/亮度	Iv	IF=30mA	L.S.L *0.7	/
Forward Voltage/正向电压	VF	IF=30mA	/	U.S.L*1.1
Reverse current/反向电流	IR	VR=5v	/	U.S.L*2

*U.S.L.: Upper Standard Level / 上限

*L.S.L.: Lower Standard Level / 下限

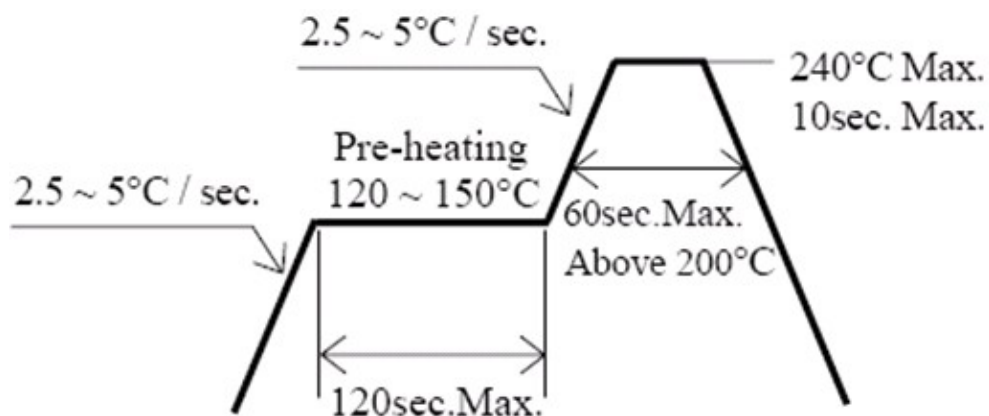


Thermal design of the end applications are of paramount importance. Please consider the heat generation of the LED when making the system design. It is necessary to avoid intense heat generation and operate within the maximum ratings given in this specification.

应用产品的热学设计是至关重要的。在做系统设计时，请考虑LED的散热，避免热量的积累，必须严格的在允许的温度范围内使用。

9.1.Soldering/ 焊接

9.2 Lead Solder/ 回流焊接



9.3 Notes for reflow soldering/回流焊注意事项:

1. Baking process should be performed by using more than 24hours baking at $60 \pm 5^\circ\text{C}$ before using LEDs./ 在使用前LED必须在 $60 \pm 5^\circ\text{C}$ 中烘烤至少24小时。
2. Please choose the right nozzle to avoid the damage to products due to the pressure./ 请选择合适的吸嘴大小和压力，以避免对产品产生不良隐患。
3. No more than twice for reflow soldering./回流焊不可超过两次。

9.4 Hand Soldering (Not Recommended) /手工焊接 (不推荐)

Soldering iron/烙铁焊接: 260 degrees C max/不超过 260°C ; 3 seconds max/不超过3s; once/允许1次.

9.5 Cleaning/ 清洗



It is recommended that isopropyl alcohol be used as a solvent for cleaning the LEDs. It should be confirmed beforehand whether the solvents will dissolve the package the resin or not when using other solvents. Before cleaning, a pre-test should be done to confirm whether any damage to the LEDs will occur. Please do not clean the LEDs by the ultrasonic.

建议使用酒精作为溶剂清洗LED。若要使用其他溶剂，应该预先证实是否能溶化封装料。在清洗作业前，必须预先实验确认对LEDs无任何的伤害。请不要使用超声波清洗LED。

9.6 Static Electricity/ 静电

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 precautions be taken against surge voltage to the equipment that mounts the LEDs.

在接触LED时，建议使用防静电手腕带或防静电手套。所有的器件、设备和机器必须有可靠的接地。对所有LED接触的设备，建议采取预防措施消除冲击电压。

9.7 Others/ 其他

1. The LED light output is strong enough to injure human eyes. Precautions must be taken to prevent looking directly at the LEDs with unaided eyes for more than a few seconds.

LED的光辐射足够强时，会对人眼造成伤害。若眼睛要直接看LED，并且要一定的时间，则必须采取相应防护措施。

2. LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material.

LED工作环境及与LED适配的材料中硫元素及化合物成份不可超过100PPM。

3. Not suitable to operate in acidic environment, PH<7

LED不可用在PH<7的酸性环境。

4. When we need to use external glue for LED application products, please make sure that the external glue matches the LED packaging glue. Additionally, as most of LED packaging glue is silica gel, and it has strong Oxygen permeability as well as strong moisture permeability; in order to prevent external material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM, the single content of Chlorine element is required to be less than 900PPM, the total



SMD SPECIFICATION

Part No./型号 PLCC3014-W3-U

content of Bromine element and Chlorine element in the external glue of the application products is required to be less than 1500PPM.

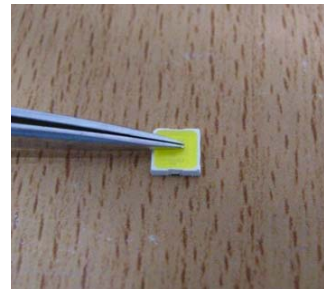
在使用外封胶涂抹LED产品时,应确保外封胶与LED封装胶水相匹配,因为大多数LED的封装胶水为硅胶,它有较强的氧化性和较强的吸湿性,必须防止外封材质进入LED内部以造成LED的损伤,单一的溴元素含量要求小于900PPM,单一氯元素含量要求小于900PPM,在涂抹LED产品时要求外封胶溴元素与氯元素总含量必须小于1500PPM。

5. To ensure the quality of our LEDs, So please do not put pressure on the LEDs.

为确保LED的可靠性,在操作过程中不可施加压力在LED器件胶体表面。



✓ 正确



✗ 错误