PRODUCT SPECIFICATION

Series Number

PLBT3014

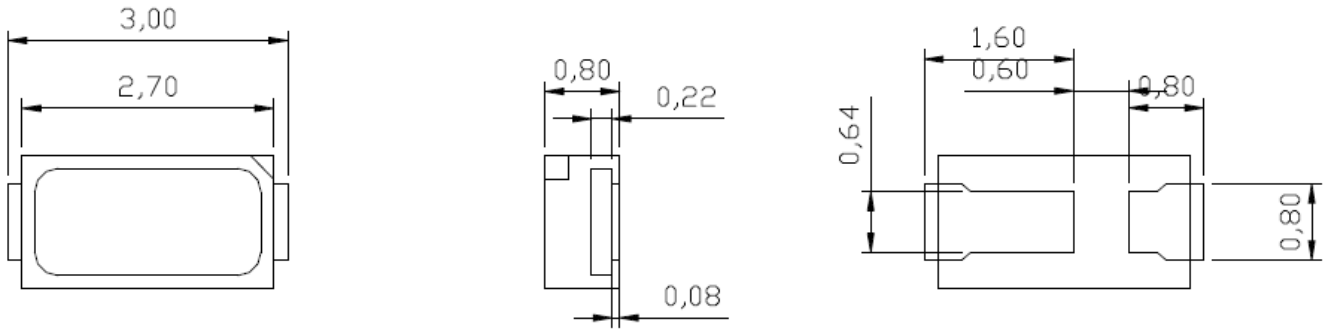
Details

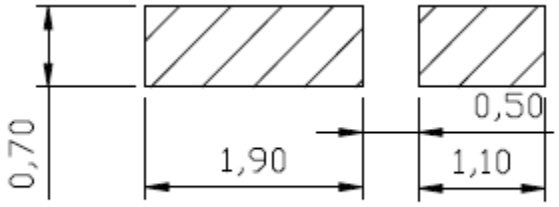
- Thin 0.80mm SMD
- 120° viewing angle.
- Emitting color: Cool White, Natural White, Warm White
- InGaN dice used

Features

- Low thermal resistance, Even heat dissipation
- RoHS Compliant
- Aluminum based PCB

Mechanical Dimensions





Recommended Solder Pad

Notes:
1. Dimension in millimeter [inch], and tolerance is ±0.1mm unless otherwise noted.

Device Selection Guide

Model Number	Chip	
	Material	Emitting Color
PLBT3014-YDCW	InGaN	Cool White
PLBT3014-YDNW		Natural White
PLBT3014-YDWW		Warm White

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Power Dissipation	P_D	108	mW
Continuous Forward Current	I_F	35	mA
Pulse Forward Current	I_{FP}	150	mA
Reverse Voltage	Vr	5	V
Operating Temperature	Topr	-30~+85	°C
Storage Temperature	Tstg	-40~+100	°C
Junction Temperature	Tj	110	°C
Solder Temperature	Ts	260 for 10sec	°C

Electrical and Optical Characteristics at Ta=25°C

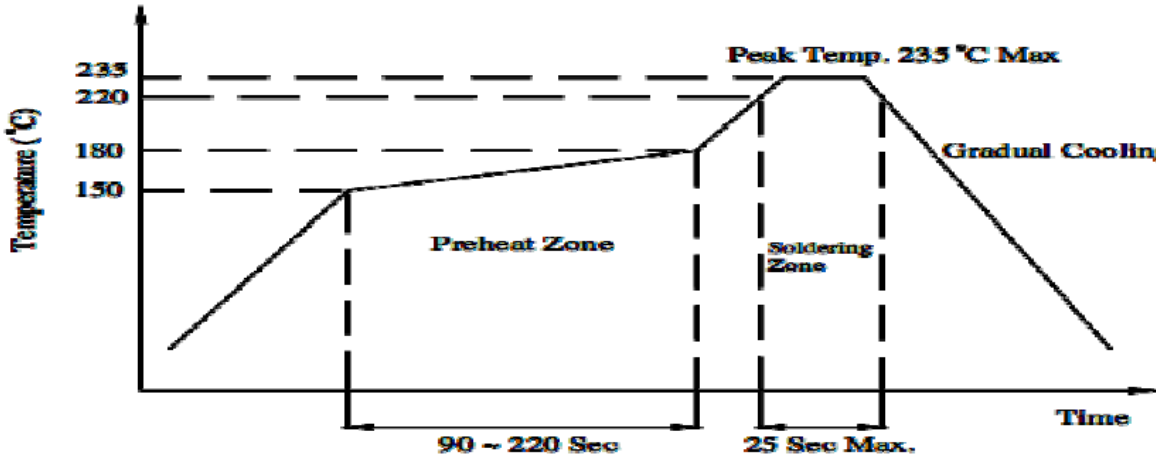
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	VF	2.8	3.2	3.4	V	IF=60mA
Luminous Flux	Φv	10	11.5	14	Lm	IF=60mA
Color Rendering Index	CRI	70	--	90	nm	IF=60mA
Reverse Current	IR	--	--	10	μA	VR=5V
Color Temperature	CCT	2870	4000	6230	°K	IF=60mA
Viewing Angle	2θ1/2	--	120°	--	Deg	IF=60mA
Thermal Resistance	Rθjs		45		°C/W	IF=60mA
Antistatic ability	ESD	HBM		-4000V		
		MM		-3000V		

Notes:

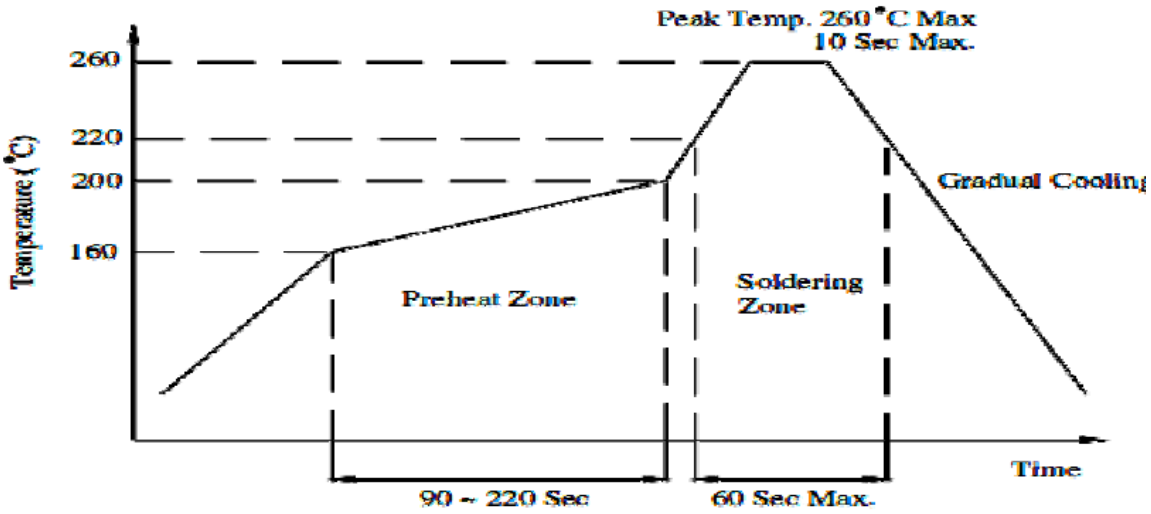
1.(LM) ±10%Luminous Flux (LM)10%
2.VF ±0.1 Forward Voltage (VF)±0.1V
3.(X,Y)±0.01 Wavelength (X,Y)±0.01 (CCT±5%)
4.(CRI)±0.2 Color Rendering Index (CRI)±2
5.(2θ1/2)±5 Viewing angle (2θ1/2)±5

IR reflow soldering profile

有铅焊接 Lead solder



无铅焊接 Lead Free solder

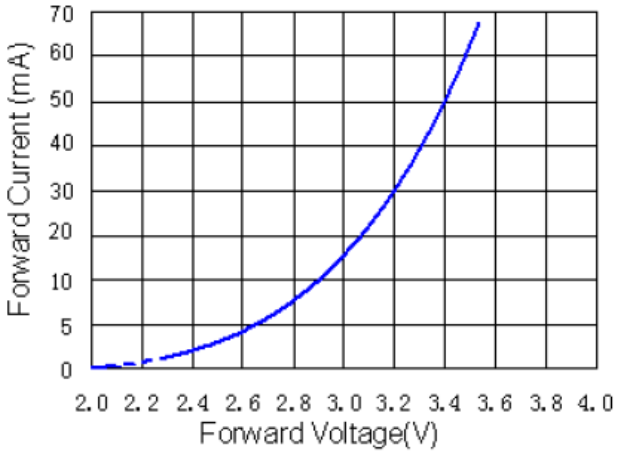


注意：
1. 我们建议的回流焊温度为 240℃±5℃，最高的焊接温度要控制在 260℃以内。
2. 当产品在处在高温状态中时不要对其硅胶施加压力。
3. 回流焊的次数应小于两次。

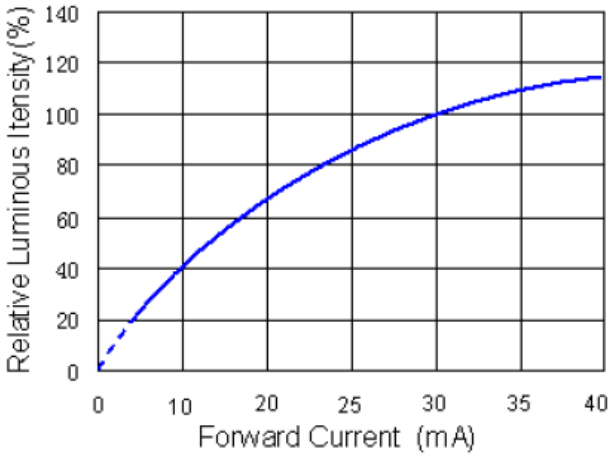
NOTES:
1. We recommend the reflow temperature 240℃±5℃.the maximum soldering temperature should be limited to 260°
2. Don't cause stress to the silicone resin while it is exposed to high temperature.
3. Number of reflow process shall be 1 time.

Typical Electrical / Optical Characteristic Curves

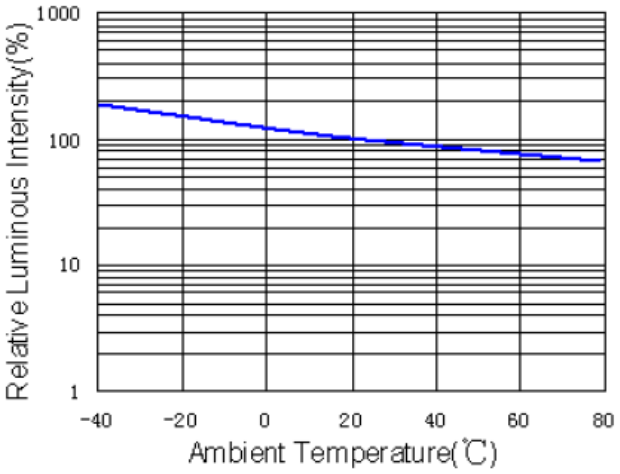
电压与电流关系曲线图
Forward Current VS Forward Volatage



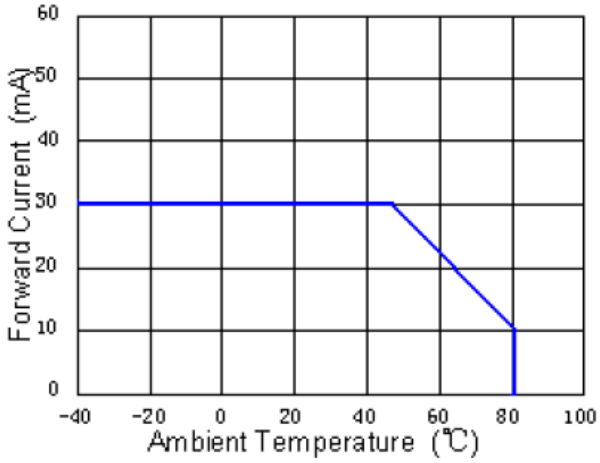
亮度与电流关系曲线图
Relative Flux VS Forward Current



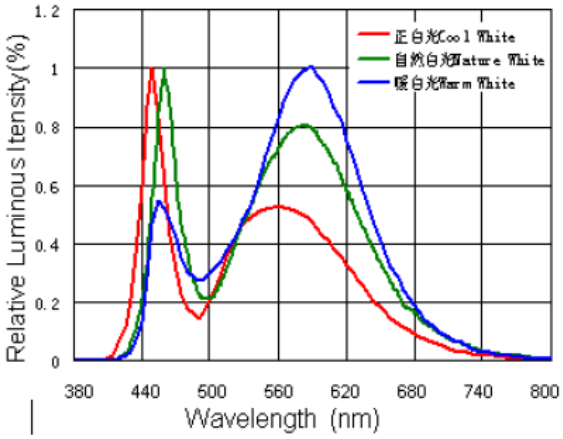
亮度与温度关系曲线图
Relative Flux VS Ambient Temperature



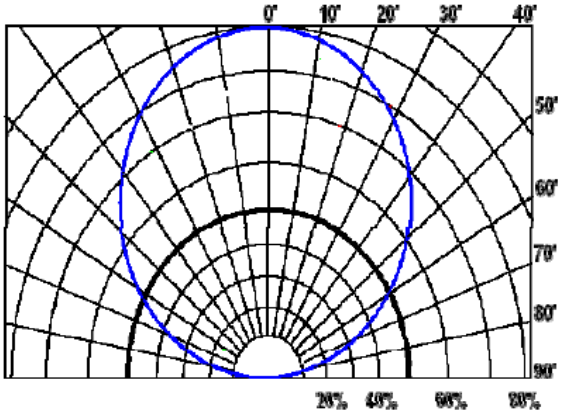
电流与温度关系曲线图
Forward Curent VS Ambient Temperature

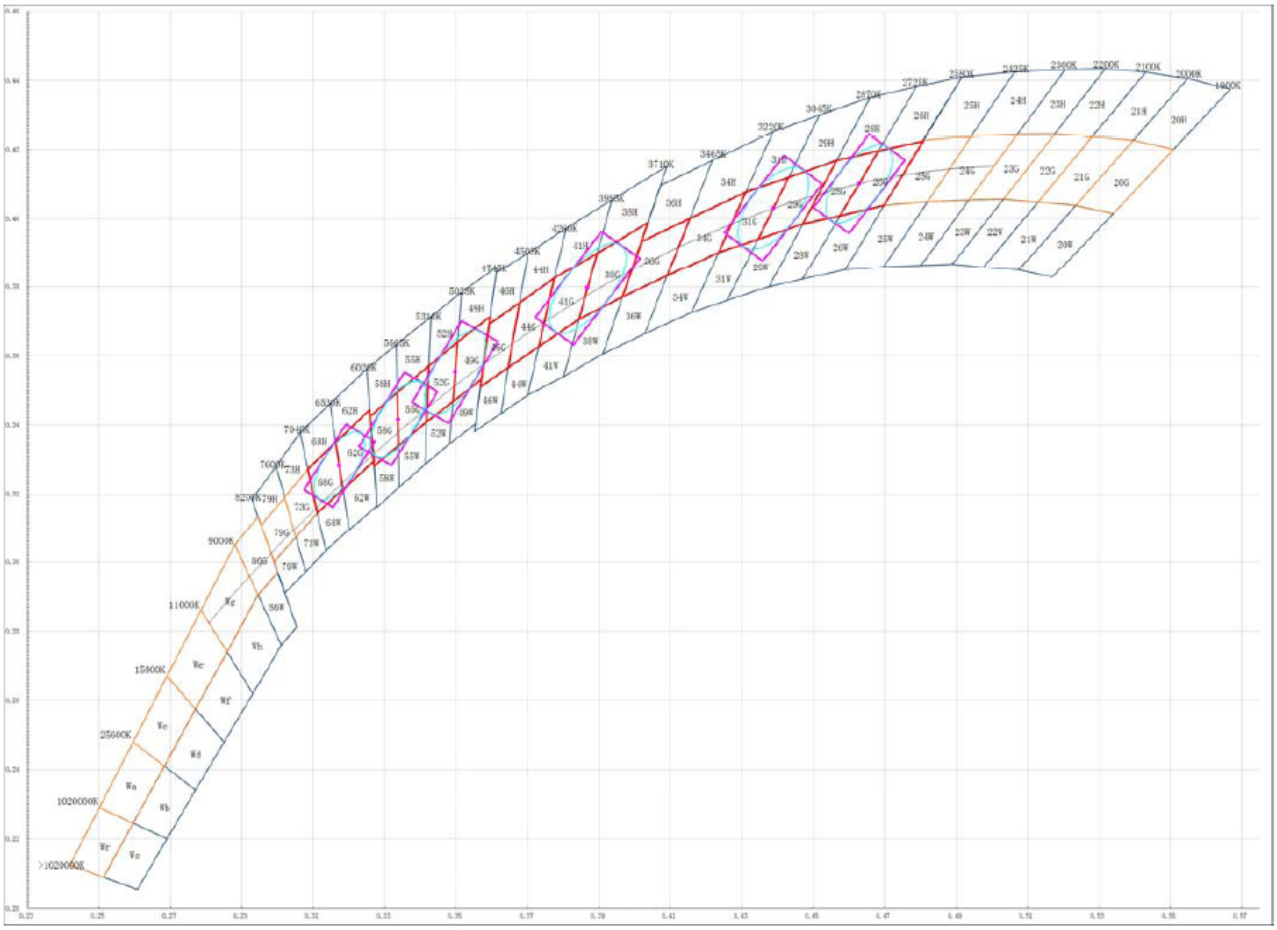


Relative Spectral Distribution



Typical Spectral Distribution





Chromaticity range & Color lineup

Bin Ranges

电压分级 Range of Voltage
VF（V）
2.8~2.9
2.9~3.0
3.0~3.1
3.1~3.2
3.2~3.3
3.3~3.4

白光 COOL White		自然白 Neutral White		暖白 Warm White	
CCT（K）	BIN	CCT（K）	BIN	CCT（K）	BIN
4745~5028	49H	3710~3985	38H	1900~2000	20H
	49G		38G		20G
	49W		38W		20W
5028~5310	52H	3985~4260	41H	2000~2100	21H
	52G		41G		21G
	52W		41W		21W
5310~5665	55H	4260~4503	44H	2100~2200	22H
	55G		44G		22G
	55W		44W		22W
5665~6020	58H	4503~4745	46H	2200~2300	23H
	58G		46G		23G
	58W		46W		23W
6020~6530	62H			2300~2425	24H
	62G				24G
	62W				24W
6530~7040	68H			2425~2580	25H
	68G				25G
	68W				25W
7040~7600	73H			2580~2725	26H
	73G				26G
	73W				26W
7600~8200	79H			2725~2870	28H
	79G				28G
	79W				28W
8200~9000	86G			2870~3045	29H
	86W				29G
9000~10800	WG				29W
	WH			3045~3220	31H
10800~14000	WE				31G
	WF				31W
14000~20500	WC			3220~3465	34H
	WD				34G
20500~37000	WA				34W
	WB			3465~3710	36H
37000~100000	WR				36G
	WS				36W

Testing and reliability results

测试项目 Test Item	测试条件 Test Conditions	持续周期 Duration/Cycle	破坏数量 Number of damage	参考 Reference
温度循环 Temperature	-40℃ 30min ↑↓25℃(2min) 100℃ 30min	循环 100 次 100 times	0/100	JEITA ED-4701300 303
冷热冲击 Thermal Shock	-40℃ 30min ↑↓ 5sec 100℃ 30min	循环 100 次 100 times	0/100	JEITA ED-4701200 303
高温储存 High Temperature Storage	Ta=100℃	1000 小时 1000 hours	0/100	EIAJED-4701200 201
高温高湿 Humidity Heat Storage	Ta=85℃ RH=85%	1000 小时 1000 hours	0/100	EIAJED-4701100 103
低温储存 Low Temperature Storage	Ta=-40℃	1000 小时 1000 hours	0/100	EIAJED-4701200 202
常温老化 Room Temperature Test	Ta=25℃ IF=40mA	1000 小时 1000 hours	0/100	Tested with standard
高温高湿老化 High Humidity Heat Test	60℃ RH=90% IF=40mA	1000 小时 1000 hours	0/100	Tested with standard
低温老化 Low Temperature Test	Ta=-40℃ IF=40mA	1000 小时 1000 hours	0/100	Tested with standard
静电放电人体模式 ESD(HBM)	-4KV at 1.5KΩ; 100pF	3 次 3 times	0/100	MIL-STD-883D

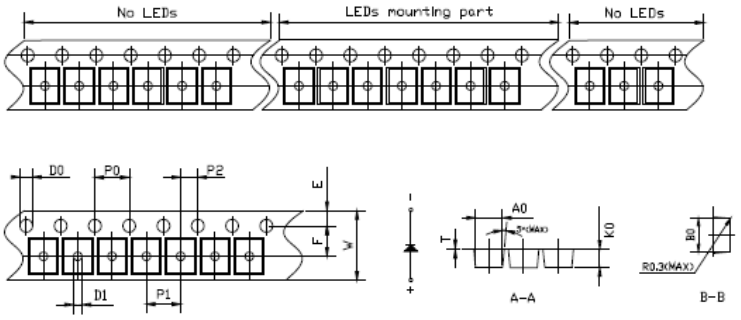
Criteria for judging damage

项目 Item	符号 Symbol	条件 Condition	失效判断标准 Criteria for Judgment	
			下限 MIN	上限 MAX
顺向电压 Forward Voltage	VF	IF=40mA		USL×1.1
反向电流 Reverse Current	IR	VR=5V		10uA
光通量 Luminous Intensity	Φ	IF=40mA	LSL×0.7	

*1 **USL**:标准上限值 Upper Specification Level
*2 **LSL**:标准下限值 Lower Specification Level

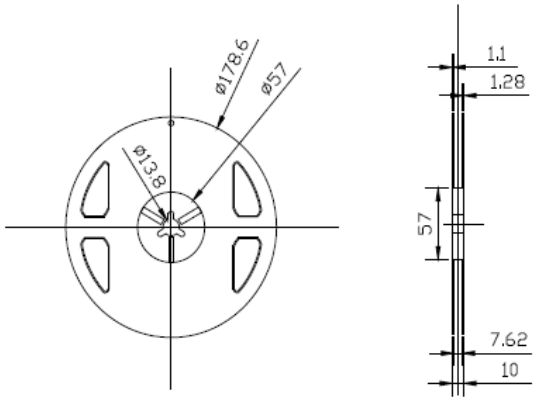
Packing

1.料带尺寸 （单位:mm）
Dimensions of Tape（Unit:mm）

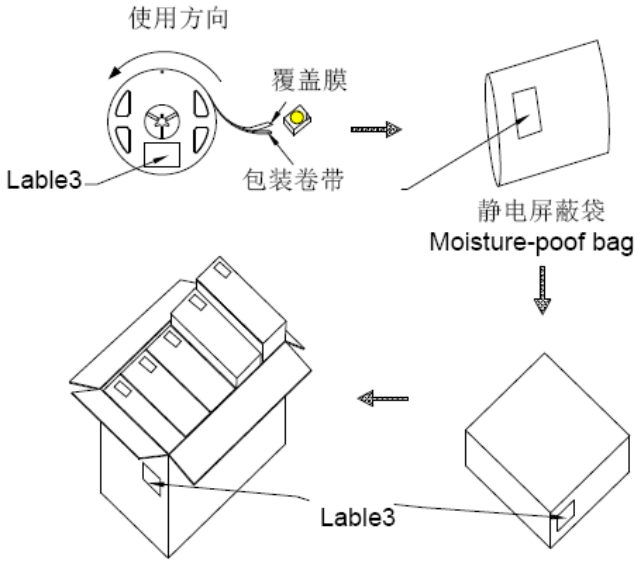


symbol	A0	B0	K0	P0	P1	P2	model	unit
spec	3.15±0.10	3.80±0.10	2.10±0.10	4.00±0.10	4.00±0.10	2.00±0.10		
symbol	W	T	E	F	D0	D1		
spec	8.00±0.10	0.235±0.05	1.75±0.10	3.50±0.10	1.50+0.10 −0.00	1.00+0.10 −0.00	3014	mm

2.卷盘尺寸（单位：mm）
Dimensions of Reel(Unit:mm)



3.装箱尺寸图（单位：mm）
Package Dimension（Unit:mm）



每个外箱装5个内箱
外箱尺寸=425*245*273mm
Outside box
Maximums for inside
boses

每盒5袋
内箱尺寸：247*230*75
Inside box Maximums seven

Note: Specifications subject to change without notice