



# ORIENT

## DATASHEET

### OR-PL020W

## SMD 产品规格书

### SURFACE MOUNT LED SPECIFICATION

产品描述 Product Description	WHITE SIDE LED
型号 Model	OR-PL020W
日期 Date	2013. 05



静电敏感元件

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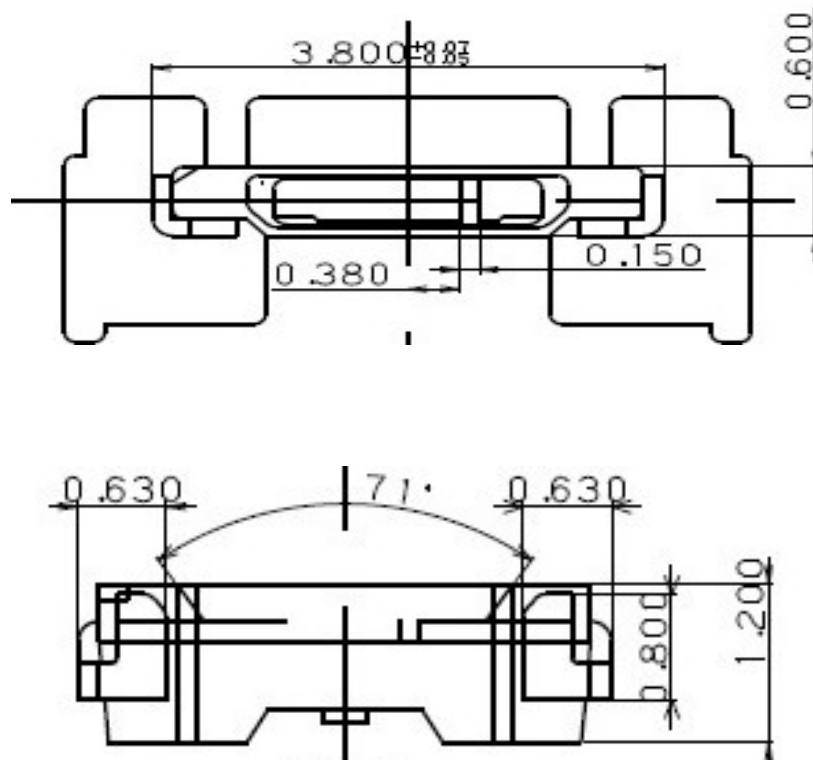
## Features 特性

- Package: 3.8\*1.2\*0.6
- Emitted colour: White
- Soldering methods: SMT assembly available
- Comply ROHS standard
- High intensity
- Extremely wide view angle
- Anti-electrostatic tape package
- Reliable and stable
- RoHS compliant & Pb free. 无铅，符合RoHS标准

## Applications 应用

- LCD backlight
- Mobile phones LCD backlight, Keyboard and symbol
- Mp3/Mp4 backlight

## 尺寸图 [Package Outline Dimensions]



### NOTES:

1. 单位: 毫米 (英寸)

All dimensions are in millimeters (inches);

2. 未标公差处公差为 0.2mm (0.008 寸)

Tolerances are  $\pm 0.2\text{mm}$  (0.008inch) unless otherwise noted.



## 最大绝对额定值 [Absolute maximum ratings at Ta=25℃]

参数 Parameter	符号 Symbol	典型值 Typical	单位 Unit
功率耗损 Power dissipation	Pd	100	mW
正向电流 Forward current	IF	15/20	mA
反向电压 Reverse voltage	Vr	5	V
工作温度范围 Operating temperature range	Top	-40 ~ +85	℃
贮存温度范围 Storage temperature range	Tstg	-40 ~ +100	℃
最大脉冲电流 Peak pulsing current	Ifp	100	mA
抗静电能力 Electrostatic Discharge	ESD	2000 (HBM)	V
备注：脉冲持续时间 ≤ 10msec，占空比 ≤ 1/10 IFP Conditions: Pulse Width ≤ 10msec. and Duty cycle ≤ 1/10.			

## 电性光电特性 [Electrical-optical characteristics at Ta=25℃]

参数 Parameter	测试条件 Test Condition	符号 Symbol	典型值 Typical			单位 Unit
			最小值 Min.	典型值 Typ.	最大值 Max.	
正向电压 Forward voltage	IF=15/20mA	VF		2.8	3.4	V
发光强度 Luminous intensity	IF=15mA	Iv	1300	—	1700	mcd
发光强度 Luminous intensity	IF=20mA	Iv	2100	—	2740	mcd
半功率角 Viewing angle at 50% Iv	IF=15/20mA	2 θ 1/2	—	120	—	Deg
反向电流 Reverse current	Vr=5V	Ir	—	—	10	μA

### NOTES:

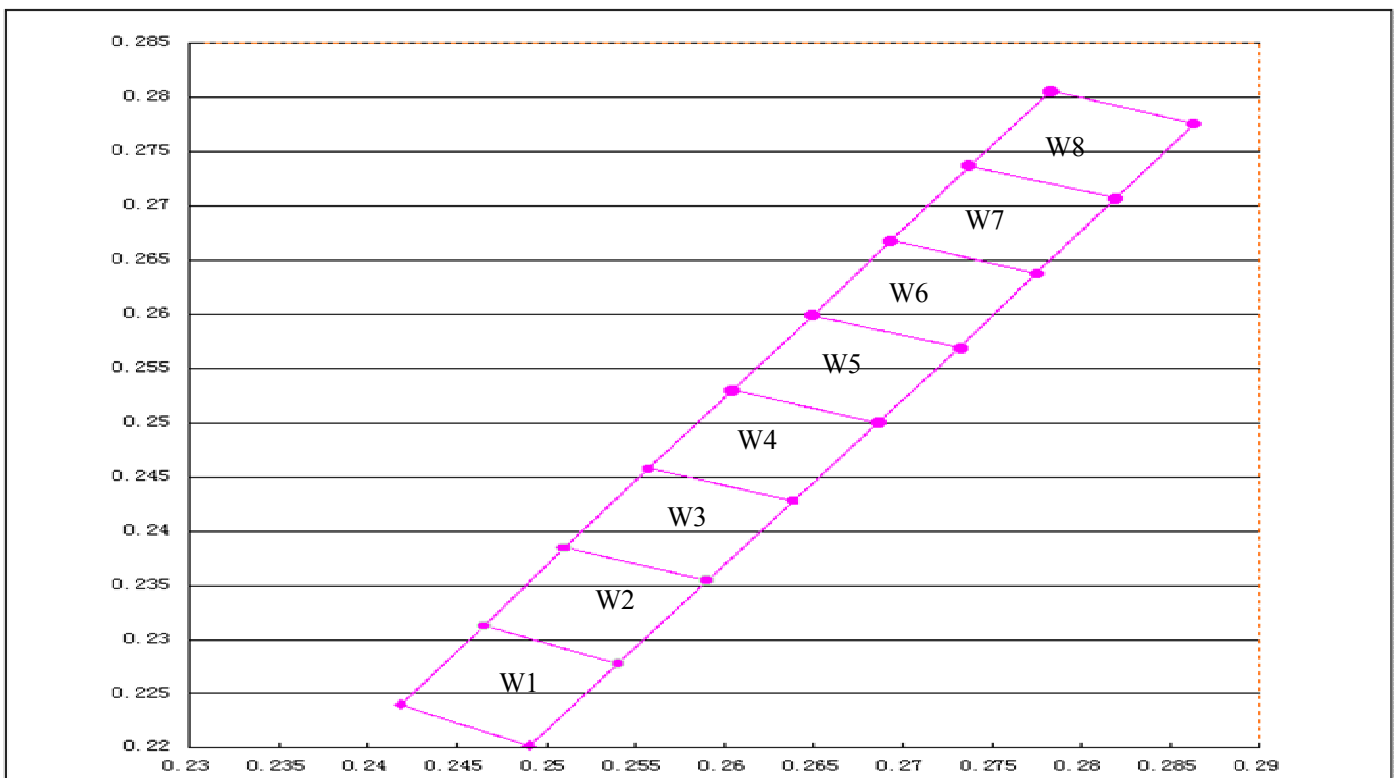
1. Tolerance of luminous intensity is 10%
2. Tolerance of forward voltage is 0.05V



# White Bin Structure 白光Bin结构

BIN CODE	X	Y	BIN CODE	X	Y	BIN CODE	X	Y
<b>W1</b>	0.249	0.2202	<b>W2</b>	0.254	0.2278	<b>W3</b>	0.259	0.2355
	0.2418	0.224		0.2465	0.2313		0.251	0.2385
	0.2465	0.2313		0.251	0.2385		0.2557	0.2458
	0.254	0.2278		0.259	0.2355		0.2638	0.2428
BIN CODE	X	Y	BIN CODE	X	Y	BIN CODE	X	Y
<b>W4</b>	0.2638	0.2428	<b>W5</b>	0.2686	0.25	<b>W6</b>	0.2732	0.2569
	0.2557	0.2458		0.2604	0.253		0.2649	0.2599
	0.2604	0.253		0.2649	0.2599		0.2693	0.2668
	0.2686	0.25		0.2732	0.2569		0.2775	0.2638
BIN CODE	X	Y	BIN CODE	X	Y	BIN CODE	X	Y
<b>W7</b>	0.2775	0.2638	<b>W8</b>	0.2819	0.2707		0	0
	0.2693	0.2668		0.2737	0.2737		0	0
	0.2737	0.2737		0.2783	0.2806		0	0
	0.2819	0.2707		0.2863	0.2776		0	0

CIE Chromaticity Diagrams(IF=15mA,Ta=25 °C)





Light Intensity rank and bin code( $I_F=15\text{mA}$ ,  $T_a=25^\circ\text{C}$  )

BIN CODE	IV Range (mcd)	BIN CODE	IV Range (mcd)
13A	1300–1350	15A	1500–1550
13B	1350–1400	15B	1550–1600
14A	1400–1450	16A	1600–1650
14B	1450–1500	16B	1650–1700

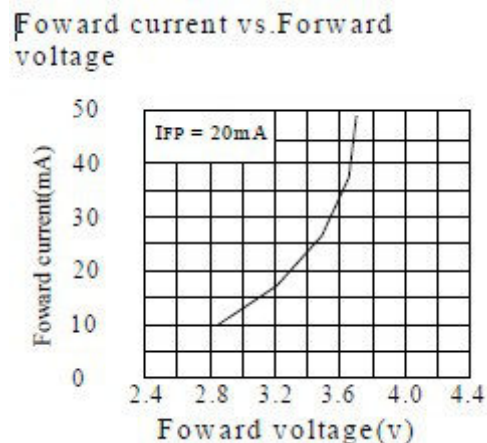
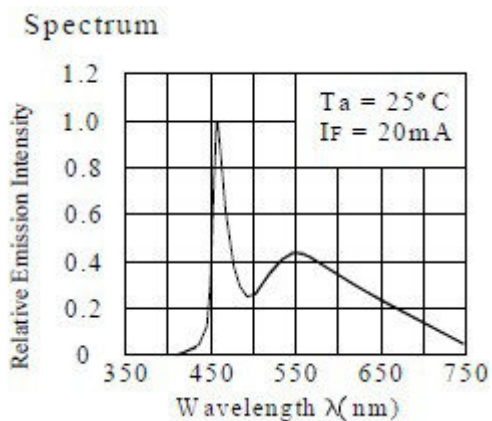
Light Intensity rank and bin code( $I_F=20\text{mA}$ ,  $T_a=25^\circ\text{C}$  )

BIN CODE	IV Range (mcd)	BIN CODE	IV Range (mcd)
21A	2100–2180	24A	2420–2500
21B	2180–2260	25A	2500–2580
22B	2260–2340	25B	2580–2660
23A	2340–2420	26B	2660–2740

Forward voltage rank and bin code( $I_F=15\text{mA}$ ,  $T_a=25^\circ\text{C}$  )

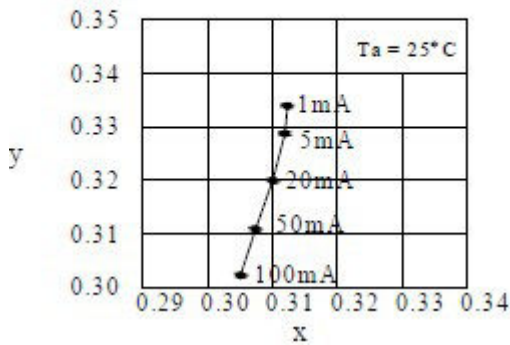
BIN CODE	VF (V)	BIN CODE	VF (V)
V1	2.8–2.9	V4	3.1–3.2
V2	2.9–3.0	V5	3.2–3.3
V3	3.0–3.1	V6	3.3–3.4

Typical optical characteristics curves

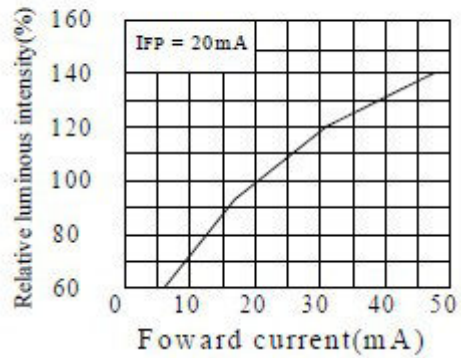




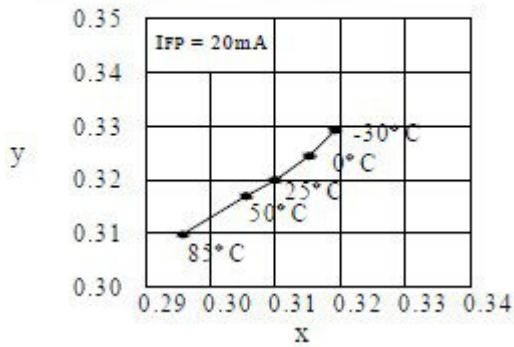
Forward Current vs. Chromaticity Coordinate ( $\lambda D$ )



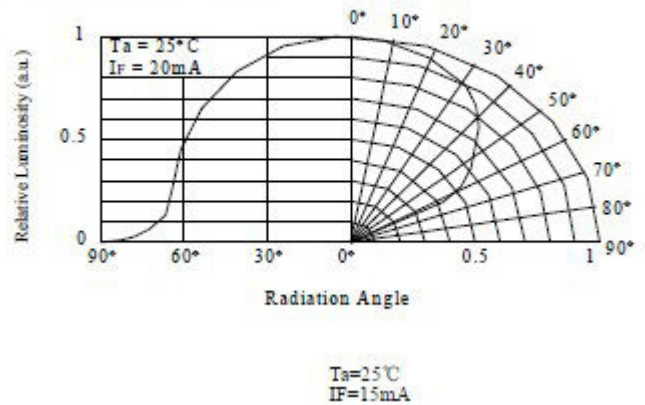
Forward current vs. Relative luminous intensity



Ambient Temperature vs. Chromaticity Coordinate ( $\lambda D$ )

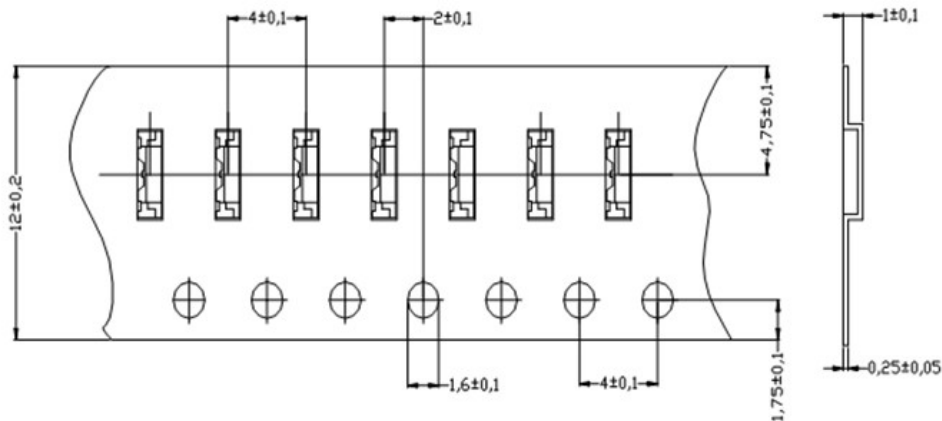


Directivity (Angle : 120°)



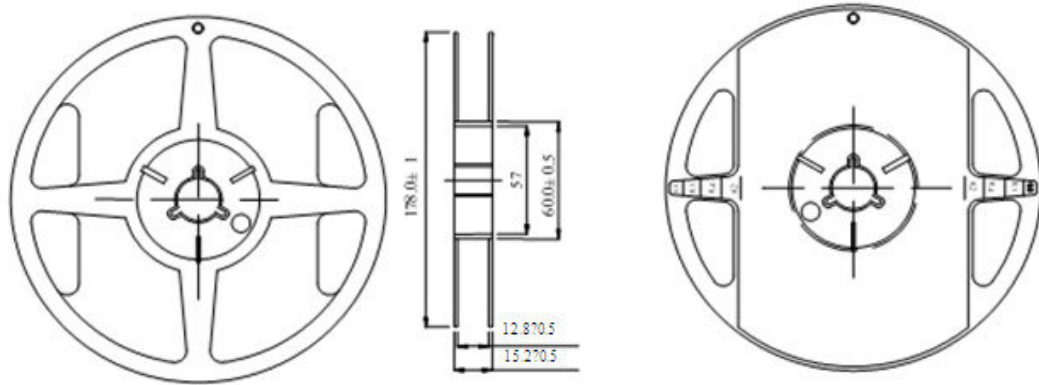
### Pacaging Specification

卷带尺寸 Dimensions of Tape (Unit: mm)





## 卷盘尺寸 Dimensions of Reel (Unit: mm)



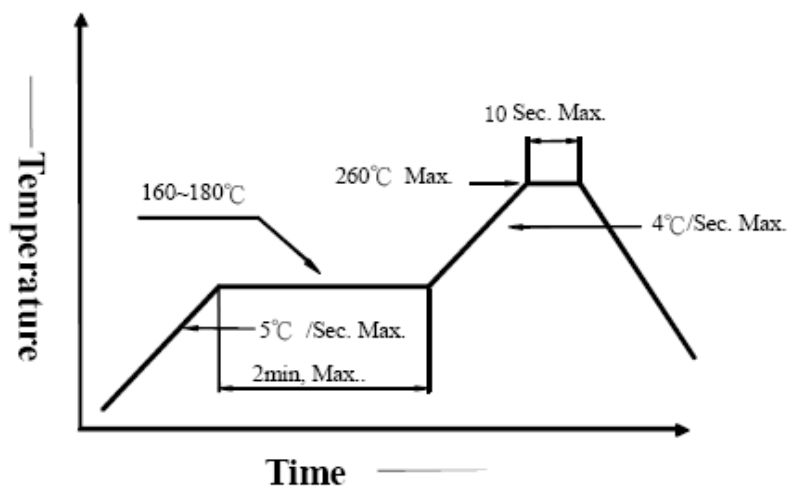
### NOTES:

1. Specifications are subject to change without notice.
2. All dimensions are in mm, tolerance is  $\pm 2.0$ mm unless otherwise noted.
3. Empty component pockets are sealed with top cover tape, 4,000 pcs/ Reel.

使用重要事项 [Importation for user]

回流焊规范 [Reflow Profile]

无铅产品回流焊温度条件曲线规范 Pb-free Solder temperature Profile





1. 焊接时请不要重压 LED 灯。  
Do not put stress on the LEDs when soldering.
2. 焊接后温度未回降到常温时请勿扭曲线路板。  
Do not warp the circuit board before it have been returned to normal ambient conditions after soldering.
3. 手工焊接规范 [Hand Soldering Profile]  
手工焊接时，烙铁温度不高于 300℃，每个焊脚焊接时间不超过 3 秒  
The temperature of the iron should be lower than 300℃ and soldering within 3sec per solder-pad is to be observed.
4. 必须注意的是把这些灯放到装置中使用时，不可接触 LED 灯的胶体表面，以避免其受到破坏导致死灯或减少光效率。  
Caution must be used in handing this device to avoid damage to the lens surfaces that will reduce optical efficiency.

## 贮存规范 [Storage Profile]

1. 请在未准备使用 LED 之前不要打开防静电袋子。  
Do not open the moisture proof bag before ready to use the LEDs.
2. LED 在未开封之前应保存在 30℃ 以下，湿度在 60% 以下的环境中，最长保存期为 1 年。  
The LEDs should be kept at 30℃ or less and 60%RH or less before opening the package. The max. storage period before opening the package is 1 year.
3. 打开包装待后，LED 需保存在 30℃/40% 湿度以下的条件，且必须在 7 天内使用完。  
After opening the package, the LEDs should be kept at 30℃/40%RH or less, and it should be used within 7 days.
4. 如果 LED 超出了第 3 点要求，则 LED 必须经过烘烤才能使用，烘烤条件为：60±5℃/12H。  
If the LEDs be kept over the condition of 3, baking is required before mounting. Baking condition as below: 60±5℃ for 12 hours.
5. 以上所有条件与标准均以奥伦德公司企业测试标准为准，最终解释权归深圳市奥伦德科技有限公司所有。  
All conditions and standards are in the testing standards of ORIENT. Shenzhen Orient Technology Co., Ltd. keeps final interpretation.



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