



# 深圳市中顺半导体照明有限公司

— Shenzhen Zhongshun Semiconductor Lighting Co., Ltd. —

## Specification 规格书

Customer Name: \_\_\_\_\_

客户名称

Customer P/N: \_\_\_\_\_

客户品号

Factory Model: P-V3535RN\*\*P3 \_\_\_\_\_

公司型号

Sending Date: \_\_\_\_\_

呈送日期

R&D 研发规格书     Sample 样品规格书     Product 产品规格书

Customer Approval  
客户审核

ZS Approval  
中顺审核

Approval 核准	Audit 确认	Confirmation 制作	Approval 核准	Audit 确认	Confirmation 制作
			黄山虎	邓文峰	吴顺
<input type="checkbox"/> Qualified 授受			<input type="checkbox"/> Disqualified 不接受		
			Date: _____ 日期: 2022.03.01		



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LM-80

EN 62471



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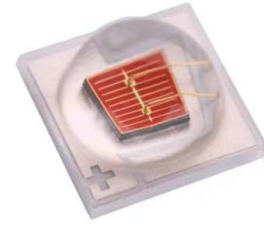


### Version History 修订履历

Date 日期	Revised content 修订内容	Version 版本	Revised by 修订人
2022.03.01	新增	A0	吴顺

### Features (特征)

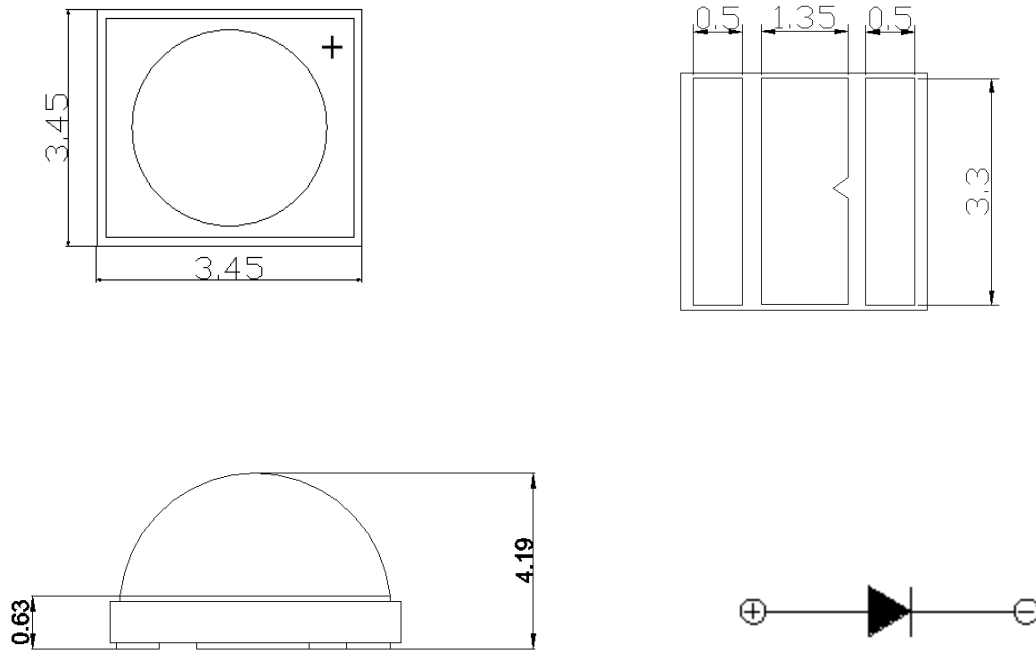
1. Maximum drive current: 1000mA (最大驱动电流: 1000mA)
2. Wide viewing angle (大角度发光)
3. RoHS compliant (符合 RoHS 标准)
4. Low thermal resistance (低热阻)
5. Package: 1000pcs/reel (包装每卷 1000PCS)



### Application (应用)

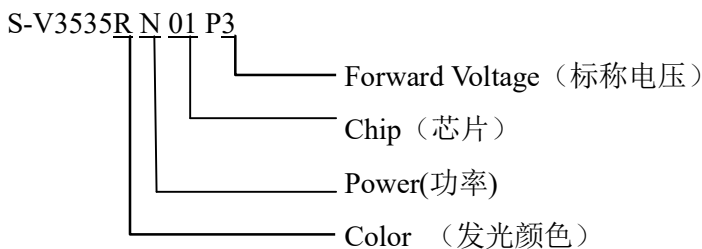
1. Plant lighting (植物照明)

### Package Dimension (封装尺寸)



### Notes (备注):

1. All dimensions are in millimeters (所有标注尺寸单位为毫米)
2. Tolerances are  $\pm 0.15\text{mm}$  unless otherwise noted (除特别标注外, 允许公差为  $\pm 0.15\text{mm}$ )

**Product Number Explanation (产品编码说明)****Table of Specifications (规格表)**

NO.	P/N	Model	Color	Rendering Wavelength	Min. Luminous Flux
1		P-V3535RN01P3	Red	660	25
2		P-V3535RN02P3	Red	660	30

**Absolute maximum ratings @  $T_a=25^{\circ}\text{C}$  (绝对最大额定值)**

Item (项目)	Symbol (符号)	Absolute Maximum Rating (数值)	Unit (单位)
Forward Current (正向电流)	$I_F$	350	mA
Pulse Forward Current (脉冲正向电流)	$I_{FP}$	1000	mA
Reverse Voltage (反向电压)	$V_R$	5	V
Power Dissipation (功率消耗)	$P_D$	700	mW
Operating Temperature (工作温度)	$T_{opr}$	-30~+85	$^{\circ}\text{C}$
Storage Temperature (储存温度)	$T_{stg}$	-30~+100	$^{\circ}\text{C}$
Junction Temperature (结温)	$T_J$	120	$^{\circ}\text{C}$
Thermal Resistance (热阻)	$R_{th}$	5	$^{\circ}\text{C}/\text{W}$

**Electrical-Optical characteristics @T<sub>a</sub>=25°C (电性与光学特性)**

Item (项目)	Symbol (符号)	Code (代码)	Test Condition (测试条件)	Min (最小)	Typ (平均)	Max (最大)	Unit (单位)
Forward Voltage (正向电压)	VF	-	IF=350mA	1.9	-	2.4	V
Luminous Flux (亮度)	Φ <sub>e</sub>	-	IF=350mA	25	30	35	lm
Photosynthetic Photon Flux Efficiency (光量子效率)	PPE	/	IF=350mA	-	3.2	4.2	μ mol/J
Wavelength Peak (波峰)	WP	-	IF=350mA	655	-	665	nm
Reverse Current (反向电压)	IR	-	VR=9V	-	-	1	μ A
View Angle (角度)	2θ <sub>1/2</sub>	-	IF=350mA	-	120	-	deg

Notes (备注):

1. Tolerance of Forward voltage (VF) : ± 0.1V  
正向电压允许公差: ±0.1V
2. Tolerance of Optical power (Φ<sub>v</sub>) : ±3%  
光功率允许公差: ±3%
3. Tolerance of Wavelength (WLD) : ±1nm  
波长允许公差: ±1nm

**Luminous Intensity Rank @T<sub>a</sub>=25°C (亮度等级)**

Model	Min.	Max.	Unit	Condition
P-V3535RN01P3	25	30	Lm	I <sub>F</sub> =350mA
P-V3535RN02P3	30	35		

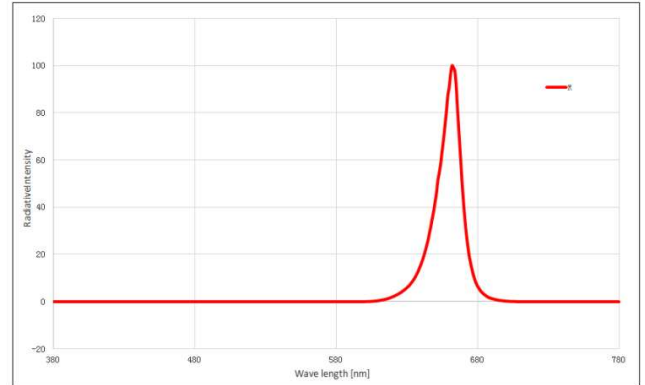
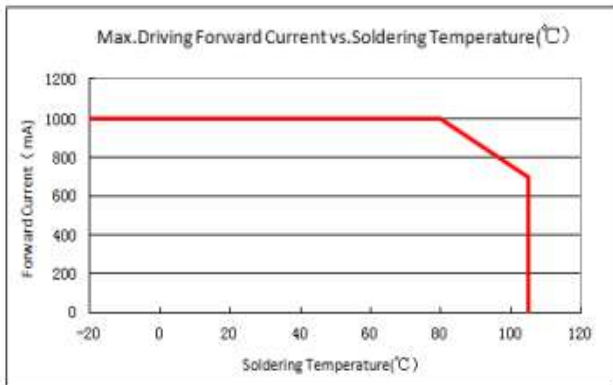
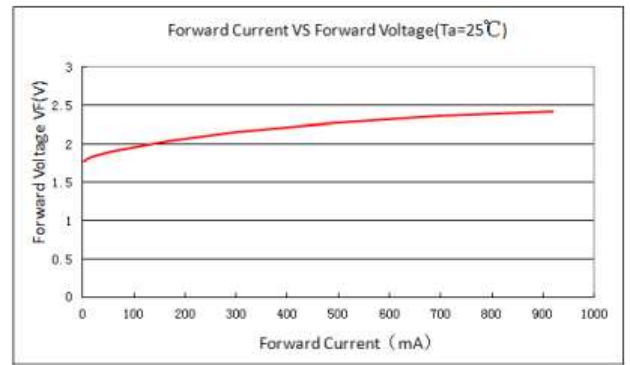
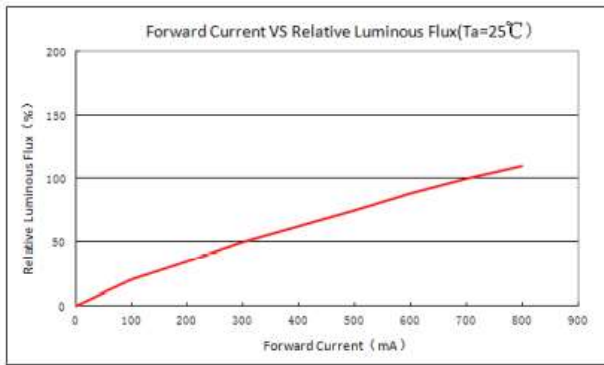
**Forward Voltage Rank @T<sub>a</sub>=25°C (电压等级)**

NO.	Min.	Max.	Unit	Condition
1	1.9	2.0	V	I <sub>F</sub> =350mA
2	2.0	2.1		
3	2.1	2.2		
4	2.2	2.3		
5	2.3	2.4		

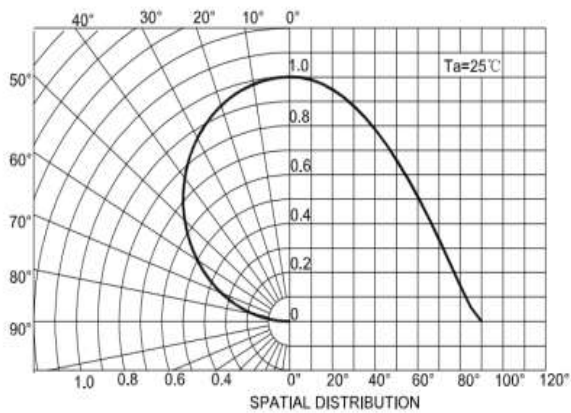
**Wavelength Rank @T<sub>a</sub>=25°C (波长等级)**

NO.	Min.	Max.	Unit	Condition
1	655	660	nm	I <sub>F</sub> =350mA
2	660	665		

## Typical optical characteristics curves @ $T_a=25^\circ\text{C}$ (典型光学特性曲线)



Radiation diagram  
辐射图特性曲线



**Reliability Test Items And Conditions (信赖性测试项目及条件)**

Test Item (项目)	Ref.Standard (参考标准)	Test Conditions (测试条件)	Time (时间)	Quantity (pcs) (数量)
High Temperature Storage (高温储存)	JESD22-A103	Temp:100°C±5°C	1000 hrs	22
Low Temperature Storage (低温储存)	JESD22-A119	Temp:-40°C±5°C	1000 hrs	22
Thermal Shock (冷热冲击)	JESD22-A104	100°C±5°C 30min ↓↑15S -40°C±5°C 30min	200 cycle	22
Reflow (回流焊)	JESD22-B106	Temp:max260°C Time:10sec 8min/cycle	3 cycle	22
Life Test (常温老化)	JESD22-A108	Ta=25°C±5°C IF=350mA	1000 hrs	22
High Temperature Life Test (高温老化)	JESD22-A108	Ta=85°C±5°C IF=350mA	1000 hrs	22
High Temperature High Humidity Life Test (高温高湿老化)	JESD22-A101	85°C±5°C/85%RH I <sub>F</sub> =350mA	1000 hrs	22

**Criteria For Judging Damage (失效判定标准)**

Item (项目)	Symbol (符号)	Test Conditions (测试条件)	Criteria for Judgement (判定标准)	
			Min. (最小)	Max. (最大)
Forward Voltage (正向电压)	VF	IF=350mA	—	(U.S.L*) × 1.1
Light Intensity (光强)	ΦV	IF=350mA	(L.S.L*) × 0.7	—

Note (备注) :

U.S.L.:Upper Standard Level (规格上限)

L.S.L.:Lower Standard Level (规格下限)

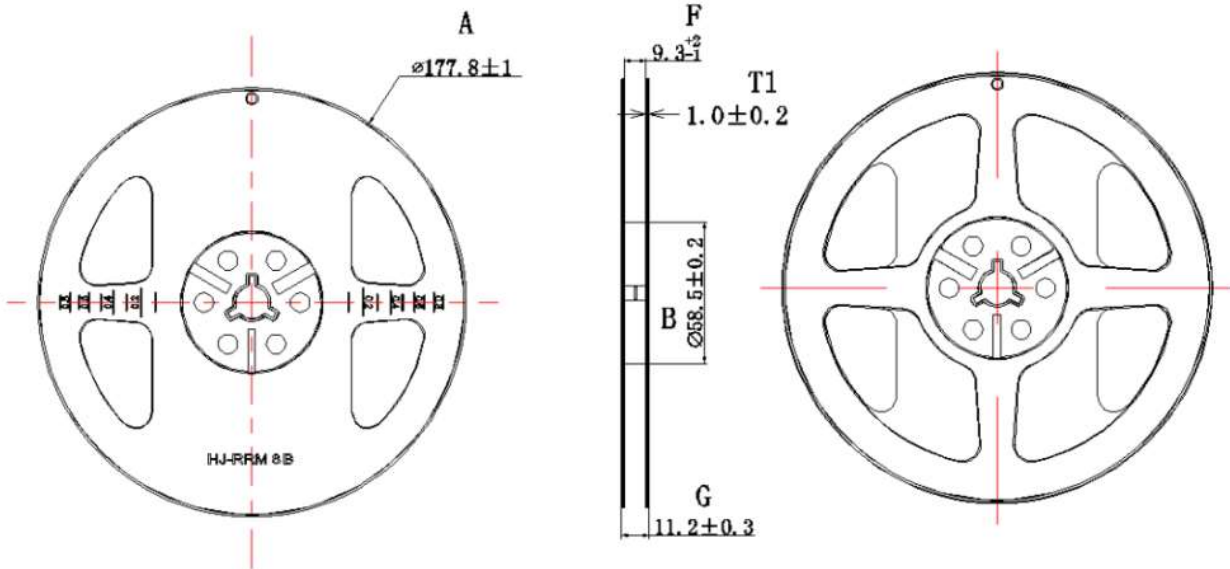


**Label Explanation (标签说明)**

<b>P/N :</b> *****	
<b>Model :</b> *****	
<b>ΦV :</b> ***** mcd	
<b>VF :</b> ***** V	
<b>WD :</b> ***** nm	
<b>QTY:</b> ***K EA	
<b>Date :</b> **/**/** *	
<b>Lot No.:</b> *****	

- P/N:Part number (产品料号)
- Model:Product model (产品型号)
- ΦV:Light Intensity rank (光强)
- VF:Forward Voltage (电压)
- WD:Wavelength (波长)
- QTY:Number of packages (数量)
- Date: Production date (生产日期)
- Lot NO.:Lot number (批号)

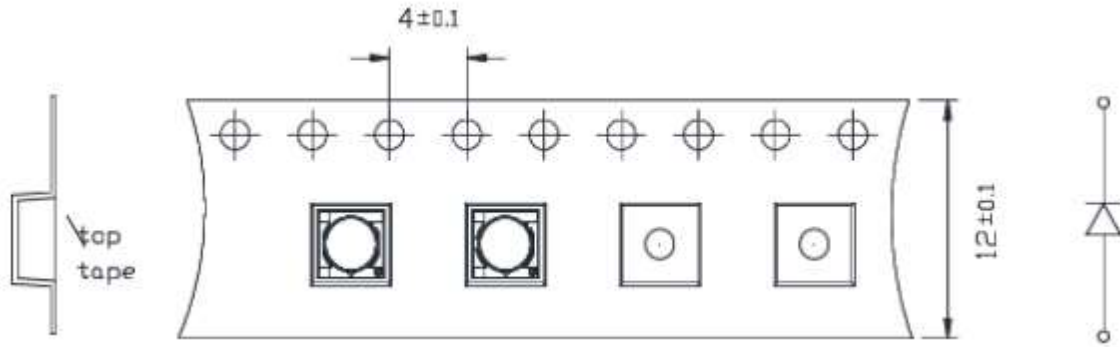
**Reel Dimensions (卷盘尺寸)**



Note (备注) :

1. Tolerance unless mentioned is  $\pm 0.3\text{mm}$ ; unit=mm  
未标注公差为 $\pm 0.3\text{mm}$ , 尺寸单位: mm

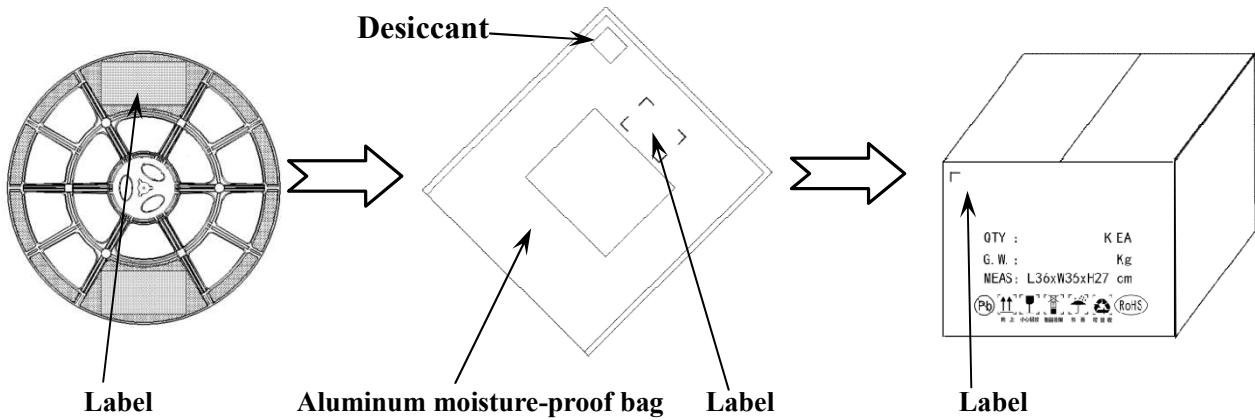
**Carrier Tape Dimensions (载带尺寸)**



**Note (备注) :**

1. Tolerance unless mentioned is  $\pm 0.1$ mm; unit=mm.  
允许公差为  $\pm 0.1$ mm, 单位 mm

**Moisture Resistant Packing Process (防潮包装过程)**



**Note (备注) :**

1. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/ELARS-481 specifications  
负极朝向定位孔, 符合 ANSI/ELARS-481 规格。

### Precautions for use Over-current-proof (通电使用时的注意事项)

Customer must apply resistors for protection otherwise slight voltage shift will cause big current change (burn out will happen).

客户必须使用电阻进行保护，否则轻微的电压变化会引起大电流变化（会发生烧坏）。

### Storage (存储)

1. Do not open moisture proof bag before the products are ready to use.

在使用之前禁止打开防潮包装。

2. Storage conditions prior to uncapping : 5 - 30 °C , maximum relative humidity of 60%.

开封前的贮藏条件：5-30℃，最大相对湿度为 60%。

3. After opening the package, The LEDs should be soldered within 4 hours after opening the package.

打开包装之后,应在 4hrs 内焊接完毕。

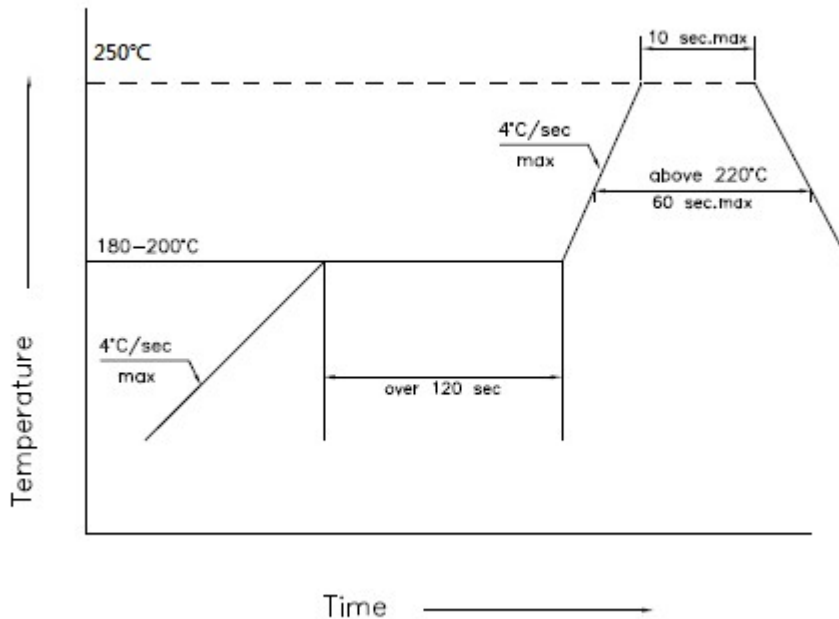
### Soldering Condition (焊接条件)

1. Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

本产品最多只可回流焊两次,且在首次回焊后须冷却至室温之后方可进行第二次回流焊。

2. Recommended soldering conditions:

推荐焊接条件:



3. LED operating environment and sulfur element composition cannot be over 25 PPM 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 25PPM。

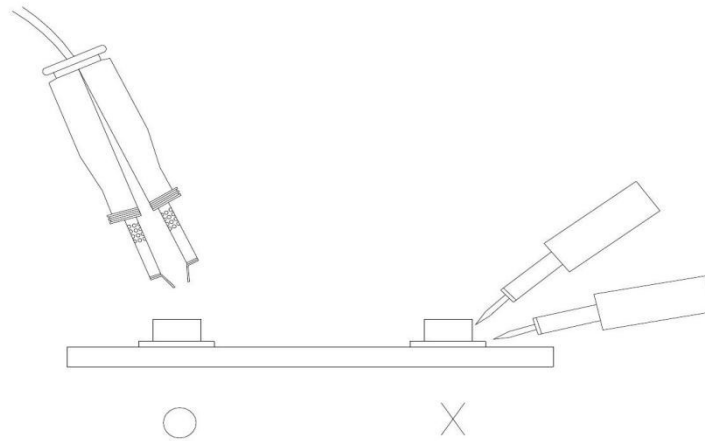
## Soldering Iron (烙铁焊接)

1. When hand soldering, keep the temperature of iron below less 250°C less than 10 seconds.  
当手工焊接时，烙铁的温度必须小于 250°C，时间不可超过 10 秒。
2. The hand solder should be done only one time.  
手工焊接只可焊接一次。

## Repairing (返修)

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

不应在 LED 焊接后进行修复。当修复不可避免时，应使用（如下图）之类的双头烙铁，应事先确认此种修补方法会不会损坏 LED 本身。



## Cautions: (使用注意事项)

1. Please check if there is air leak before opening the package, if so, please return the goods back to take drying process for later using.  
在开包装之前，请先检查包装袋有无漏气，如果有漏气现象，请退回我司重新烘烤除湿包装后再使用
2. Products can be used within 6 months after packaging, after that, they must be:  
抽真空包装材料未超过 6 个月可正常使用，包装袋开启后,产品必须:
  - A.Soldered within 4 hrs;  
A.在 4hrs 内焊接完毕;
  - B.Used in the condition: 30°C within and 60%RH below.  
B.使用条件需：温度:30°C 以内，湿度:60%RH 以下。
3. The vacuum packaging material is not used for more than 6 months after being packaged unless opening the package and take drying our process in 70°C/12H.  
抽真空包装材料超过 6 个月未使用，再使用时需重新拆铝箔袋取出烘烤 70°C/12H 除湿后才可使用。