

# WS2835-3535

## SPECIFICATIONS FOR SURFACE MOUNT LED

### 表面贴装式 LED 规格书

Customer  
 客户名称: \_\_\_\_\_  
 Product Discription   **3528六脚全彩**  
 产品描述: \_\_\_\_\_  
 Model  
 型号   **WS2835-3535**  
 Issue Date  
 发出日期:   **2016.06.06**

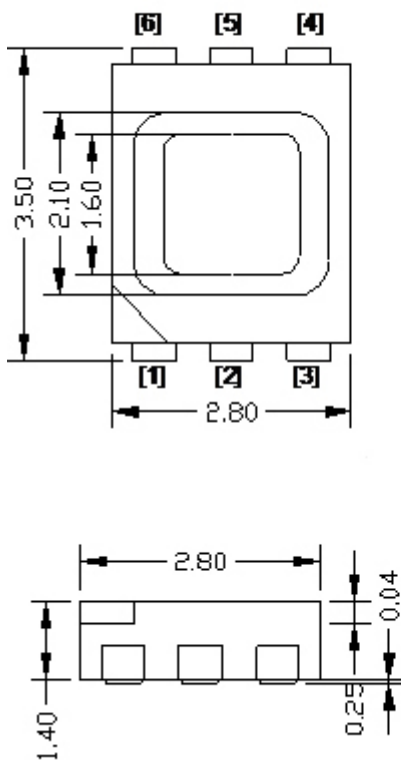
Prepared By 制定	Checked By 审核	Approved By 批准	Marketing Dept. 市场部

APPROVED SIGNATURES 客户确认		
Purchase Dept. 采购部	Quality Dept. 品质部	Engineering Dept. 技术部

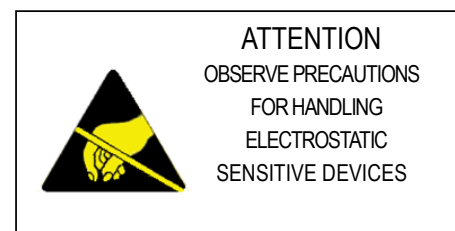
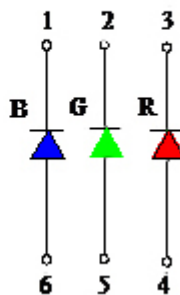
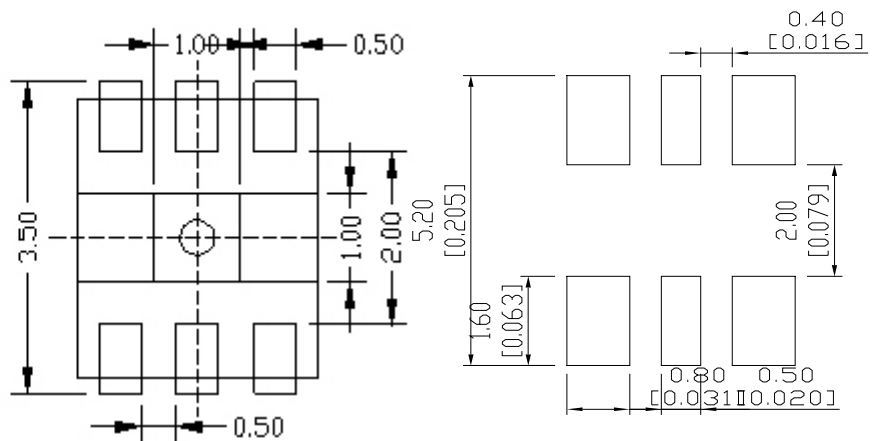
## ※ Feature (产品特征)

- ◆ Viewing angle: 120 deg  
发光角度: 120°C
- ◆ The materials of the LED dice is InGaN  
芯片成分
- ◆ 3.5mm×2.8mm×1.40mm SMT-LED  
外型尺寸
- ◆ Lens Appearance: water clean  
胶体颜色: 水清透明
- ◆ RoHS compliant lead-free soldering compatible  
符合 ROHS (有害物质禁用指令) 要求。

## ※ Package Outline 外型尺寸图



## PAD Lay Out PCB 焊盘设计



## NOTES:

1. All dimensions are in millimeters (inches);  
单位: 毫米 (英寸)
2. Tolerances are  $\pm 0.2\text{mm}$  (0.008inch) unless otherwise noted.  
未标公差处公差为 0.2mm(0.008 寸)

※ Absolute maximum ratings at Ta=25°C 最大绝对额定值

Parameter 参数	Symbol 符号	Value值			Unit 单位
		R	G	B	
Power dissipation 功率耗损	Pd	65	105	105	mW
Forward current 正向电流	If		30		mA
Reverse voltage 反向电压	Vr		5		V
Operating temperature range 工作温度范围	Top		-40~+85		°C
Storage temperature range 贮存温度范围	Tstg		-40~+100		°C
Peak pulsing current 最大脉冲电流	Ifp		100		mA
Electrostatic Discharge 抗静电能力	ESD		2000(HBM)		V

NOTE: IFP Conditions: Pulse Width  $\leq$  10msec. and Duty cycle  $\leq$  1/10.

IFP 条件: 脉冲持续时间  $\leq$  10msec, 占空因素  $\leq$  1/10

※ Electrical-optical characteristics at Ta=25°C 电性光电特性

Parameter 参数	Test Condition 测试条件	Symbol 符号	Value 数值			Unit 单位	
			Min.最小	Typ.典型	Max.最大		
Forward voltage 正向电压	If=60mA	Vf	R	1.8	--	2.2	V
			G	3.0	--	3.5	
			B	3.0	--	3.5	
Luminous intensity 发光强度	If=60mA	Iv	R	600	--	800	mcd
			G	1200	--	1400	
			B	240	--	400	
Dominant wavelength 主波长	If=60mA	WLD	R	620	--	630	nm
			G	520	--	530	
			B	460	--	470	
Viewing angle at 50% Iv 半强角	If=60mA	2 $\theta$ 1/2	--	120	--	Deg	
Reverse current 反向电流	Vr=5V	Ir	--	--	10	$\mu$ A	

NOTE: 1. Tolerance of luminous intensity is  $\pm$  10%

发光强度公差为  $\pm$  10%

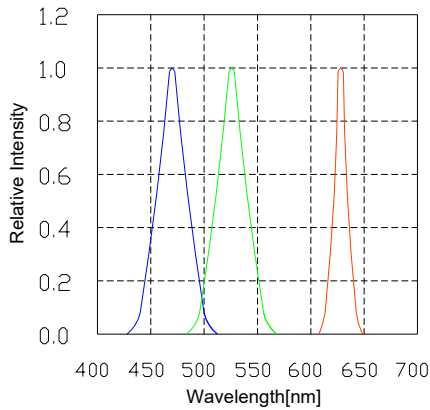
2. Tolerance of forward voltage is  $\pm$  0.05V

正向电压公差  $\pm$  0.05v

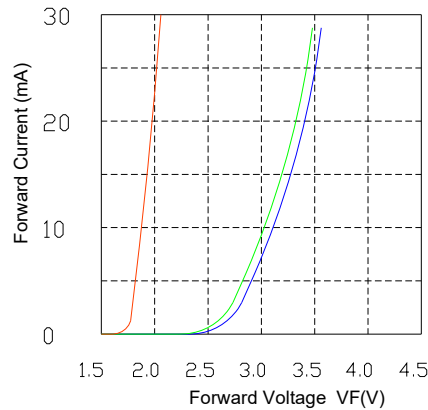
## ※ Typical optical characteristics curves 典型光电特性曲线

### Spectral Distribution

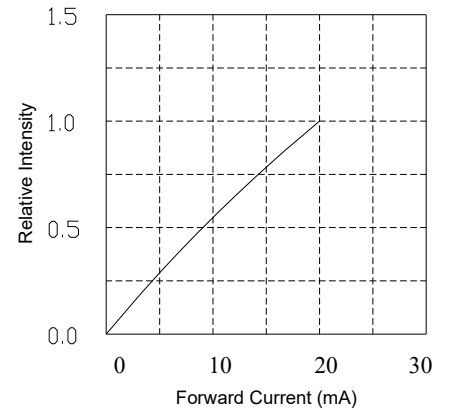
Relative Intensity vs. Wavelength (Ta=25°C)



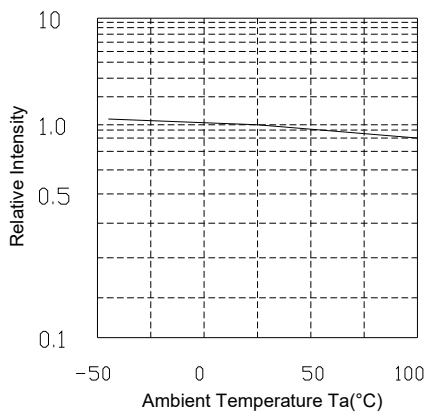
Forward Voltage vs. Forward Current (Ta=25°C)



Relative Intensity vs. Forward Current (Ta=25°C)

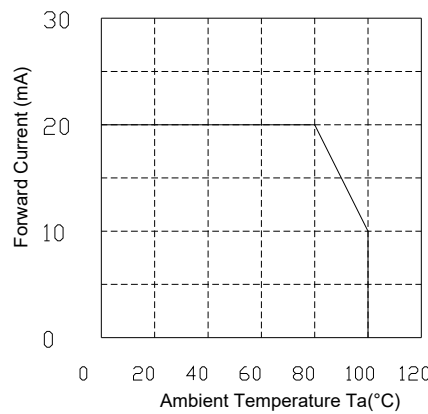


Relative Intensity vs. Ambient Temperature

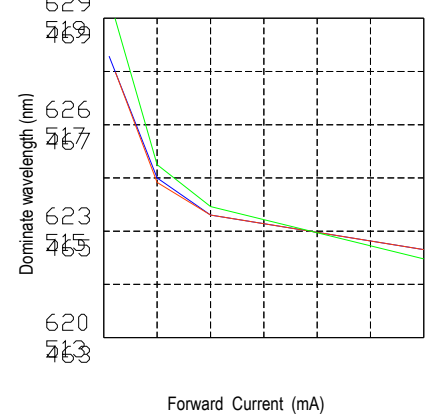


### Derating

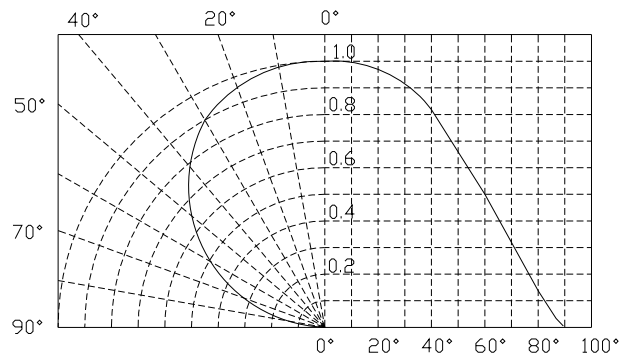
Ambient Temperature vs. Maximum Forward Current



Forward Current vs. Chromaticity (Ta=25°C)



### Diagram characteristics of radiation



※ **Reliability Test Items and Conditions** 可靠性测试项目及测试条件

No.	Test Item 测试项目	Test Conditions 测试条件	Note 频次	Number of Damaged 允许破坏数
01	Resistance to Soldering Heat(Reflow Soldering) 回流焊可承受条件测试	Tsld=260℃,10sec	2 times	0/22
02	Temperature Cycle 温度循环测试	-35℃ 30min ↑↓5min 85℃ 30min	100 cycle	0/100
03	Thermal Shock 冷热冲击测试	-35℃ 15min ↑↓ 85℃ 15min	100 cycle	0/100
04	High Temperature Storage 高温贮藏测试	Ta=80℃	1000 hrs	0/100
05	Temperature Humidity Storage 恒温恒湿贮藏测试	Ta=85℃ RH=90%	1000 hrs	0/100
06	Low Temperature Storage 低温贮藏测试	Ta=-35℃	1000 hrs	0/100
07	Power On/off Cycle Test IF=20mA 亮暗测试	On 2 hours ↑↓ Off 10min	100 cycle	0/100
08	Life Test 常温寿命测试	Ta=25℃ If=20mA	1000 hrs	0/100
09	High Humidity Heat Life Test 恒温恒湿寿命测试	60℃ RH=90% If=20mA	500 hrs	0/100
10	Low Temperature Life Test 低温寿命测试	Ta=-35℃ If=20mA	1000 hrs	0/100
11	Drop 跌落测试	75cm	3 times	0/10

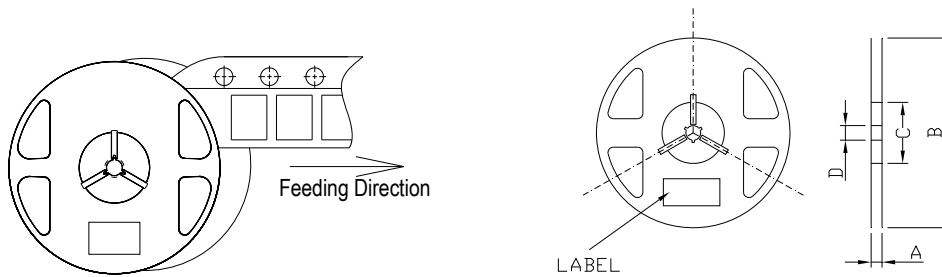
※ **Criteria for Judging the Damage** 破坏判定标准

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage 正向电压	VF	IF=15mA	-	U.S.L*)×1.1
Reverse Current 反向电流	IR	VR=5V	-	U.S.L*)×2.0
Luminous Intensity 发光强度	IV	IF=15mA.	L.S.L**)×0.7	-

## ※ Packaging Specifications 包装规格

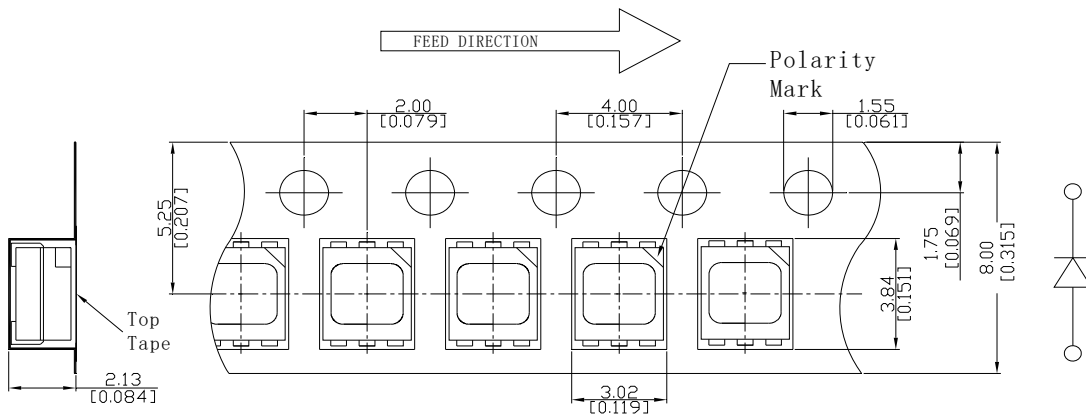
● Feeding Direction 卷带输送方向

● Dimensions of Reel (Unit: mm) 卷盘尺寸

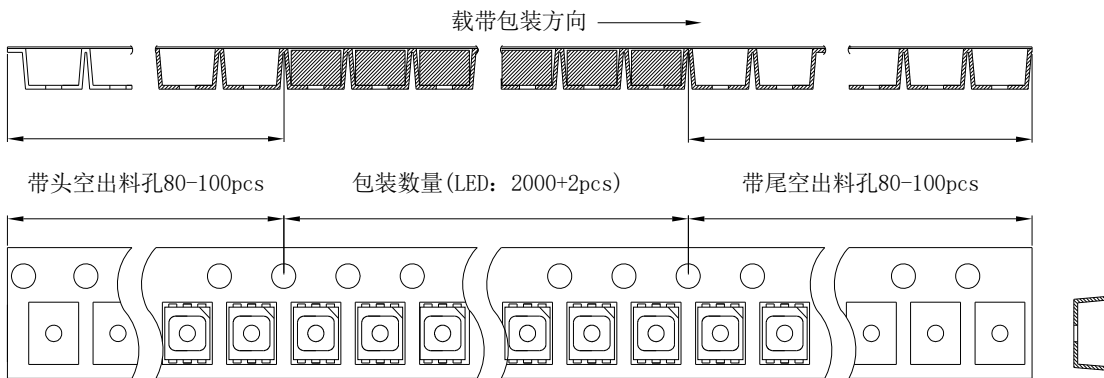


A	8.0±0.1mm
B	178±1mm
C	60±1mm
D	13.0±0.5mm

● Dimensions of Tape (Unit: mm) 卷带尺寸



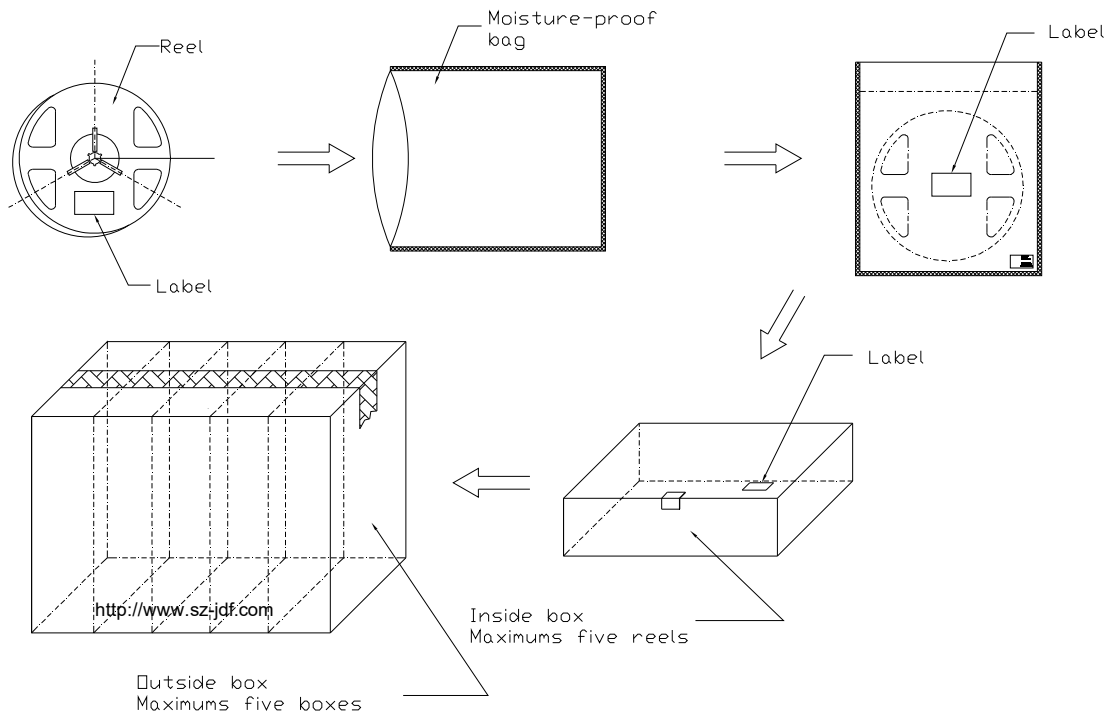
● Arrangement of Tape 卷带排列规格



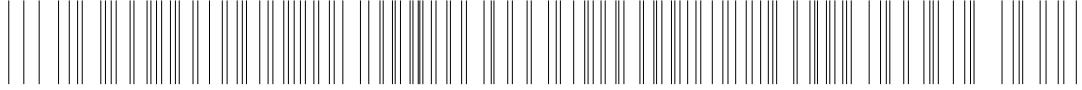


## NOTES

1. Empty component pockets are sealed with top cover tape;  
无材料部分同样用上封带密封
2. The maximum number of missing lamps is two;  
一卷材料对大差异数为2
3. The cathode is oriented towards the tape sprocket hole  
材料负极方向与卷带齿孔方向一致
4. 2,000 pcs/ Reel.  
2000pcs/卷

## ※ Packaging Specifications in box 纸箱包装规格



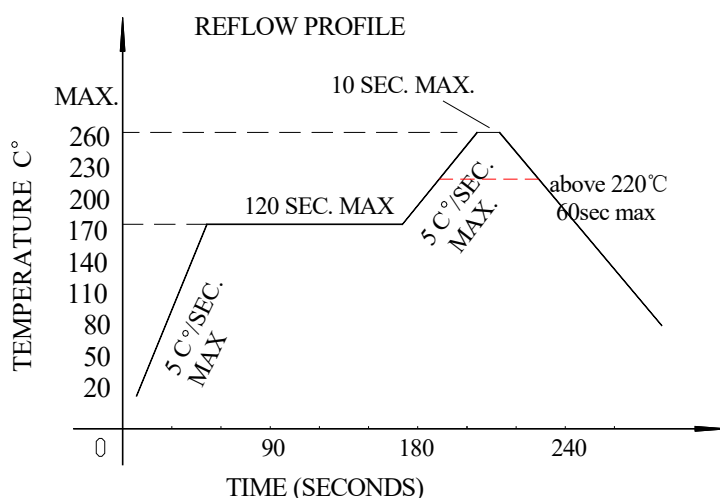
## ※ Label Description 标签描述

ORIENTAL		ROHS
		
PART NO.		
		WLD(X/Y):
BIN CODE:		IV:
		VF:
LOT NO.		DATE:

※ **Precautions for use** 使用规范

**Reflow Profile** 回流焊规范

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



Note: a) Reflow soldering should not be done more than two times.

材料焊接次数不超过2次。

b) Do not put stress on the LEDs when soldering.

焊接时请不要重压LED灯。

c) Do not warp the circuit board before it has been returned to normal ambient conditions after soldering.

焊接后温度未回降到常温时请勿扭曲电路板。

**Hand Soldering Profile** 手工焊接规范

The temperature of the iron should be lower than 300°C and soldering within 3sec per solder-pad is to be observed.

手工焊接时，烙铁温度不高于300°C，每个焊脚焊接时间不超过3秒。

**Storage Profile** 贮存规范

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

请在未准备使用LED之前不要打开防静电袋子。

2. The LEDs should be kept at 30°C or less and 60%RH or less before opening the package.

The max. storage period before opening the package is 1 year.

LED在未开封之前应保存在30°C以下，湿度在60%以下的环境中，最长保存期为1年。

3. After opening the package, the LEDs should be kept at 30°C/40%RH or less, and it should be used within 7 days

打开包装待后，LED需保存在30°C/40%湿度以下的条件，且必须在7天内使用完。

4. If the LEDs be kept over the condition of 3, baking is required before mounting. Baking condition as below: 60±5°C for 12 hours

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°C，12个小时。