

SMD 5730 Series Data Sheet

◆Features/特性

Super high efficiency

High reliability performance

Viewing angle 120°

Suitable for all SMT assembly and solder process

Complied with ROHS directive

高光效

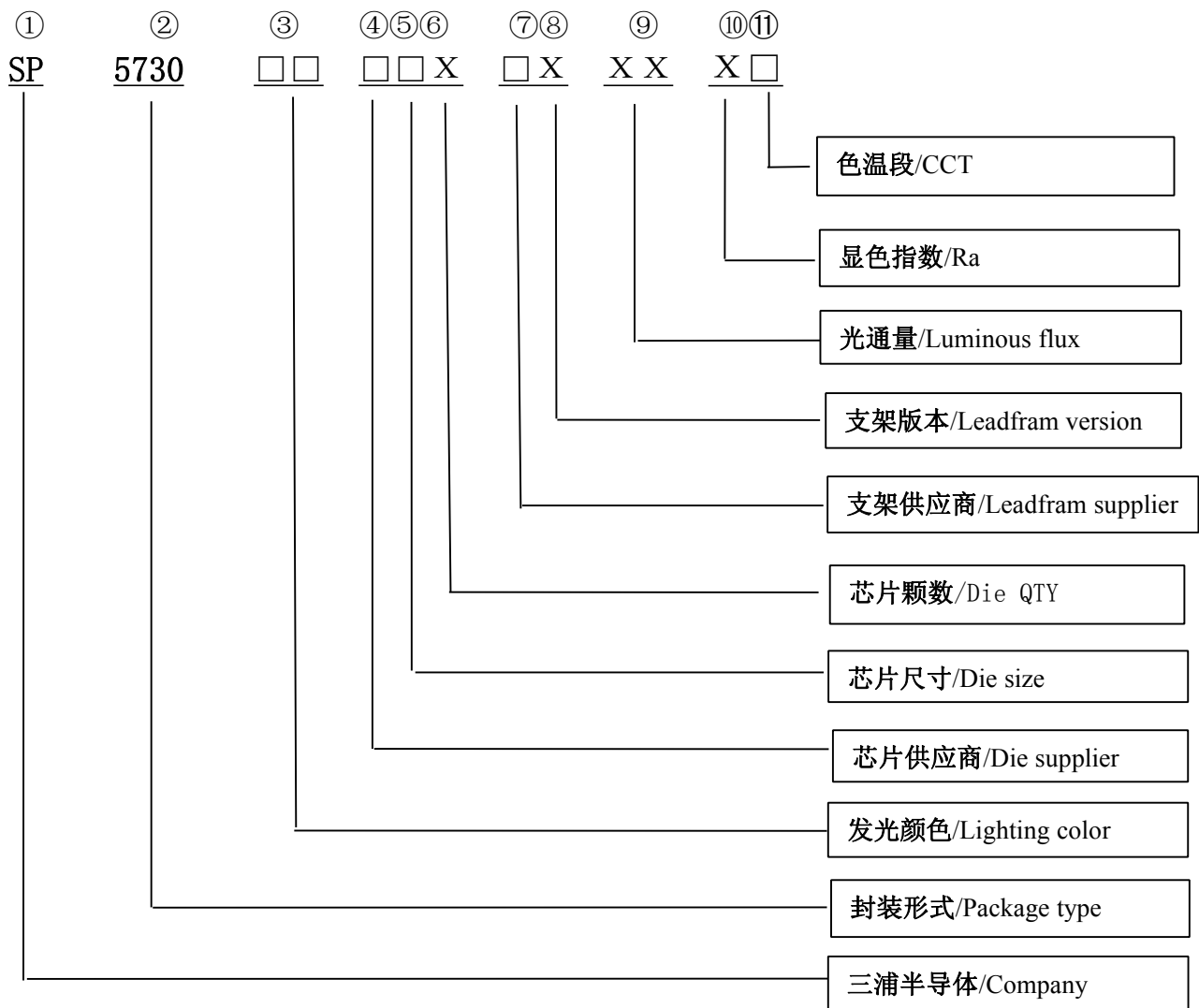
高可靠性

角度 120 度

适合所有 SMT 组装及焊接工艺

符合 ROHS 指令要求

◆Product Definition Code/LED 产品命名原则:



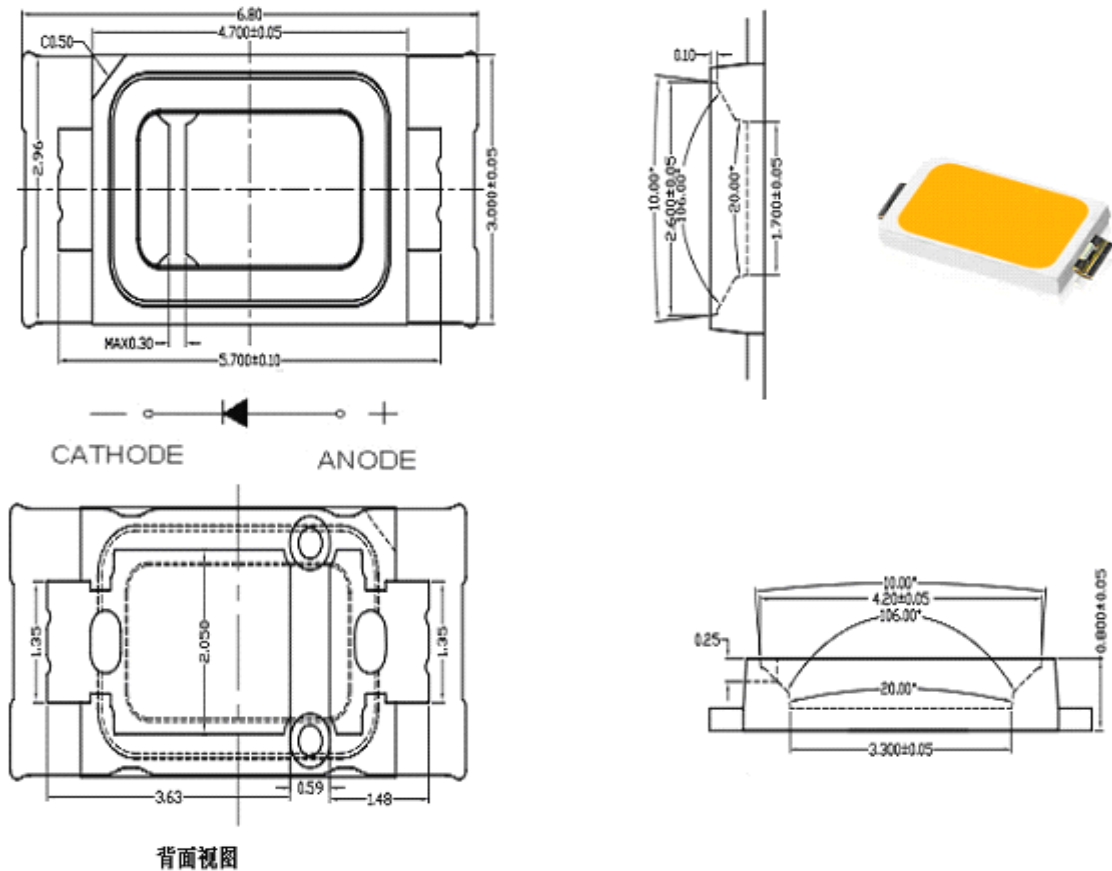
◆ Absolute maximum ratings/最大绝对额定值 (Ta=25℃):

Parameter 参数	Symbol 符号	Value 数值	Unit 单位
Forward Current 正向电流	If	150	mA
Reverse Voltage 反向电压	Vr	5	V
Operating Temperature 工作温度	Topr	-30~+85	℃
Storage Temperature 储存温度	Tstg	-40~+100	℃
Soldering temperature 焊接温度	Tsol	260±5℃ (for2sec)	℃
Power Dissipation 功率消耗	Pd	500	mW
Pulse Current 脉冲电流	I _{FP}	200	mA

◆ Shape Specification /外观要求:

No. 序号	ITEM 项目	SPEC OR DESCRIPTION 规格要求描述
1	Lens 胶体	◆ No change color/不可有胶体变色 ◆ No Disrepair/不可有破损 ◆ Scratch/划伤 (length ≤2.0mm,Width≤0.25mm) ◆ macula/黑点、异物 (≤0.25mm and ≤2EA in Encapsulation reverse) ◆ bubble/气泡 (≤0.3mm and ≤2EA Encapsulation reverse)
2	PIN PIN脚	◆ No oxidation/不可有氧化
3	Configuration 结构	◆ No Encapsulation reverse/不可封反
4	surface preparation 表面处理	◆ Cut needn't electroplate /切口处无需作电镀
5	Lens color 胶体颜色	◆ Yellow

◆ Dimensional drawing/封装尺寸图:



◆ Opto-Electrical Specification/光电参数规格 (Ta=25℃):

Parameter 参数	Symbol 符号	Min 最小值	Typ 平均值	Max 最大值	Unit 单位	Tolerance 误差值	Test Conditions 测试条件
Forward Voltage 正向电压	Vf	2.80	--	3.40	V	± 0.05	IF/正向电流=60mA Test Temperature 测试温度=25℃
Color Temperature 色温	TC	2000	--	15000	k	±100	
Chromatic coordinates 光谱坐标	X	--	--	--	/	±0.005	
	Y	--	--	--	/	±0.005	
Luminous Flux 光通量	Φ	46	--	56	Lm	±0.1	
Lighting Angle 发光角度	θ	--	120	--	deg	±2	
Reverse Current 反向电流	IR	--	--	5	μA	±0.1	Vr=5V

◆ **Opto- Electrical Characteristics / 光电特性:**

Figure 1 Forward Current vs. Forward Voltage.

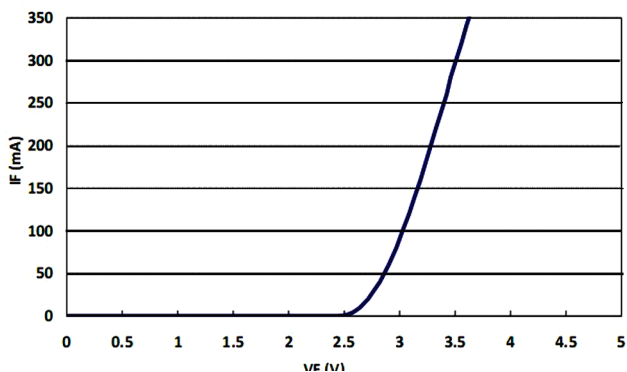


Figure 2 Relative Intensity vs. Forward Current.

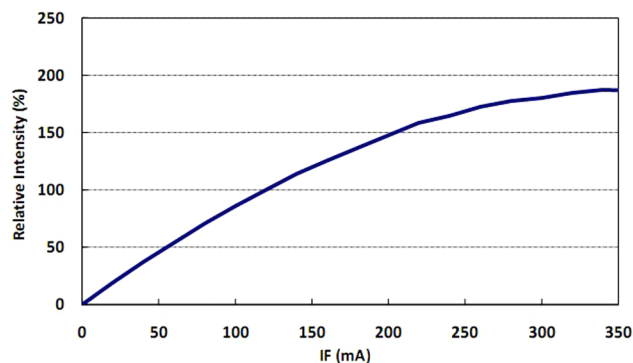


Figure 3 Wavelength Shift vs. Forward Current.

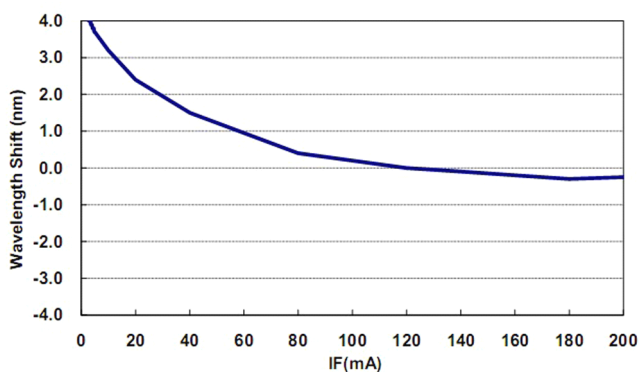


Figure 4 LED Spectrum.

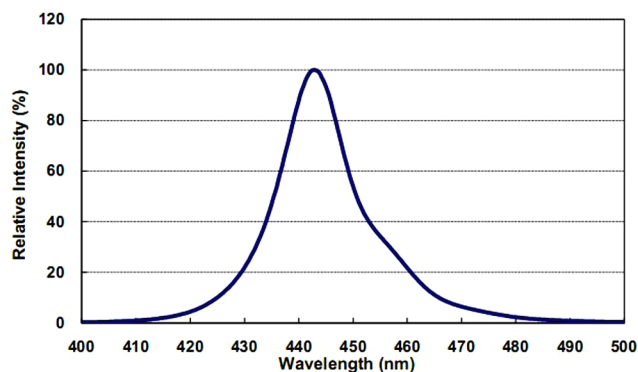


Figure 5 The voltage and temperature curve

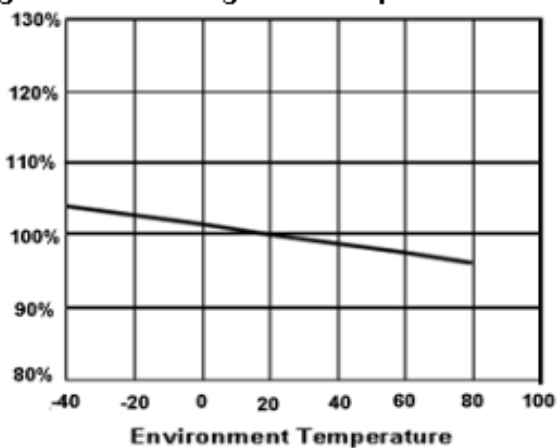
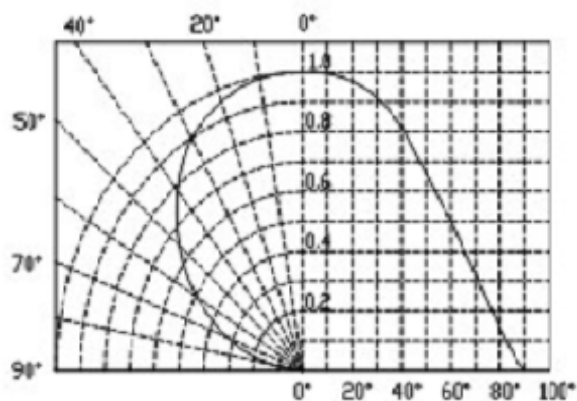


Figure 6 Lighting Angle



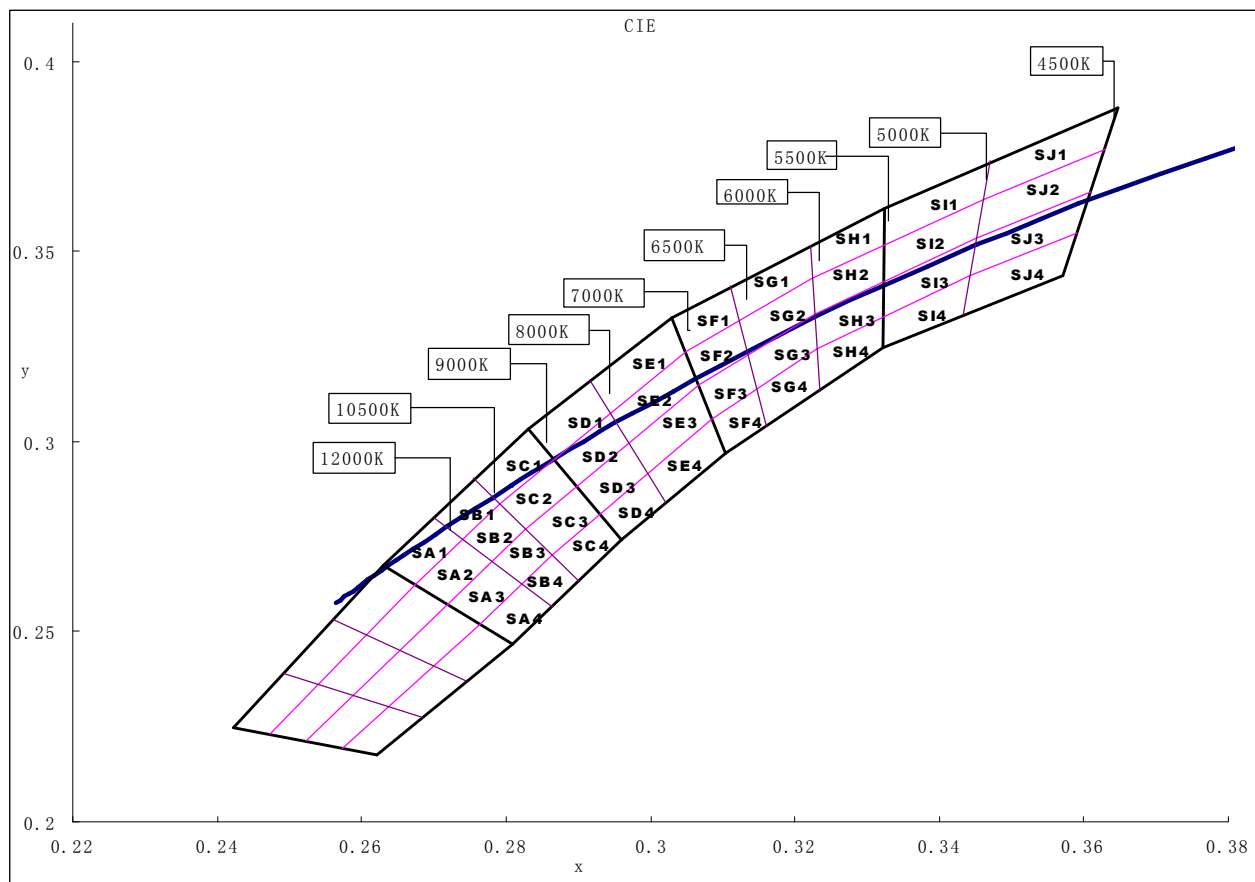
◆ Reliability Test Items/可靠度测试项目:

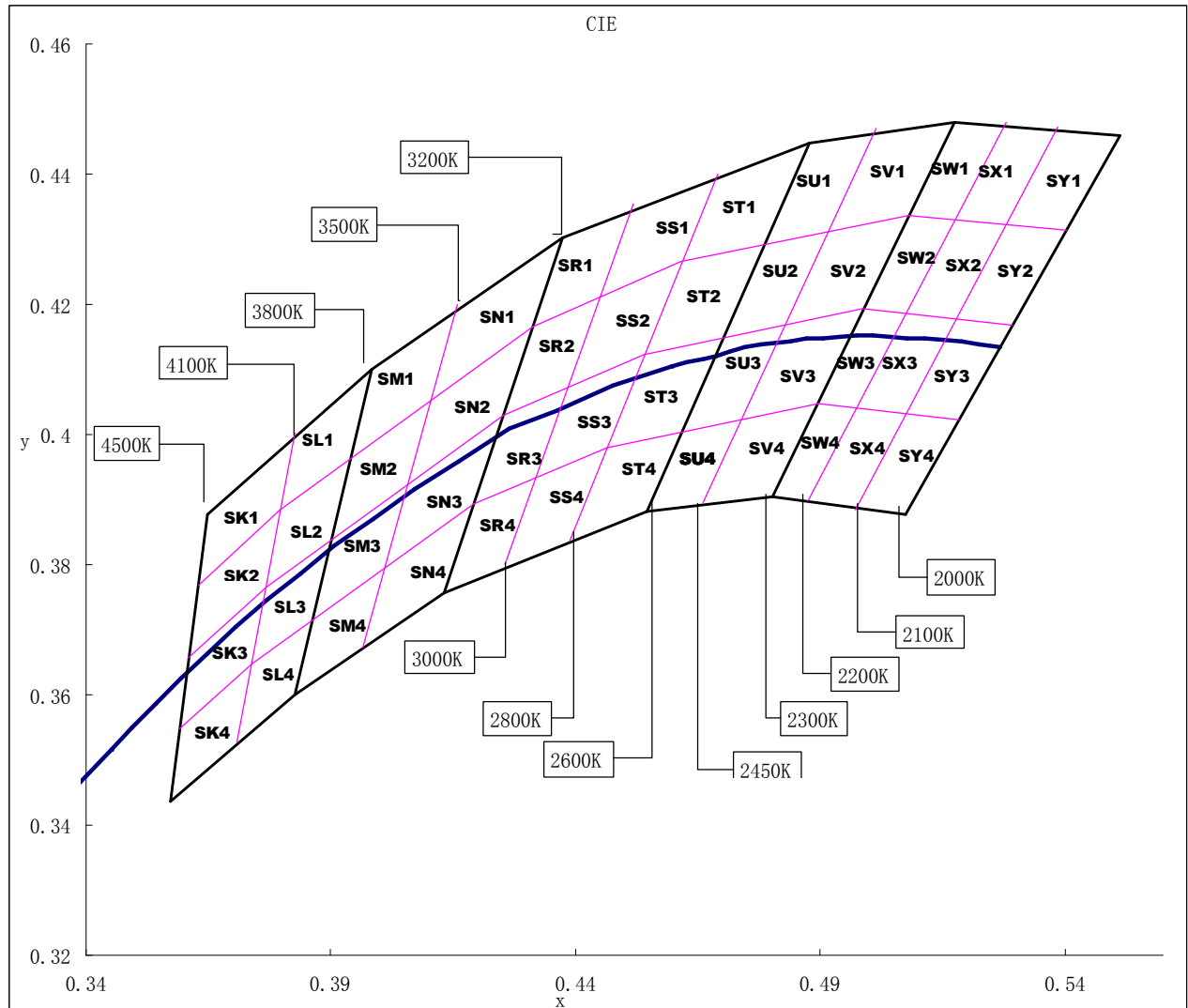
No.	Item 测试项目	Condition 测试条件	Time/Cycle 测试时间或周期	Number of Damaged 不良数/测试数
1	Temperature Cycle Test 温度循环测试	-40℃→25℃→+100℃→25℃; 30min, 5min	200 Cycles	0/50
2	High Temp. Storage 高温储存	100 °C	1000Hrs	0/50
3	Low Temp. Storage 低温储存	-40 °C	1000Hrs	0/50
4	High Temp. High Humidity Storage 高温高湿储存	60 °C, 90 % RH	1000Hrs	0/50
5	Operation Life Test 常温寿命老化	Room Temp., 150mA	1000Hrs	0/50
6	Low Temp. Operation Life Test 低温寿命老化	-30 °C , 150mA	1000 Hrs	0/50
7	High Temp. Operation Life Test 高温寿命老化	85 °C , 150mA	1000 Hrs	0/50
8	High Temp.High Humidity Operation Life Test 高温高湿寿命老化	60 °C, 90 % RH IF=150mA	1000 Hrs	0/50
9	Soldering Heat Test 耐旱性 (回流焊)		2sec	0/50
10	Solderability 可焊性	235℃/5s	1 sec	0/50

◆ **Judgment Criteria/判定标准:**

Item 项目	单位 Symbol	测试条件 Test Conditions	判定标准 Judgment Criteria
Forward Voltage 正向电压	V _f	I _F = 150 mA	Δ% < 10 %
Leakage Current 反向漏电流	I _r	V _r = 5V	< 5 uA
Luminous Intensity 发光强度	I _v	I _F = 150 mA	Δ% < 10%
Luminous Flux 光通量	I _m	I _F = 150 mA	Δ% < 10%

◆ **Color Coordinate Comparison./分 BIN 参数图:**





◆Range of bins 分光等级:

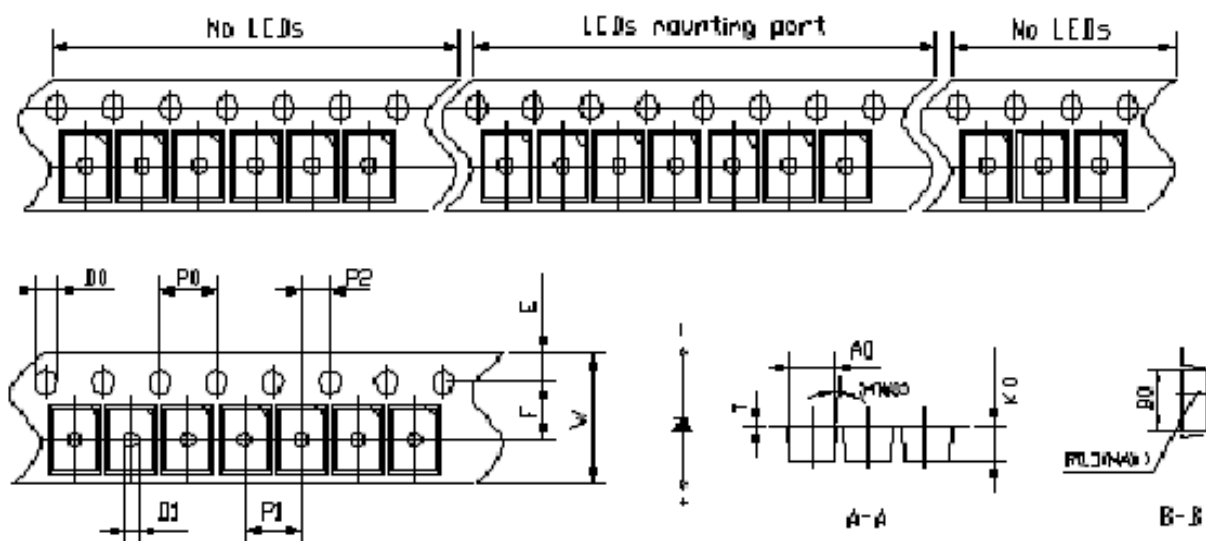
Forward Voltage 正向电压	Luminous Flux 光通量	Color Temperature 色温	Color Rendering Index 显色指数	Chromatic coordinates 光谱坐标		Test Conditions
				X	Y	测试条件
2.9-3.0 v	46-48Lm	2600-12000 k	>70	X1:0.3376	Y1:0.3245	IF/正向电流=150mA Test Temperature/ 测试温度=25℃
3.0-3.1v	48-50Lm		>80	X2:0.3489	Y2:0.3349	
3.1-3.2v	50-52Lm			X3:0.3382	Y3:0.3771	
3.2-3.3v	52-54Lm			X4:0.3565	Y4:0.3912	
3.3-3.4v	54-56Lm			以 BIN CODE 代码区分		

(色温同 BIN 代码的对应表)

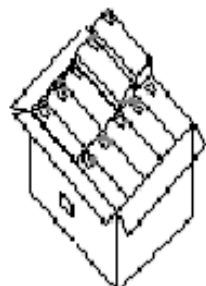
冷/正白光 COOL White		自然白 Natural white		暖白光 Warm White	
CCT (K)	BIN	CCT (K)	BIN	CCT (K)	BIN
12000-15000	SA1	4500-5000	SJ1	3200-3500	SN1
	SA2		SJ2		SN2
	SA3		SJ3		SN3
	SA4		SJ4		SN4
10500-12000	SB1	4100-4500	SK1	3000-3200	SR1
	SB2		SK2		SR2
	SB3		SK3		SR3
	SB4		SK4		SR4
9000-10500	SC1	3800-4100	SL1	2800-3000	SS1
	SC2		SL2		SS2
	SC3		SL3		SS3
	SC4		SL4		SS4
8000-9000	SD1	3500-3800	SM1	2600-2800	ST1
	SD2		SM2		ST2
	SD3		SM3		ST3
	SD4		SM4		ST4
7000-8000	SE1			2450-2600	SU1
	SE2				SU2
	SE3				SU3
	SE4				SU4
6500-7000	SF1			2300-2450	SV1
	SF2				SV2
	SF3				SV3
	SF4				SV4
6000-6500	SG1			2200-2300	SW1
	SG2				SW2
	SG3				SW3
	SG4				SW4
5500-6000	SH1			2100-2200	SX1
	SH2				SX2
	SH3				SX3
	SH4				SX4
5000-5500	SI1			2000-2100	SY1
	SI2				SY2
	SI3				SY3
	SI4				SY4

地址: 深圳市宝安区福永街道福园一路高新技术工业园第二栋 电话: 86-755-33935557 33935558
 传真: 86-755-33935559 E-mail: szline@spsemi.com.cn sales@spsemi.com.cn

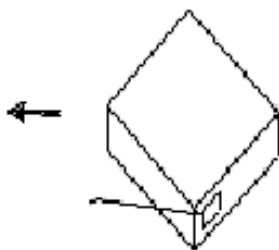
◆Packaging Specifications/包装规格:



symbol	A0	B0	K0	P0	P1	P2	model	unit
spec	3.10 ± 0.10	5.8 ± 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	12 ± 0.10	0.235 ± 0.05	1.75 ± 0.10	3.5 ± 0.10	$1.50^{+0.10}_{-0.00}$	$1.00^{+0.10}_{-0.00}$	5730	mm



10 inner box in one carton
(每个外箱10个内箱)
box size=500*400*270mm



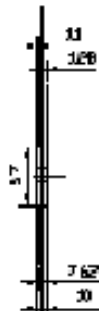
maximun 6 bags in 1 inner box
(每盒6袋装)
box size=250*240*75mm



shielding bag
(屏蔽袋)

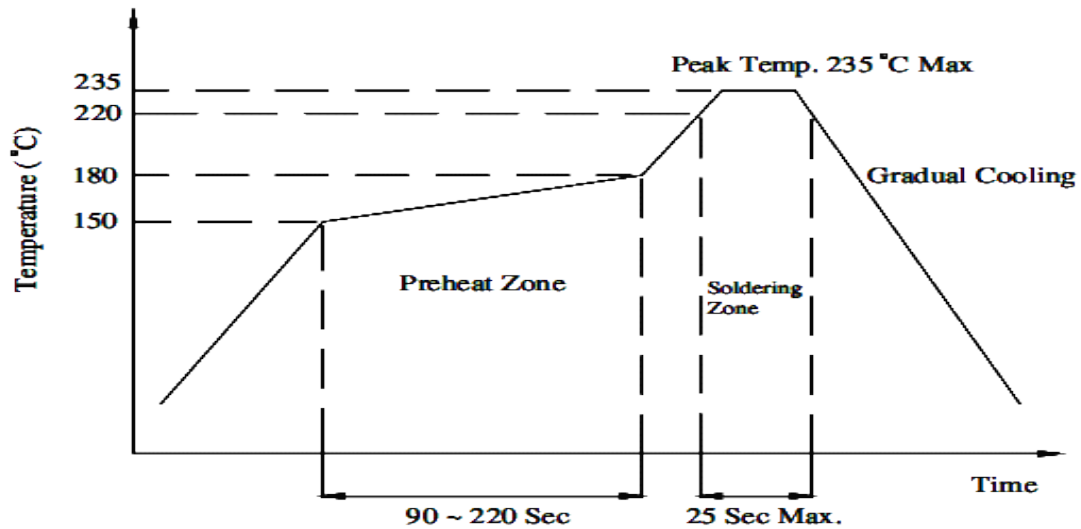


7 inch Anei-static reel
max 4000pcs/reel

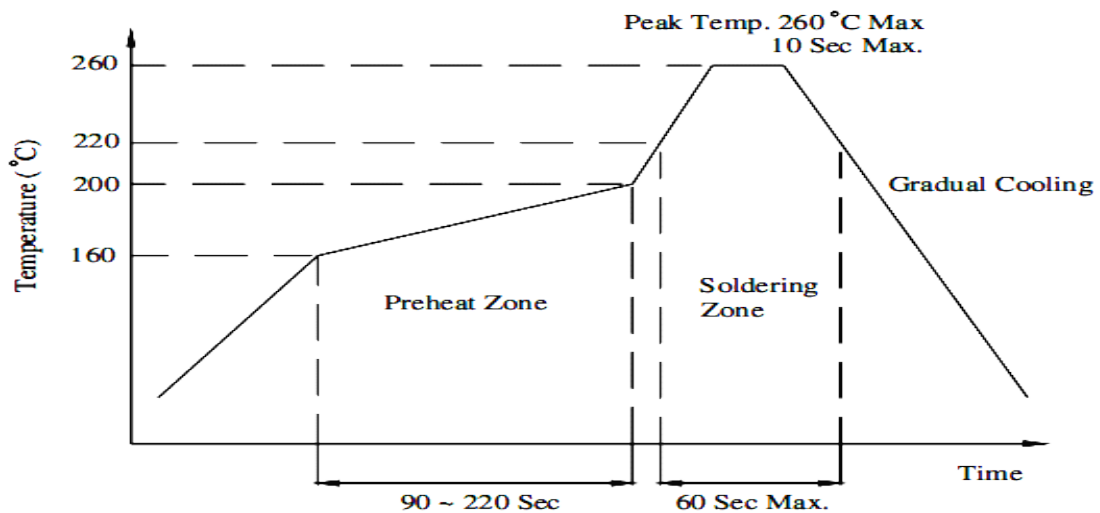


◆ **Reflow/回流焊接:**

Lead Solder/有铅焊接



Lead-Free Solder/无铅焊接



◆Caution/注意事项:

- 1、Before opening the package: the LED should be kept at 30°C or less and 90 % RH or less.
打开包装前请在温度 **30 °C** 湿度 **90%** 的环境以下储存。
- 2、After opening the package : the LED should be kept at 30 °C or less and 30%RH or less. The LED should be soldered within 168h (7days) after opening the package. If unused LEDs remain, they should be stored in moisture proof package, such as sealed containers with packages of moisture absorbent material (silica gel). It is also recommended to return the LEDs to the original moisture proof bag and to seal the moisture bag again.
打开包装后, **LED** 请在温度 **30 °C** 湿度 **60%** 的环境以下储存, 并应在 **168** 小时内完成焊接。如果包装打开后, 未用完的 **LED** 应放置在防潮包装中, 比如含有防潮剂(硅胶)的袋子中。建议将此 **LED** 返回到原始包装带中并将其封口。
- 3、After opening the package, if the humidity indicator's color change from blue to pink at 30% or more, and if the LEDs have exceeded the storage time, bake treatment should be performed using the following conditions. baking treatment : more than 24 hours at 60±5 °C.
打开包装后, 如果发现湿度指示卡的颜色由蓝色变为粉红色并且是在 **30%** (含 **30%**) 以上, 或者产品超过储存时间, 干燥处理如下: **60±5 °C**, **24** 小时以上。
- 4、The LED is an ESD sensitive device. All the equipment and machine must be properly grounded.
LED 是静电敏感器件, 使用时所有设备、机构都需有适当的接地导电措施。
- 5、When make use of it, please use static-free container, operator should wear antistatic clothes and rope-static-ring also should make effective ground
使用时请使用防静电的盛装容器, 作业人员应穿着防静电服装及佩戴有绳之静电环并作有效接地。
- 6、Damaged device will appear some symptoms, lower forward voltage, higher leak current, or even short current.
受静电与突波破坏之 **LED** 电性特性上, 会有明显的漏电流, 或驱动电压明显变低, 甚至是短路现象。
- 7、After soldering the LED should keep out of any shake or outer force before it comes to normal temperature
上在焊接温度回到正常以前, 必须避免使 **LED** 受到任何震动或外力。
- 8、Reflow soldering should not be done more than two times, when soldering, do not put stress on the LEDs during heating. After soldering, do not warp the circuit board. Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed before hand whether the characteristics of the LEDs will not be damaged by repairing.
LED 不宜过两次回流焊接, 在高温焊接期间, 不要在 **LED** 表面施压。**LED** 焊接后, 不要弯曲线路板。**LED** 焊接后不宜进行返修, 当返修不可避免时, 请事先确认返修是否使 **LED** 的特性受到破坏, 再确定是否使用双头烙铁进行返修。
- 9、LED is one-way continuity, please check electrode before mount, if mount wrong, the LED chip will damage or fail when LED applied voltage
LED 单向导通性, 安装前确认极性, 若装反, 在施加电压时容易造成 **LED** 芯片损伤或失效。
- 10、Please design the PCB board to keep a distance between LED and other emit heat component
线路设计时, 请尽量避免将 **LED** 与发热组件靠得过近。
- 11、Strongly recommend design the board according setting current other than setting voltage. if you are really need setting voltage type please consider there may cause influence arise by difference voltage of difference LED
电路设计上, 建议以定电流设计, 若为定电压设计, 请考虑 **LED** 之间不同正向电压所可能造成之影响。
- 12、The outer voltage change will bring the current index change. unsuitable design and current control, easy cause LED fail. for example excess current will cause LED life short or even burn down, too little



深圳市三浦半导体有限公司

SHENZHEN SANPU SEMICONDUCTOR CO.,LTD.

electricity will cause lacking light

LED 之外加电压变化，会造成电流指数级变化，不当之设计与电流控制，易造成 **LED** 失效，如电流过大引起寿命问题甚至烧毁，电流过小引起亮度不足。

13、If you need make difference BIN LED in the one module .please confirm whether it can meet the electric and optics characteristic require such as the current balance, emitting and brightness consistency.

不同 **BIN** 号之 **LED** 需安装在同一个组件时，请先确认是否可满足相关电气及光学之特性要求，如电流是否均衡，光色、亮度一致性等。