LatticePower @ CSP-1919

Product Describe:

CSP 1919 is a High-Power 4W LED of LatticePower.Through the latest Chip manufacturing technology， it contains many features as high luminous efficiency，resistance to high current and low thermal resistance etc.

Applications:

Automobile、Indoor and Outdoor lighting

Features

- **According to the ANSI standard colour gamut**
- **Compatible wiht SMT**
- **Size： 1.90mm×1.90 mmx0.29mm**
- **Typical Color Temperature and Luminous Flux：**
  5700K 295 lm@700ml 25 ℃/Ra70
- **Viewing Angle：120 °**
- **Chip：Sapphire Flip Chip**

http://www.latticepower.com/

Note：LatticeBright is provided with intellectual property rights and related patents，you need to have the patent permission to use the silicon substrate technoloy.

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Applications:

Indoor and Outdoor lighting

Auotmotive lighting

Flash-lighting

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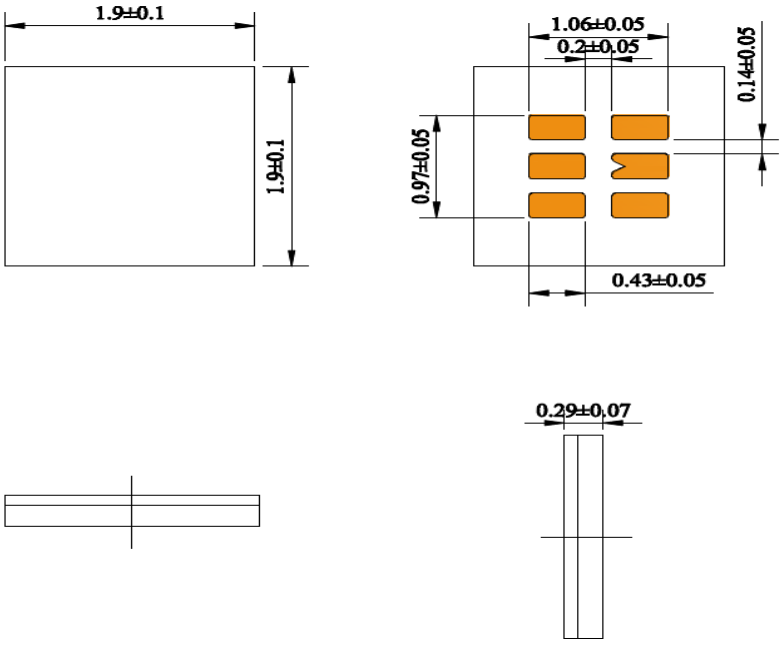
Product Size



Note：Please strictly refer to the positive and negative of the product Unit：mm.

Electro Characteristics（T solder pad =25 ℃）

Parameter	Symbol	Min.	Typ.	Max.	Unit	conditions
Luminous Flux	Φ	270	295	330	lm	IF=700mA & 25 ℃
Forward Voltage	VF	2.9	3.0	3.2	V	
Forward Current	IF		700	1200	mA	
Reverse Voltage	VR			5	V	
Colour TEMP	CCT		5700		K	
CRI	Ra		70			
Viewing Angle	2θ1/2		120		°	
Thermal Resistance			0.7		℃ /W	
Human Body Model	ESD		2000		V	
Juntion TEMP	Tj			135	℃	

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Luminous Flux Characteristics（T solder pad = 25 ℃）

Color TEMP	CCT		Luminous Flux@25 ℃					
	Min.	Max.	350mA		700mA		1000mA	
			Flux	Efficiency	Flux	Efficiency	Flux	Efficiency
Cold White	5000K	8000K	162	158	295	138	384	124

Note: ① It maintains a tolerance of ±7% on luminous flux measurements.
② Flux and Effiency' s unit is Lm and Lm/W.

Product Code

19 - 2A - PB - 70 - B3

Product Type	Colour Area	Brightness	CRI	VF

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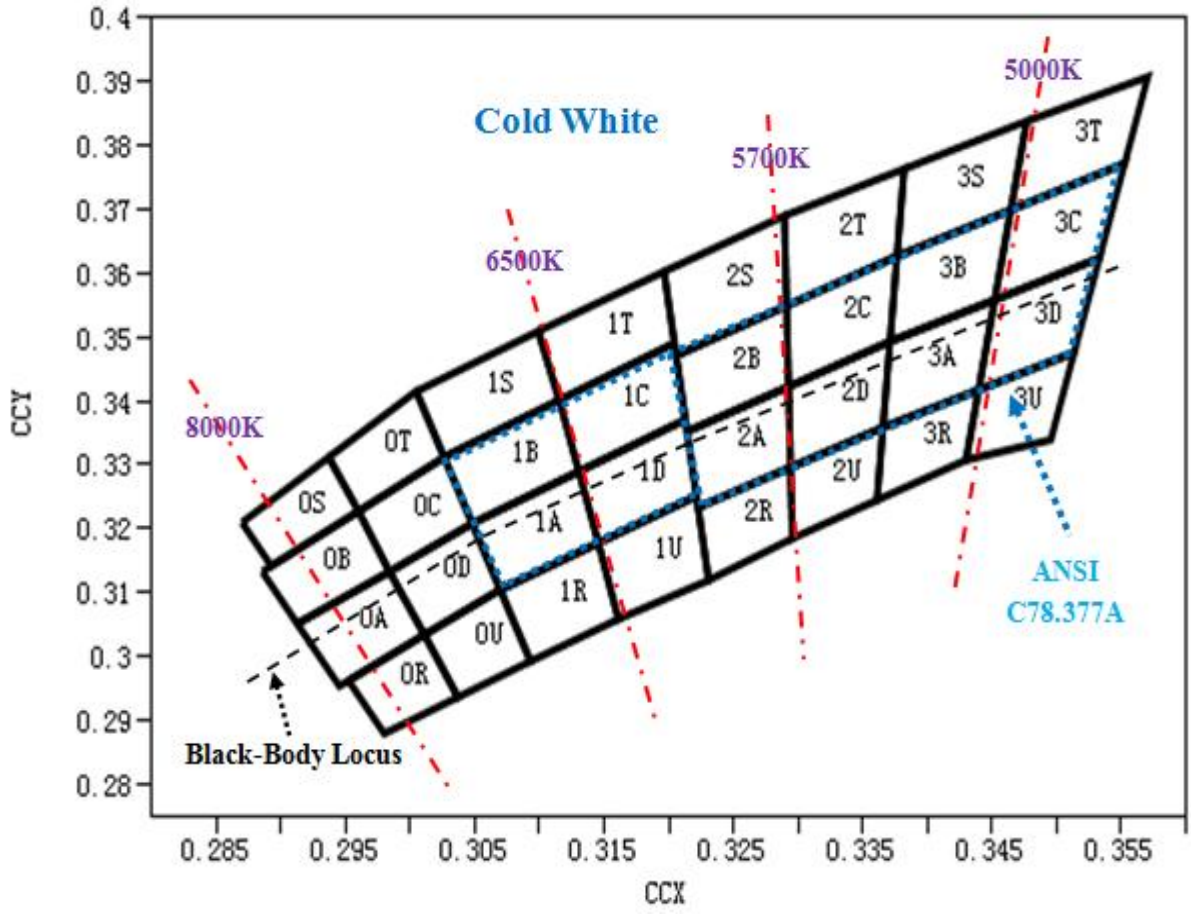
Bins Regin

1.Color Bins



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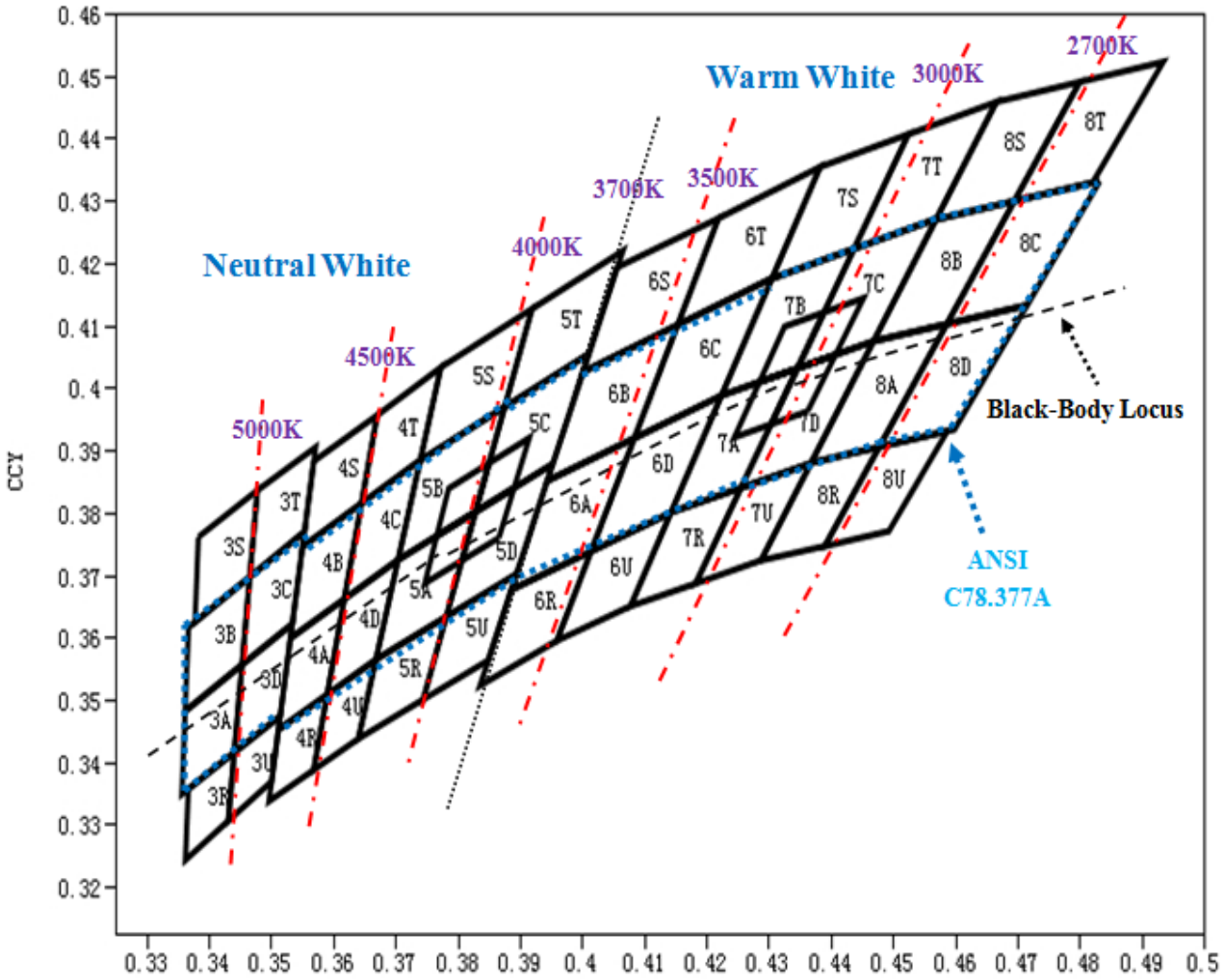

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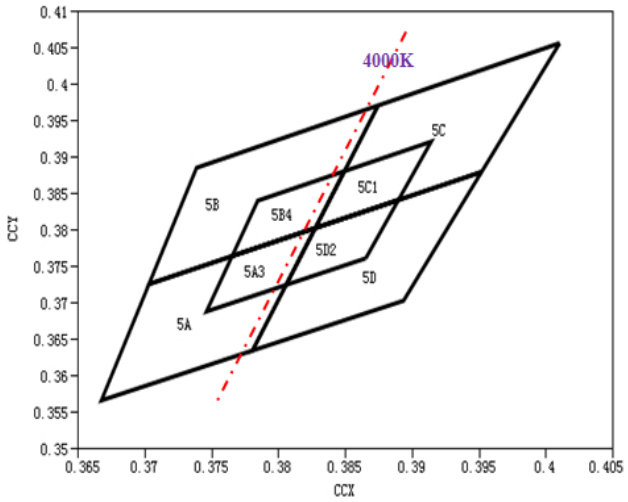
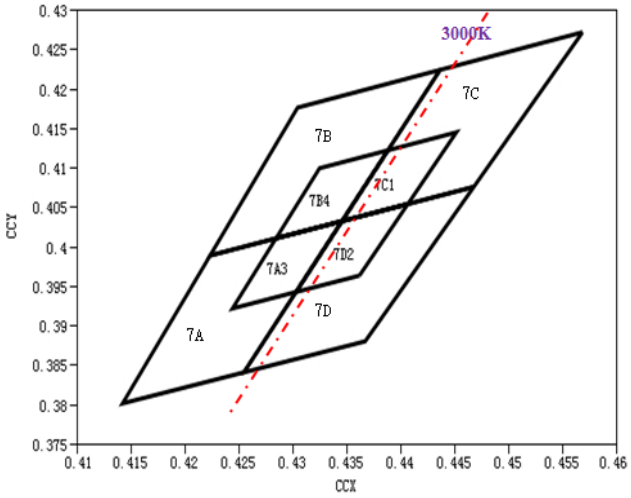
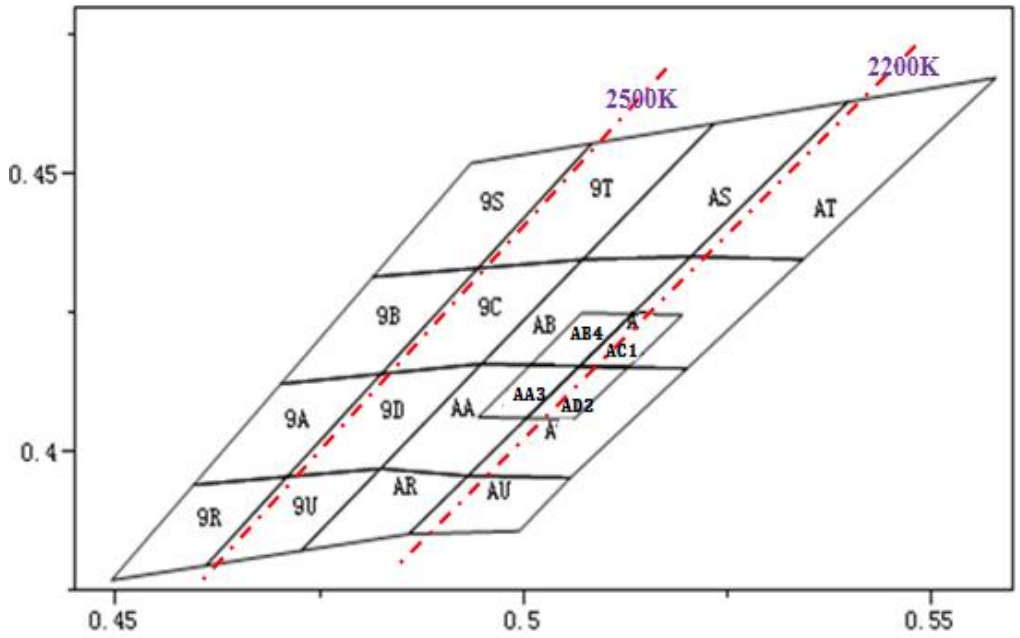
Color Bins for 2200K，3000K，4000K







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The Chromaticity And Color Temperature Table(K)	
Typical Color Temperature	**Chromaticity Areas**
2200	AA、AB、AC、AD、AA、AB4、AC1、AD2
2500	9A、9B、9C、9D
2700	8A、8B、8C、8D
3000	7A0、7B0、7C0、7D0、7A3、7B4、7C1、7D2
3500	6A、6B、6C、6D
4000	5A0、5B0、5C0、5D0、5A3、5B4、5C1、5D2
4500	4A、4B、4C、4D、4R、4S、4T、4U
5000~5700	2C、2D、2T、2U、3A、3B、3R、3S
5700~6500	1C、1D、1T、1U、2A、2B、2R、2S
6500~8000	0A、0B、0C、0D、0R、0S、0U、0T、1A、1B、1R、1S

2.Luminance Bins

Bin	Min.	Max.	Condition
MB	250	270	T solder pad = 25℃ IF=700 mA
NB	270	290	
PB	290	310	
QB	310	330	
RB	330	350	

Note: It maintains a tolerance of ±7% on luminous flux measurements.

3.CRI Bins

BIN	Range
60	60~100
70	70~100

Note: It maintains a tolerance of ±2 on CRI measurements.

4.Voltage Bins

BIN	Range
B2	2.8-3.0
B3	3.0-3.2
B4	3.2-3.4
B5	3.4-3.6

Note: It maintains a tolerance of ±0.05 on VF measurements.

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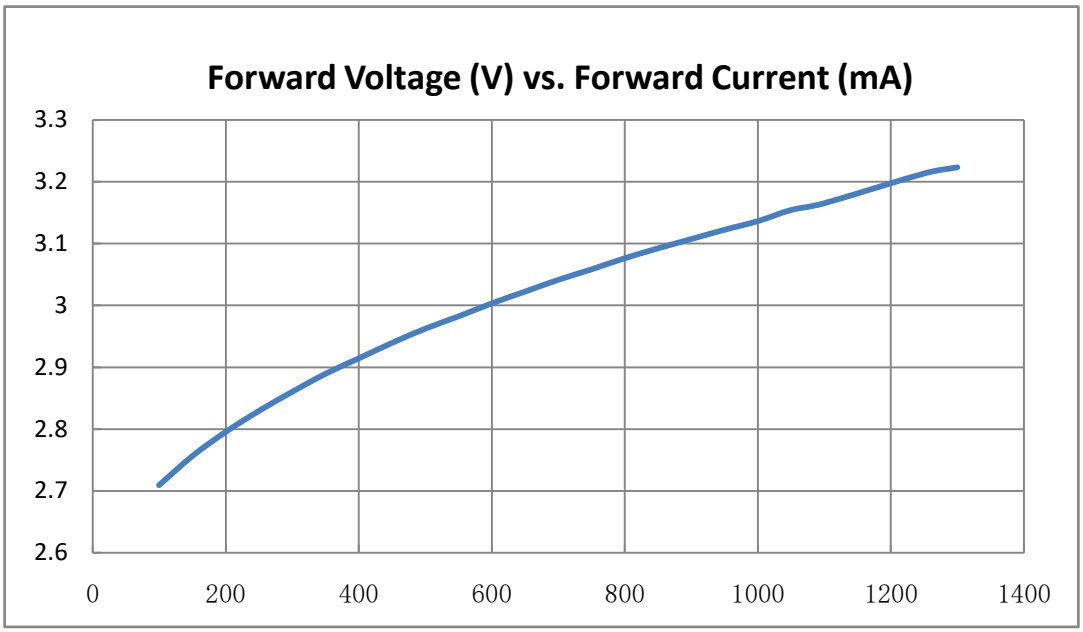
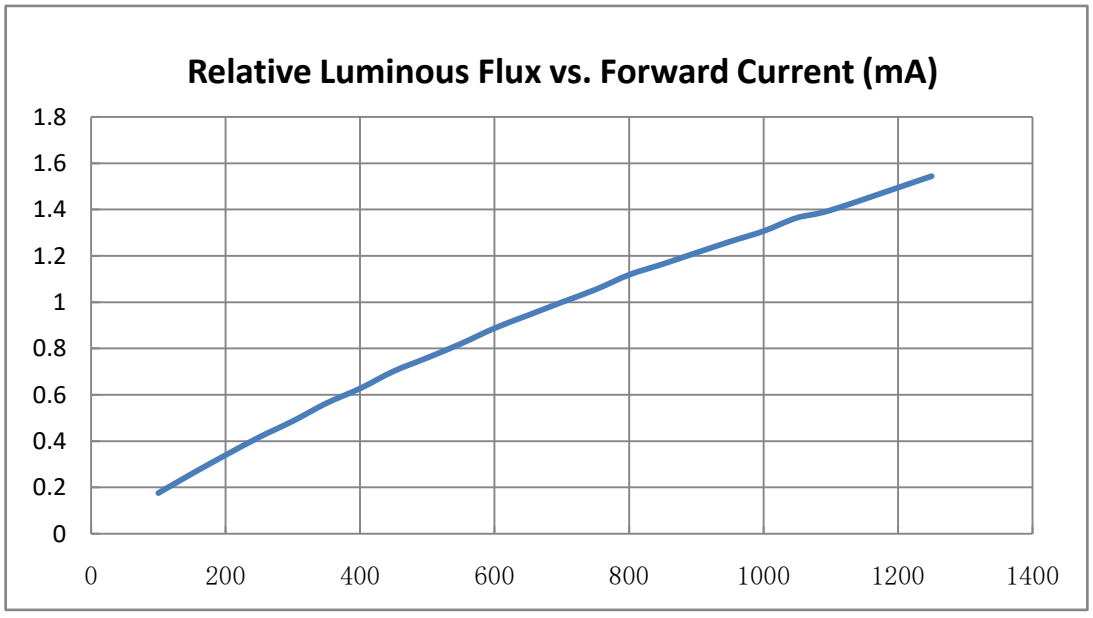
The Photoelectric Characteristics Graph（Tj= 25 ℃,6000K）

Safe use advised within the scope of photoelectric curve





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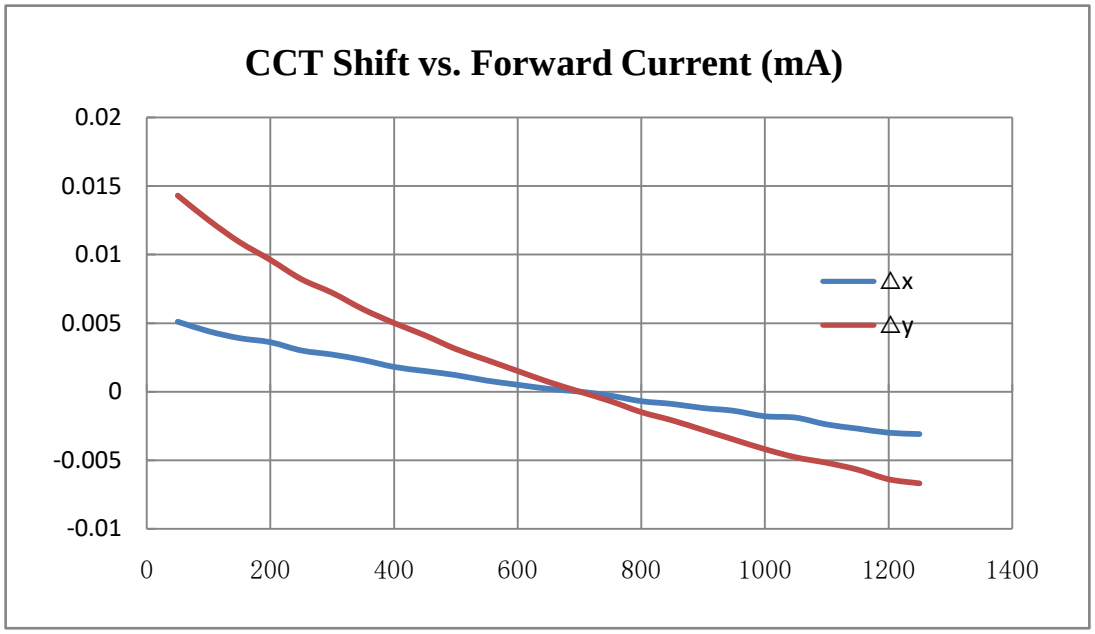

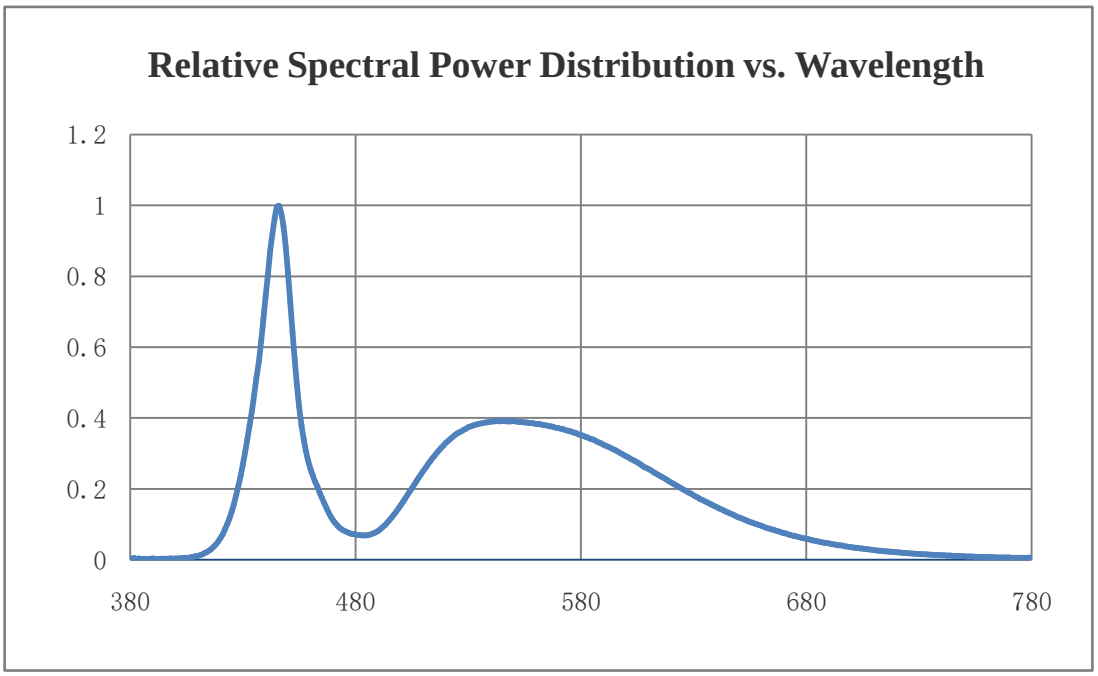

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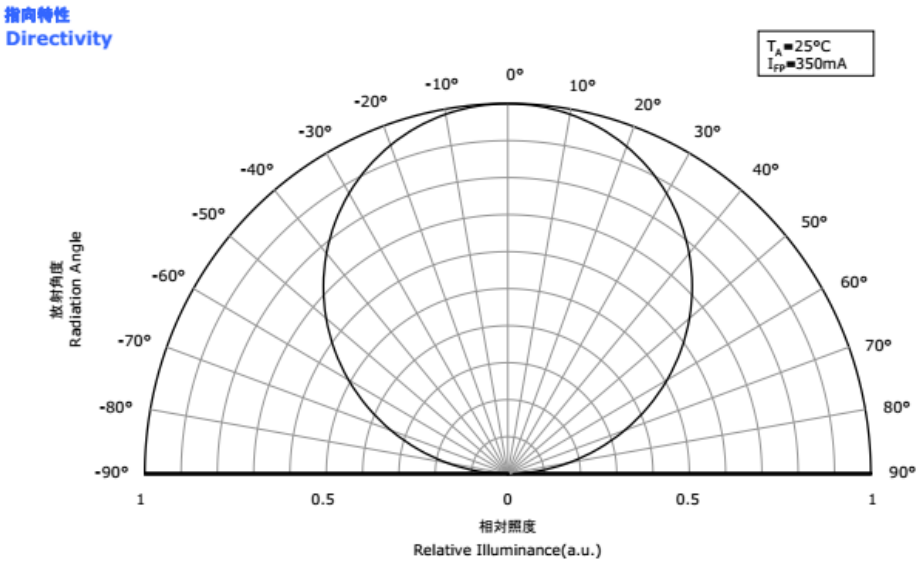
All characteristics shown are for reference only and not guaranteed.



- The graphs above the characteristics for Ra70 LEDs of this product

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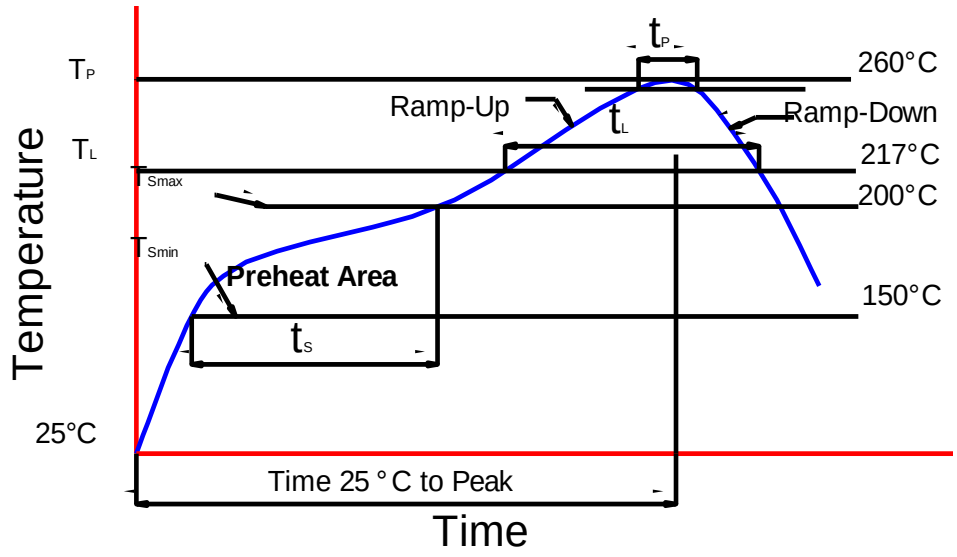
Reflow Soldering Temperature Graph



Profile Feature	Lead-Free Solder
Average Ramp-Up Rate （Tsmax to	3 ℃/sec max.
Preheat:Temperature Min（Tsmin）	150
Preheat:Temperature Max	200
Preheat:Time（tsmin to tsmax ）	60-120 secs
Time Maintained	217℃
Time Maintained Above:Time（tL）	60-150 secs
Peak/Classification	260℃
Time Within 5℃ of Actual Peak	5 secs
Ramp-Down Rate	6℃/sec max.
Time 25 ℃ to Peak Temperature	8 minutes Max.

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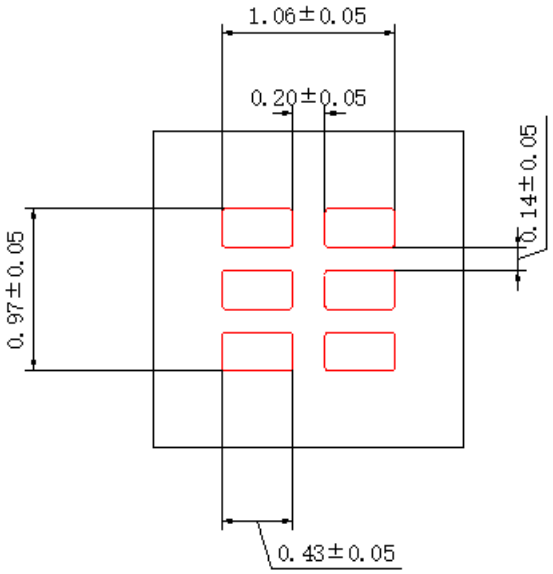
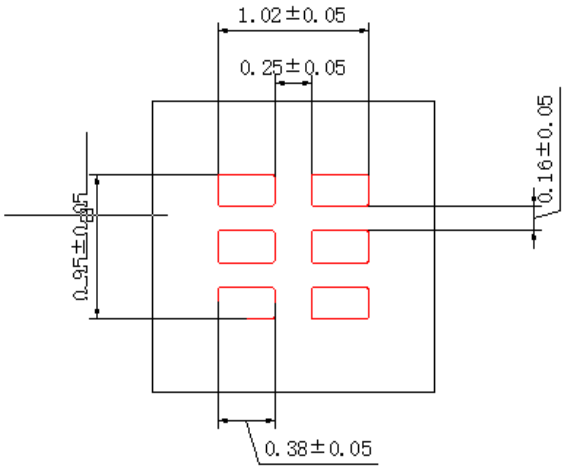
PCB Pad Dimensions



Soldering Pad Design



Meter Solder Stencil Aperture Unit：mm.

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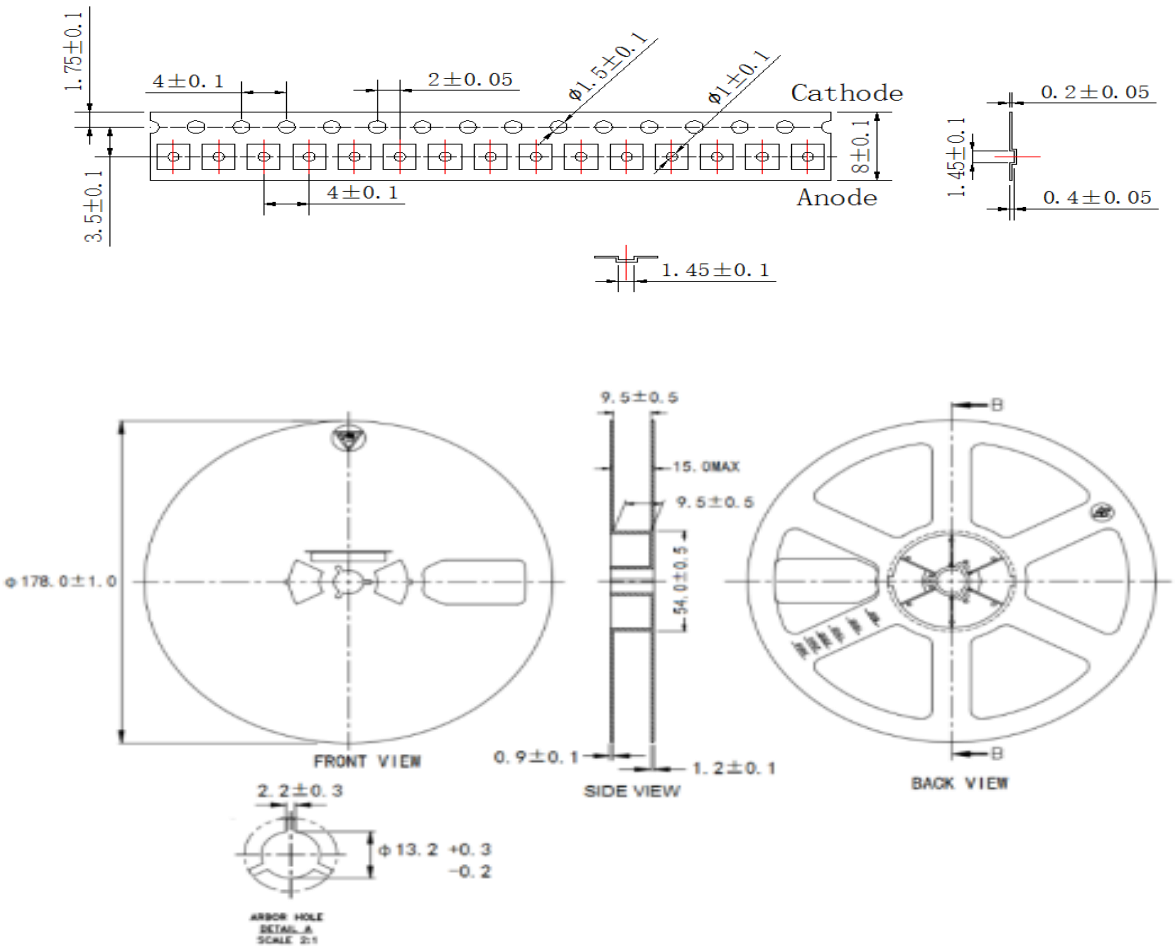
Package Type

Unit：mm



- Reelsize:6000pcs.
- The tape packing method complies with IJSC0806(Packing of Electronic Components on Continuous Tapes.
- When the tape is rewound due to work interruptions, no more than 10N should be applied to the embossed carrier tape. The LEDs may stick to the cover tape.

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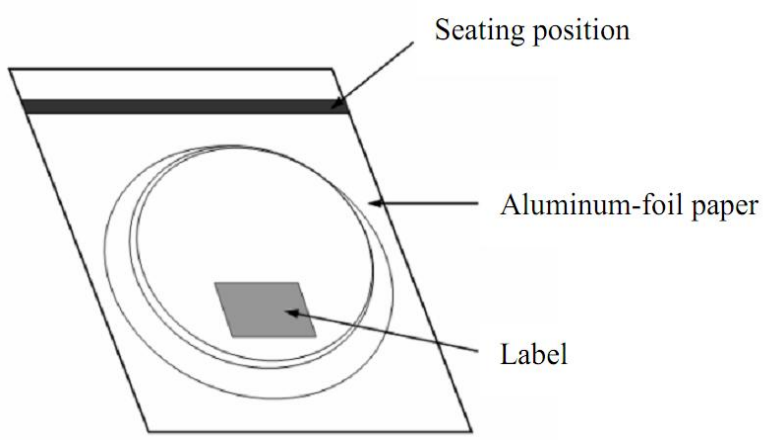
Damp-Proof Packing



Label Explanation

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Reliability

(1)Tests and Results

Test	Reference Standard	Test Conditions	Test Duration	Failure Criteria#	Units Failed/Tested
Resistance to Soldering Heat(Reflow Soldering)	JEITAED=4701 300 301	T_{sld}=260℃, 10sec,2reflows,Precondition :30℃,70%RH,4weeks.		#1	0/22
Solderability(Reflow Soldering)	JEITA ED=4701 303 303A	T_{sld}=245±5℃,5sec,Lead-free Solder(Sn-3.0Ag-0.5Cu)		#2	0/22
Temperature Cycle	JEITA ED=4701 100 105	-40℃(30min)~25℃ (5min)~100℃(30min)~25℃ (5min)	100cycles	#1	0/22
Moisture Resistance(Cyclic)	JEITA ED=4701 200 203	25℃~65℃~-10℃, 90%RH, 24hr per cycle	10cycles	#1	0/22
High Temperature Storage	JEITA ED=4701 200 201	T_A=100℃	1000 cycles	#1	0/22
Temperature Humidity Storage	JEITA ED=4701 100	T_A=60℃, RH=90%	1000cycles	#1	0/22
Low Temperature Storage	JEITA ED=4701 200 202	T_A=-40℃	1000 cycles	#1	0/22
Room Temperature Operating Life		T_A=25℃, I_F=1200mA Test board:See NOTES below	1000 cycles	#1	0/22
High Temperature Operating Life		T_A=100℃, I_F=1200mA Test board: See NOTES below	1000 cycles	#1	0/22
Temperature Humidity Operating Life		60℃, RH=90%, I_F=1200mA Test board: See NOTES below	500cycles	#1	0/22
Low Temperature Operating Life		T_A=-40℃, I_F=1200mA Test board: See NOTES below	1000 cycles	#1	0/22
Vibration	JEITA ED=4701 400 403	200m/s^2,100~20000~100Hz, 4cycles,4min,each X,Y,Z	48cycles	#1	0/22
Free Fall		3drops from a height of		#1	0/22

NOTES:

Test board:FR4 board thickness=1.6mm,copper layer thickness=35um,RθJA≈30℃/W

Measurement are perfromed after allowing the LEDs to return to room temperature.

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（2）Failure Criteria

Criteria #	Items	Conditions	Failure Criteria
#1	Forward Voltage (V_F)	I_F=700mA	> Initial value×1.1
	Luminous Flux (Φ_v)	I_F=700mA	> Initial value×0.7
	Reverse Current (I_R)	V_R=5V	> Initial value×2.0
#2	Solderability	-	Less than 95% solder

Cautions

➢ Storage

Conditions		Temperature	Humidity	Time
Storage	Before Opening Aluminum Bag	≦30℃	≦90%RH	With in 1 Year for
	After Opening Aluminum Bag	≦30℃	≦70%RH	≦4weeks

- Do not place the chips in damp places, Storage temperature between -40 ℃and 100 ℃, Relative humidity under 85%.
- Don't touch any unknown liquid, In particular, acetone.
- Prevent electrostatic killed, Manual operation is required to wear rubber gloves and wear electrostatic ring.

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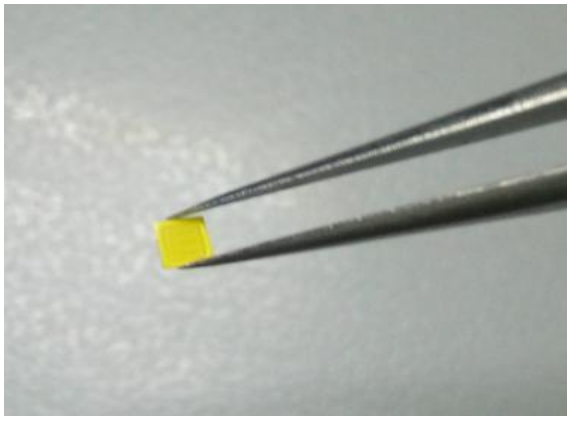
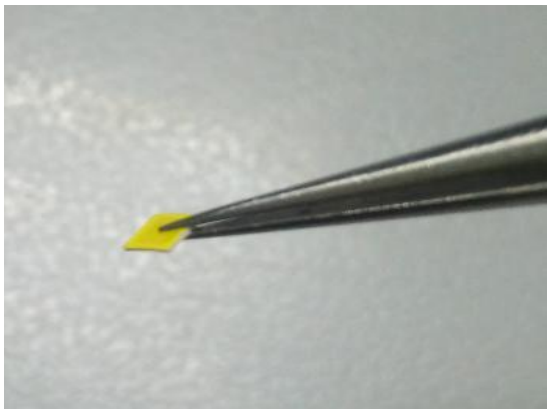
- Prevent all mechanical force, Using tweezers clip to clip side gently, not picking up electrode surface and fluorescent surface.





- In the process of welding, don't put any external pressure on the chips, otherwise the LED internal cracks may appear, this will cause quality problems.

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