DATA SHEET

PART NO.: L-T3014NWDT-U1

REV: A / 0

CUSTOMER'S APPROVAL : _____ DCC : _____

1.Electro Optical Characteristics(Ta = 25℃)

Color Temperature（K）	Current(mA)	Color rendering Min	Luminous Flux Min	Typical
2700	60	80	20	22
3000	60	80	22	24
4000	60	80	24	26
5000	60	80	24	26
5700	60	80	24	26
6500	60	80	24	26

2.Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	300	mW
Forward Current	I_F	100	mA
Peak Forward Current	I_{FP}	150	mA
Junction Temperature	Tj	≦115	℃
Thermal Resistance	Rth	35	℃/W
Soldering Temperature	Tsol	Reflow soldering (260 for 10seconds) Hand soldering (300 for 3 seconds)	℃
Operating Temperature	Topr	-40℃~+85℃	-
Storage Temperature	Tstg	-40℃~+100℃	-

＊ I_{FP} condition: pulse width ≤0.1msec, duty cycle ≤1/10.

3.Electrical-optical characteristics(Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	Vf	-	3.0	-	V	IF=60mA
Luminous Flux	Φ	-	26	-	Lm	
Color Rendering Index	Ra	80	-	-	-	
Viewing Angle	$2\theta_{1/2}$	-	120	-	deg	
Saturated Red	R9	0	-	-	-	
Reverse Current	IR	-	-	0.5	μA	VR=5V

4.Corresponding to the different current Flux

IF(mA)	Flux(lm)	lm/W	TC(K)	VF(V)
90	38.2	133.5	4030	3.18
80	34.5	138.2	4034	3.12
70	30.7	142.9	4036	3.07
60	26.5	146.0	4045	3.03
50	22.7	152.8	4063	2.98
40	18.1	154.9	4072	2.93
30	13.6	158.3	4095	2.87

Notes:

❶ Luminous flux measurement tolerance: ±7%.

❷ The data of luminous flux measured under the MCPCB at 25℃.

❸ Typical luminous flux or light t performance is operated within the condition guided by this datasheet.

❹ The CRI value is based on the Jufei testing instrument.

❺ CRI measurement tolerance: ±1.

5. Product Binning

a).Luminous flux (If=60mA,tolerance is ±5%)

BIN code	Min (lm)	Max (lm)
20	20	22
22	22	24
24	24	26
26	26	28
28	28	30

b).Forward voltage (IF=60mA,tolerance is ±0.03V)

BIN Code	Min (V)	Max (V)
5-2	2.8	2.9
6-1	2.9	3.0
6-2	3.0	3.1
7-1	3.1	3.2
7-2	3.2	3.3

c).Chromaticity coordinates specifications(If=60mA,tolerance is ±0.005)

Warm White

TC(K)	Tolerance(K)	CIE-X	CIE-Y	BIN
2700	2700±150K	0.4785	0.4299	W27
		0.4545	0.4241	
		0.4397	0.3929	
		0.4594	0.3977	
3000	3000±150K	0.4538	0.4219	W30
		0.4302	0.4129	
		0.4174	0.3837	
		0.4390	0.3915	
3500	3500±200K	0.4254	0.4115	W35
		0.4012	0.3996	
		0.3918	0.3718	
		0.4129	0.3819	

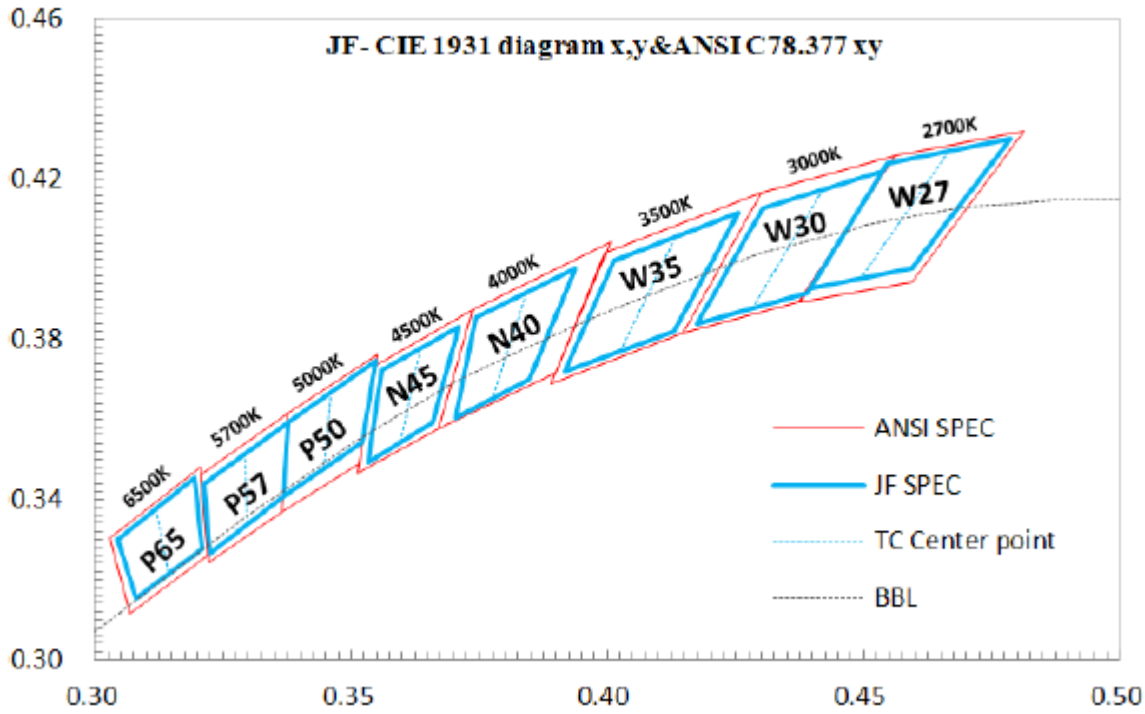
Natural white

TC(K)	Tolerance（K）	CIE-X	CIE-Y	BIN
4000	4000±200K	0.3938	0.3977	N40
		0.3744	0.3854	
		0.3702	0.3605	
		0.3848	0.3699	
4500	4500±200K	0.3709	0.3832	N45
		0.3561	0.3722	
		0.3532	0.3494	
		0.3658	0.3591	

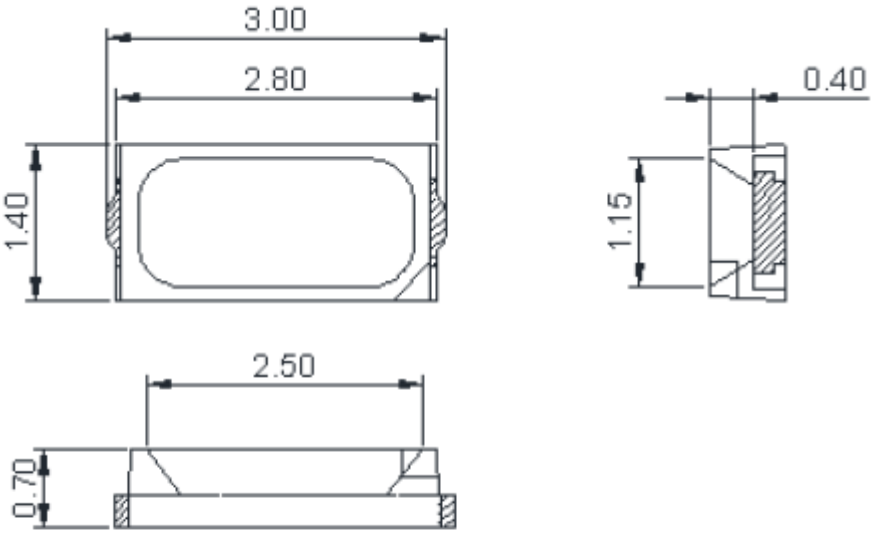
Pure White

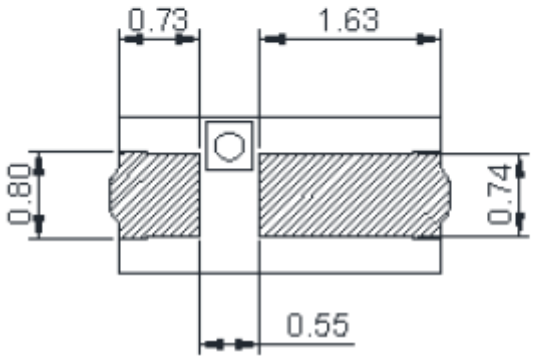
TC(K)	Tolerance(K)	CIE-X	CIE-Y	BIN
5000	5000±250K	0.3549	0.3747	P50
		0.3376	0.3594	
		0.3368	0.3406	
		0.3522	0.3542	
5700	5700±300K	0.3376	0.3594	P57
		0.3213	0.3438	
		0.3225	0.3263	
		0.3368	0.3406	
6500	6500±300K	0.3193	0.3455	P65
		0.3046	0.3299	
		0.3081	0.3153	
		0.3208	0.3275	

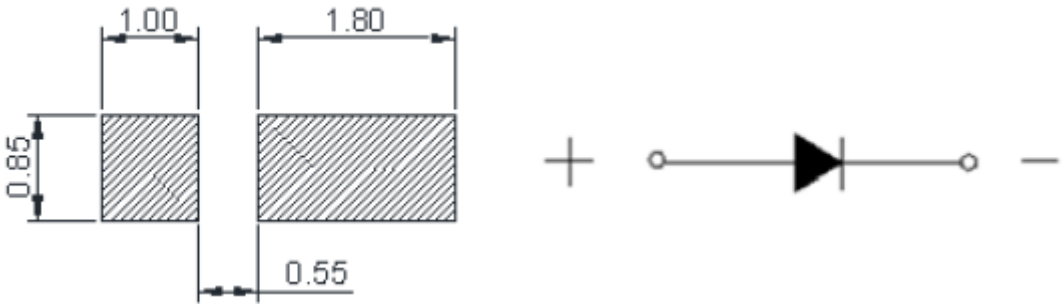
diagram:



6.Package Outline Dimension







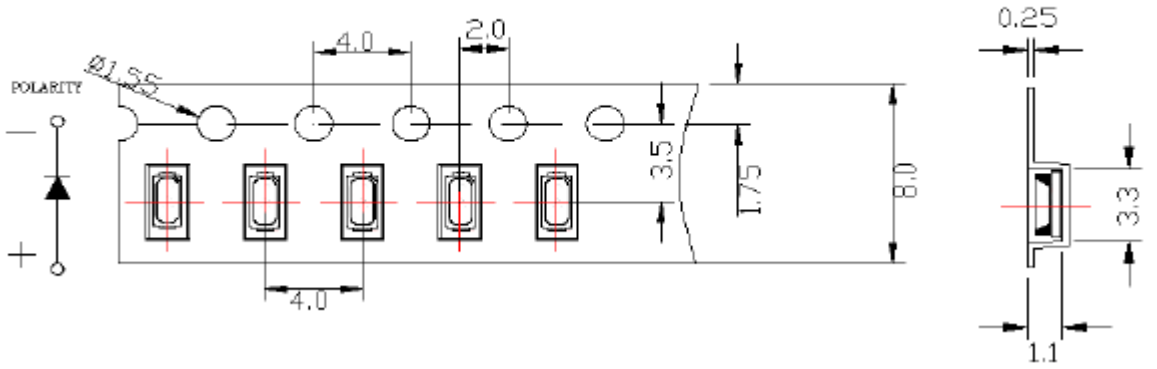
recommended bonding pad design

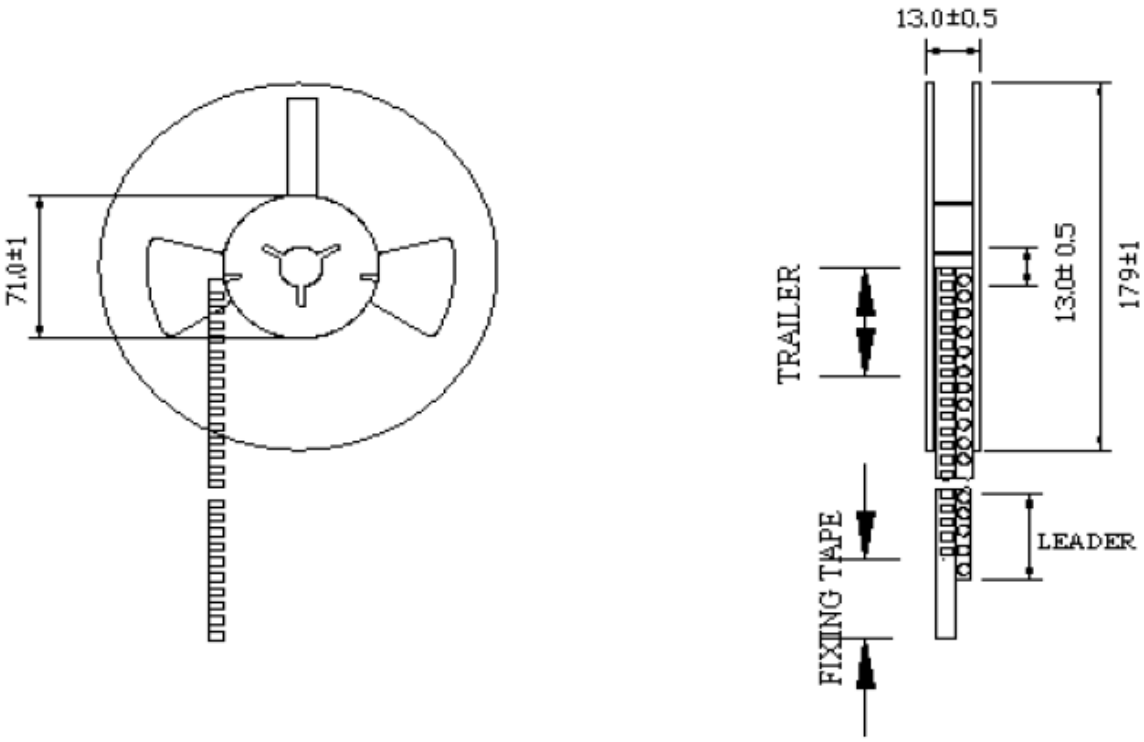
Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.10mm unless otherwise specified.
3. Gewicht/Approx.weight:9.0±0.5mg.

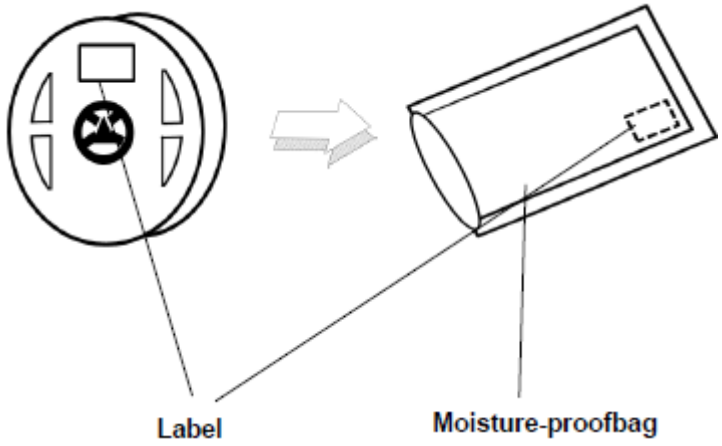
7.Tapping specifications (unit: mm)

Loaded quantity: 4000 pcs/reel

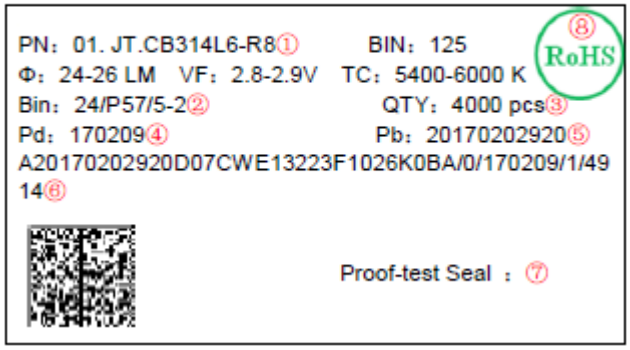




8.Package Method:(unit: mm)



9.Label description :



a） Label description

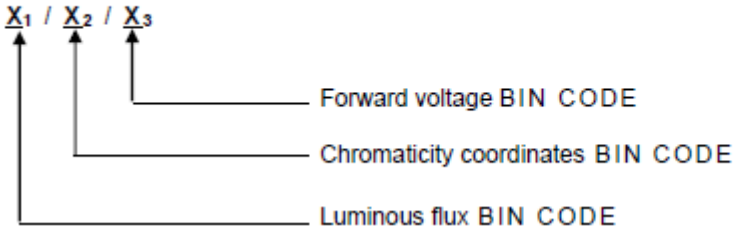
①Product Type
②Product Bin
③Quantity
④Produce Date
⑤Produce Batch
⑥Product Tracing Num
⑦Proof-test Seal
⑧RoHS Sign

b） Part Number System description

$X_1X_2.X_3X_4.X_5X_6X_7X_8X_9X_{10}X_{11}X_{12}X_{13}X_{14}X_{15}$

Part Number Code	Description	Part Number	Value
X_1X_2	Production Type	01	
X_3	Company	J	JF
X_4	Package form	T	Top
X_5	Chip Type	C	
X_6	Power Range	B	
X_7-X_{10}	Product Size	314	3.0*1.4mm
X_{11}	Applications	L	lighting
$X_{12}X_{13}$	Current	6	60mA
X_{14}	Color Rendering	R8	CRI 80+

c) BIN description



10.Typical Electro-Optical Characteristics Curves

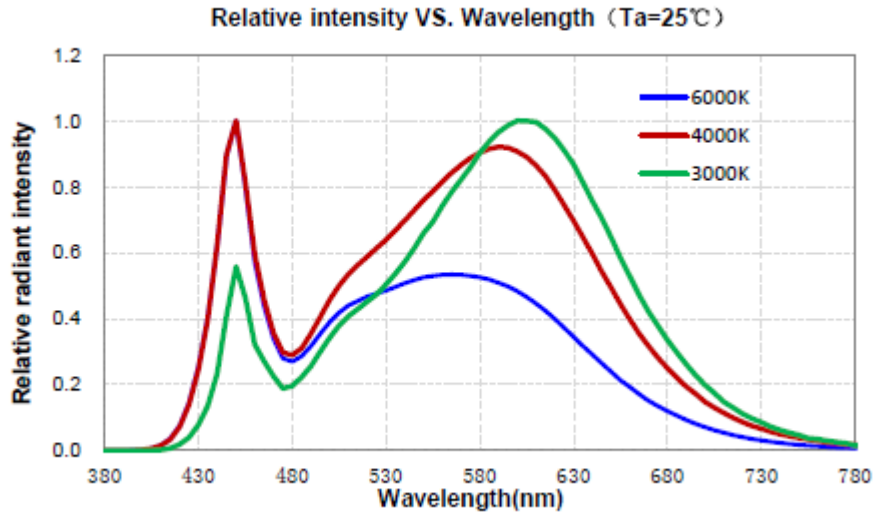


Fig 10.1

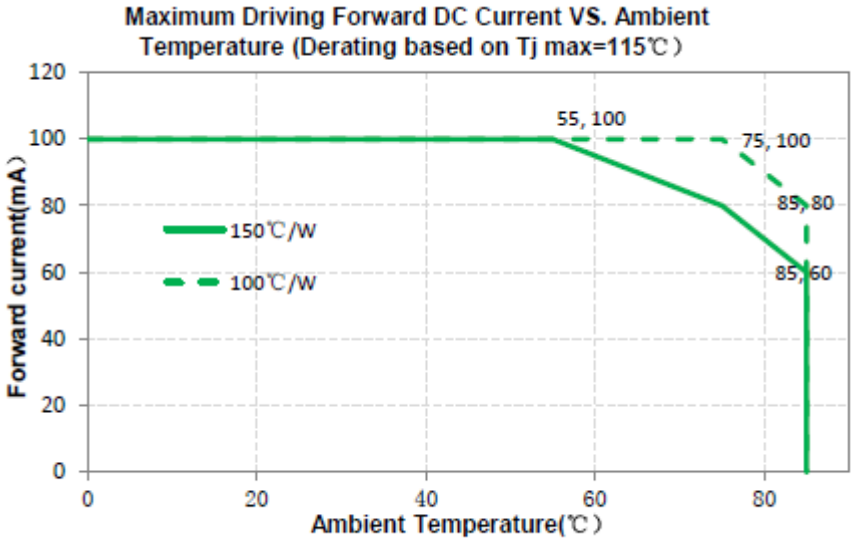


Fig 10.2

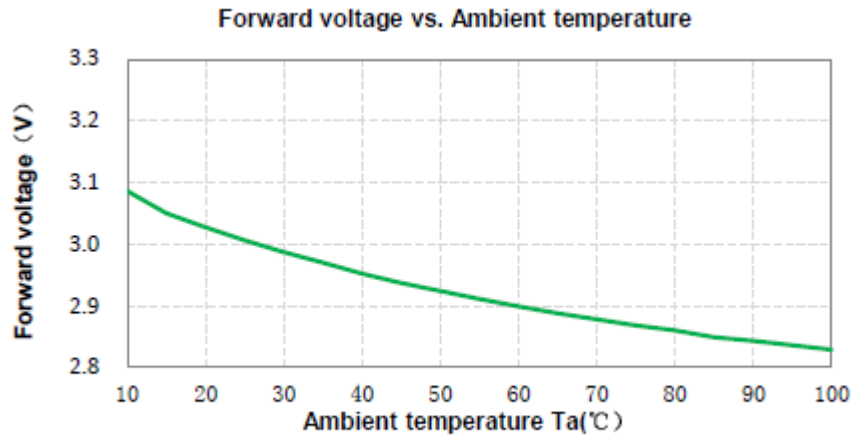


Fig 10.3

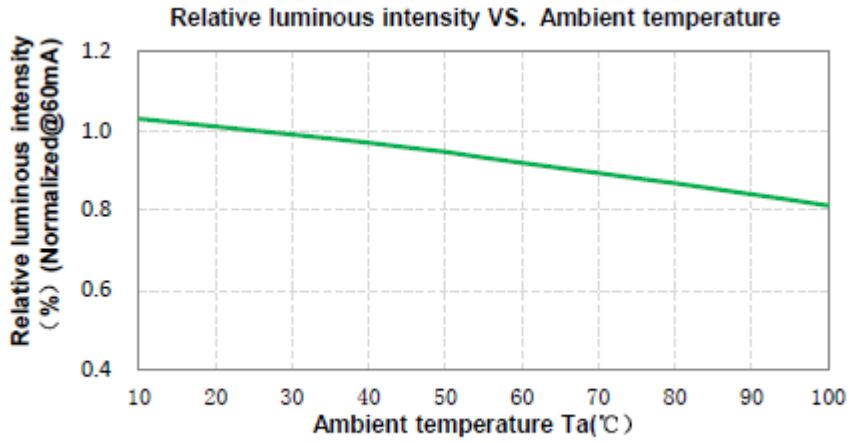


Fig 10.4

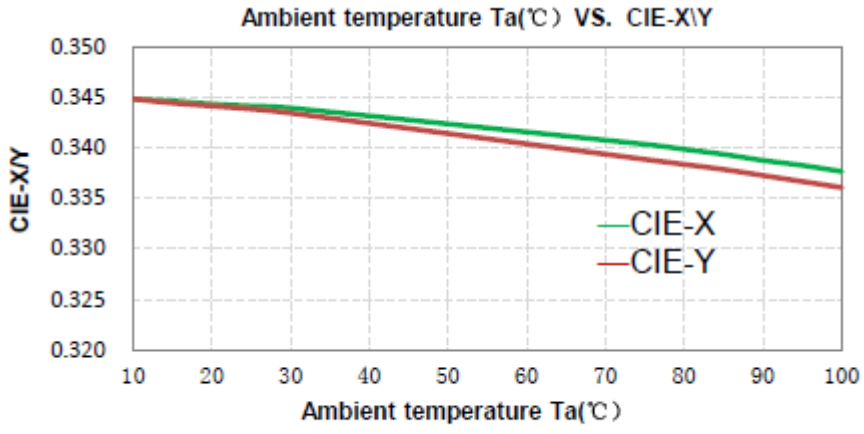


Fig 10.5

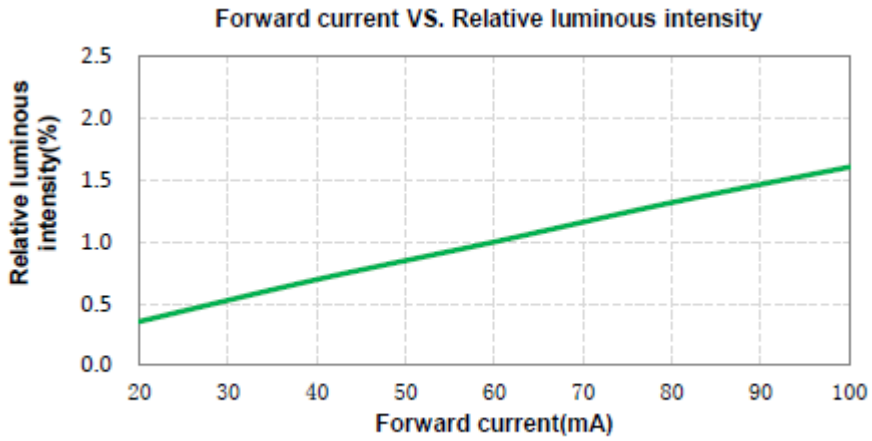


Fig 10.6

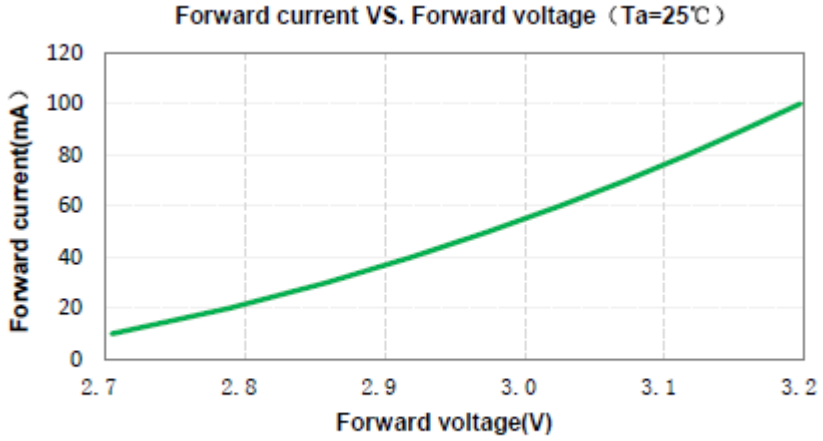


Fig 10.7

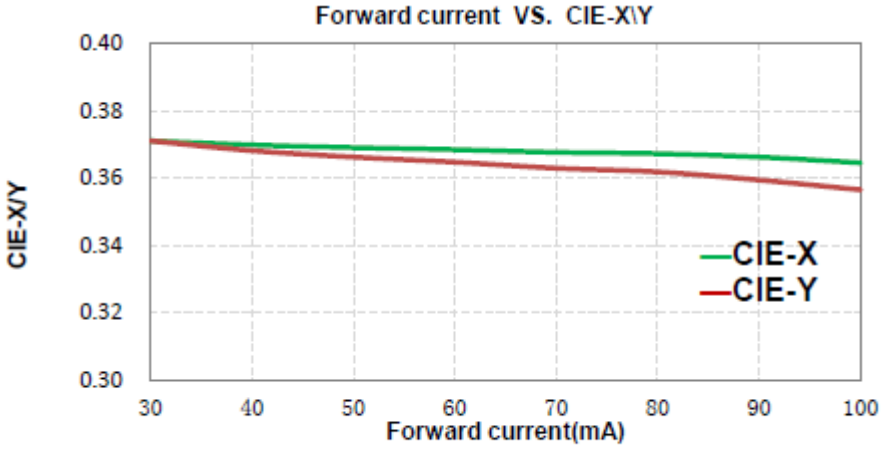


Fig 10.8

Typical radiation pattern in Polar coordinate system

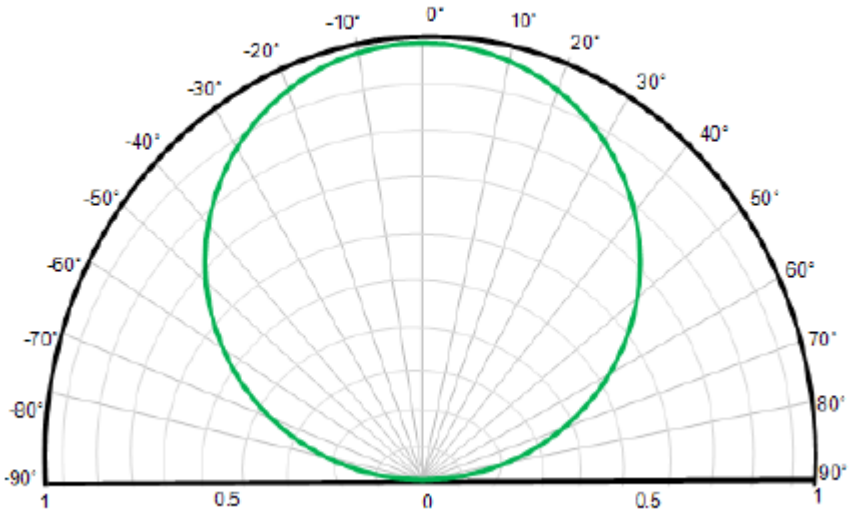


Fig 10.9

11.Reliability test items and conditions:

No.	Test Item	Applicable Standard	Test Conditions	Sample size	Ac/Re
1	Operation Life	JESD22 A108-C	Test If=DC60mA Temp:Room temperature Test time=1000hrs	22	0/1
2	High Temperature High Humidity	JEITAED-4701 100 103	Temp. =+65℃ RH=90% Test time=240hrs	22	0/1
3	Thermal Shock	MIL-STD-202G	-40℃～+100℃ 20min 10s 20min Test Time=100 cycles	22	0/1
4	High Temperature Storage	JEITAED-4701 200 201	High Temp. =+100℃ Test time=1000hrs	22	0/1
5	Low Temperature Storage	JEITAED-4701 200 202	Low Ta=-40℃ Test time=1000hrs	22	0/1
6	Temperature Cycle	JEITAED-4701 100 105	-40℃～+100℃ 60min 20min 60min Test Time=20cycles	22	0/1
7	Reflow Soldering	JEITAED-4701 300 301	Operation heating：260℃(Max.),within 10seconds.(Max.)	22	0/1

※Judgment criteria of failure for the reliability

·Flux: Below 70% of initial values

·Vf: Over 20% of upper limit value

Note:

❶ Measurement shall be taken within 2 hours

❷ The tested LED have been returned to normal ambient conditions before testing.

12.Precautions for use

12.1 Soldering

SMD LED encapsulation is very flexible, outside force easily demolish radiant surface and plastic, As soldering , Please handle with care!

a. With No-clean Flux, according to reflow soldering cure condition when soldering, Reflow soldering should not be done more than two times, simultaneity you must insure clean on the radiant surface. Otherwise, foreign objects can affect radiant color.

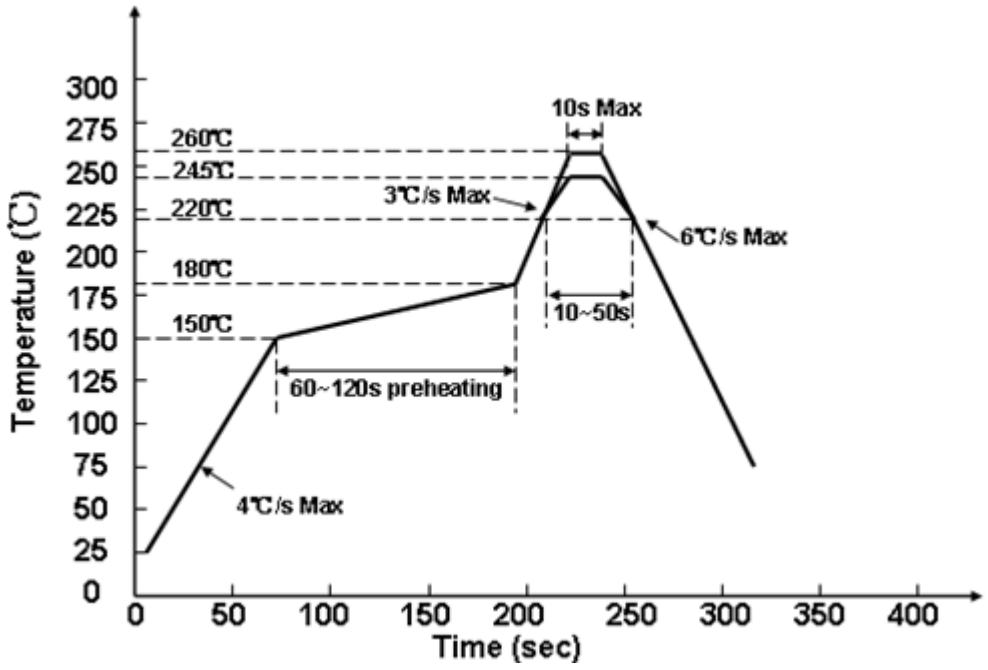
b. Don't process manual soldering except repair. Recommended to be soldered with 25W Anti-static iron, The temp. of the iron should be lower than 300℃ and soldering time should not be done more than three seconds, at the same time iron can't touch radiant surface and plastic.

c. Don't twist LED in course of manual soldering and experiment, Otherwise, the lights will not work possibly.

d. Please use the same BIN grade in one panel, and don't mix the difference BIN grade in one panel when soldering. Otherwise, it will cause a serious uneven color problem.

e. Please control the sulfur content of solder paste and PCB.

f. Pb-free solder temp.-time profile as below:260℃Max.



Profile Feature	Lead Free Assembly
Temperature min（T_{smin}）	150℃
Temperature max(T_{smax})	200℃
Maximum time (t_s)from Tsmin to T_{smax}	120 seconds
Ramp-up(T_L to T_P)	3℃/sec
Liquids Temperature(T_L)	217℃
Maximum Time(t_L) Maintained T_L	150 seconds
Maximum Peak Package Body Temperature(T_p)	260℃
Time Within 5℃ of the Specified Temperature	10-30seconds
Maximum Ramp-Down Rate(T_p to T_L)	6℃/seconds
Maximum Time 25℃ to Peak Temperature	8minutes

12.2 Cleaning

a. Don't be cleaned with ultrasonic. Recommended to be wiped with isopropyl alcohol or pure alcohol, wiping time should not be more than one minute. LED must be placed at room temperature for fifteen minutes before producing .you must insure clean on the radiant surface. Otherwise, foreign objects can affect radiant color.

b. LED can't be in contact with acetate、trichloroethylene，acetone、sulfur、nitride、acid、alkali、salt. These matters can destroy LED.

12.3 Sealing

a. Sealing glue can't contain sulfur，because these matter can affect fluorescence powder poisoning.

b. When using normal sealing glue, recommended will be operated life for 168hrs under normal temperature.

12.4 Storage

a. Don't open the moisture proof bag before ready to use the LEDs.

b. The LEDs should be kept at 30℃ or less and 60%RH or less before opening the package. The max. period before opening the package is half a year.

c. After opening the package, the LEDs should be kept at 30-35%RH or less, and it should be used within 3 days. If the LEDs should be kept at 30-35%RH or more, and it should be used within 4 hours.

d. If the LEDs be kept over the conditions of 20%, baking is required before mounting. Baking condition as below: 70±5℃ for 12 hours for bulk goods, 105±5℃ for 1 hours for roll goods.

e. The environment have no acid、alkali、corrosive gas、intensively shake and high magnetic field.

12.5 Static

a. Static and Peak surge voltage can destroy LED, Avoiding Instantaneous voltage when turn on or turn off the lights.

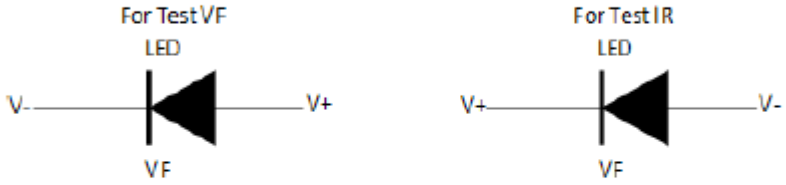
b. Please wear Anti-static wrist band、Anti-static glove、Anti-static shoes in the course of operation, and the equipment must be grounded.

c. After LED is be destroyed, leakage current increase obviously, and it will be forward voltage falling or failure lamp in the case of low current.

12.6 Test

a. Customer must apply the current limiting resistor in the circuit so as to drive the LEDs within the rated current. Otherwise slight voltage shift maybe will cause big current change and burn out will happen.

b. Also, caution should be taken not to overload the LEDs with instantaneous high voltage at the turning ON and OFF of the circuit. Otherwise LED will be destroyed, testing methods as follows:



IF=60mA
Normal VF= 2.8-3.3V

VR=5V
Normal IR≤ 0.5uA

c. The reverse voltage mustn't exceed 5v when lighting on or testing the LED, otherwise, LEDs will be damaged.

12.7 Else

Radiant color of LEDs will be a little change with the current, recommended that LED is be used in series and resistance, when lighting, please don't see directly radiant surface of LED, otherwise LED will burn eyes.