Customer Part No:

Brightek Part No: 1ZKW37EWJIBZNP

1ZKW57EWJIBZNK

1ZKW57EWJIBZNE

Specification:

Documents No:

Prepared By: Alex Hsieh

Checked By:

Time: 2010/12/21

Customer Confirmation:

SPECIFICATION APPROVAL

Features

- § Forward current 350mA
- § Wide viewing angle:120°
- § Operating Temperature -30~80℃
- § Storage temperature-40~100℃
- § ROHS and REACH-compliant
- § outline(LxWxH) of 14.5*8.0*5mm
- § Qualified according to JEDEC moisturevity Level 2
- § PACKAGE: 2000 PCS/box.
- § Reverse Voltage:5V

Catalog

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Part Number Matrix

Color	Emitter
Cool white	1ZKW37EWJIBZNP
Natural white	1ZKW57EWJIBZNK
Warm white	1ZKW57EWJIBZNE

◆Cool--white

Parameter	Symbol	Value			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	V_f	---	3.6	4.2	V	I_f=350mA
Reverse Current	I_r	---	---	10	μA	V_r=5V
Viewing angle	$2\theta_{1/2}$	---	120	---	Deg	I_f=350mA
Chromaticity coordinate	X	---	0.3287	---	---	I_f=350mA
	Y	---	0.3417	---	---	
Color Temperature	CCT	---	5700	---	K	I_f=350mA
Luminous Flux	Φv	---	95	---	Lm	I_f=350mA

1. Luminous intensity (Iv) ±10%, Forward Voltage (VF) ±0.1V
2. IS standard testing CRI >70

◆Natural --white

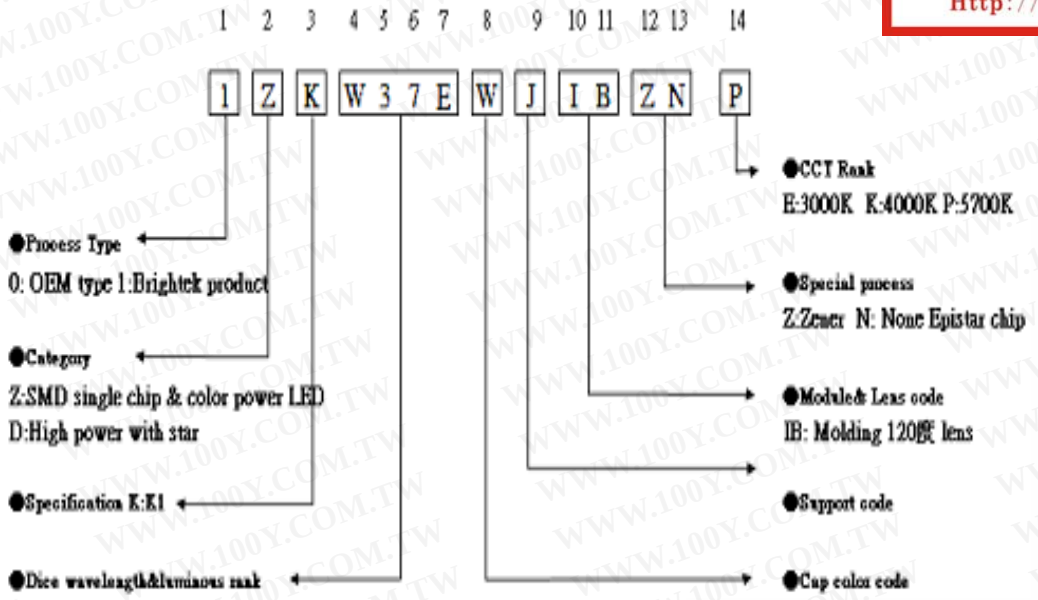
Parameter	Symbol	Value			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	V_f	---	3.6	4.2	V	I_f=350mA
Reverse Current	I_r	---	---	10	μA	V_r=5V
Viewing angle	$2\theta_{1/2}$	---	120	---	Deg	I_f=350mA
Chromaticity coordinate	X	---	0.3818	---	---	I_f=350mA
	Y	---	0.3797	---	---	
Color Temperature	CCT	---	4000	---	K	I_f=350mA
Luminous Flux	Φv	---	80	---	Lm	I_f=350mA

1. Luminous intensity (Iv) ±10%, Forward Voltage (VF) ±0.1V
2. IS standard testing CRI >70

Parameter	Symbol	Value			Unit	Test condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	---	3.6	4.2	V	I_F=350mA
Reverse Current	I_R	---	---	10	μA	V_R=5V
Viewing angle	$2\theta_{1/2}$	---	120	---	Deg	I_F=350mA
Chromaticity coordinate	X	---	0.4338	---	---	I_F=350mA
	Y	---	0.4030	---	---	
Color Temperature	CCT	---	3000	---	K	I_F=350mA
Luminous Flux	Φv	---	65	---	Lm	I_F=350mA

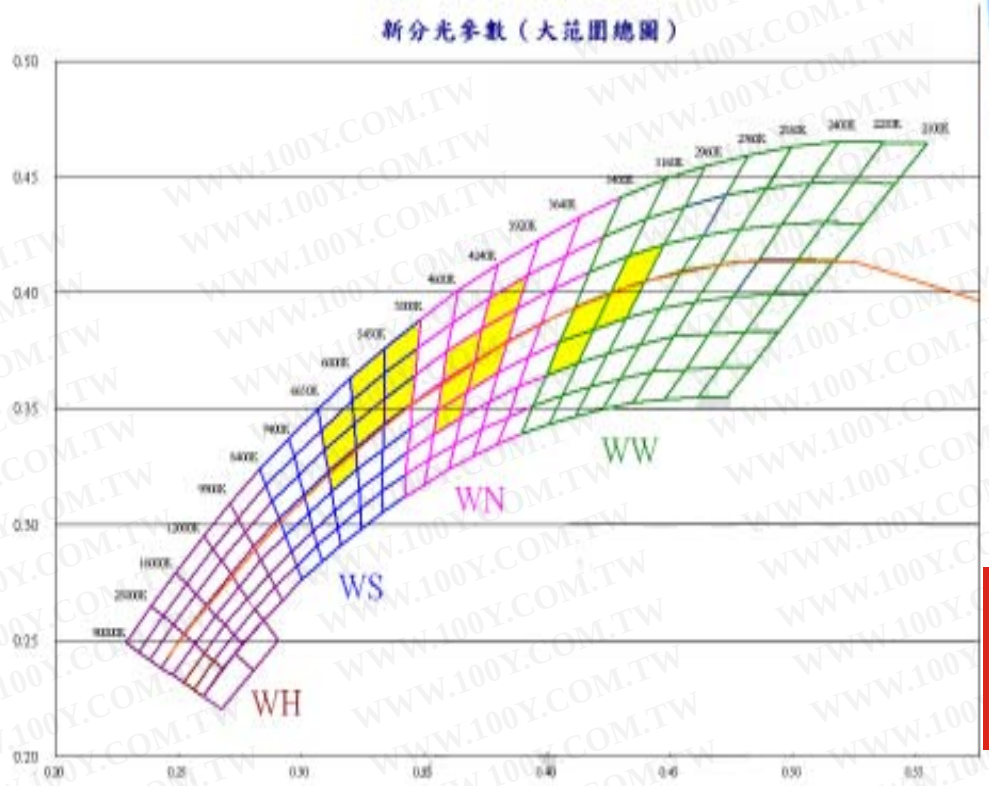
1. Luminous intensity (Iv) ±10%, Forward Voltage (VF) ±0.1V
2. IS standard testing CRI >80

High Power Product Identification Code



Range of bins

Bin	A	B	C	D	E	F	G	H
VF(v)	2.0-2.25	2.25-2.5	2.5-2.75	2.75-3.0	3.0-3.25	3.25-3.5	3.5-3.75	3.75-4.0
Bin	I	J	K	L				
VF(v)	4.0-4.25	4.25-4.5	4.5-4.75	4.75-5.0				
Bin	25	26	27	28	29	30	31	32
Flux(lm)	50-55	55-60	60-65	65-70	70-75	75-80	80-90	90-100
Bin	33	34	35	36				
Flux(lm)	100-110	110-120	120-130	130-140				



>5000K色溫

CCT	21000-90000K	18000-25000K	12000-18000K	9900-12000K	8400-9900K	7400-8400K	6650-7400K	6000-6650K	5450-6000K	5000-5450K
BIN	HY7	HX7	HW7	HV7	HU7	ET7	ER7	EQ7	EP7	EN7
	HY6	HX6	HW6	HV6	HU6	ET6	ER6	EQ6	EP6	EN6
	HY5	HX5	HW5	HV5	HU5	ET5	ER5	EQ5	EP5	EN5
	HY4	HX4	HW4	HV4	HU4	ET4	ER4	EQ4	EP4	EN4
	HY3	HX3	HW3	HV3	HU3	ET3	ER3	EQ3	EP3	EN3
	HY2	HX2	HW2	HV2	HU2	ET2	ER2	EQ2	EP2	EN2
	HY1	HX1	HW1	HV1	HU1	ET1	ER1	EQ1	EP1	EN1

<5000K色溫

CCT	4600-5000K	4240-4600K	3920-4240K	3640-3920K	3400-3640K	3160-3400K	2960-3160K	2760-2960K	2580-2760K	2400-2580K	2230-2400K	2100-2230K
BIN	NM7	NL7	NK7	NJ7	NH7	WP7	WR7	WD7	WB7	WA7	WY7	YY7
	NM6	NL6	NK6	NJ6	NH6	WP6	WR6	WD6	WB6	WA6	WY6	YY6
	NM5	NL5	NK5	NJ5	NH5	WP5	WR5	WD5	WB5	WA5	WY5	YY5
	NM4	NL4	NK4	NJ4	NH4	WP4	WR4	WD4	WB4	WA4	WY4	YY4
	NM3	NL3	NK3	NJ3	NH3	WP3	WR3	WD3	WB3	WA3	WY3	YY3
	NM2	NL2	NK2	NJ2	NH2	WP2	WR2	WD2	WB2	WA2	WY2	YY2
	NM1	NL1	NK1	NJ1	NH1	WP1	WR1	WD1	WB1	WA1	WY1	YY1

IS Main BIN.

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Figure 1.Relative Radiant Power
VS Wavelength @Ta=25℃

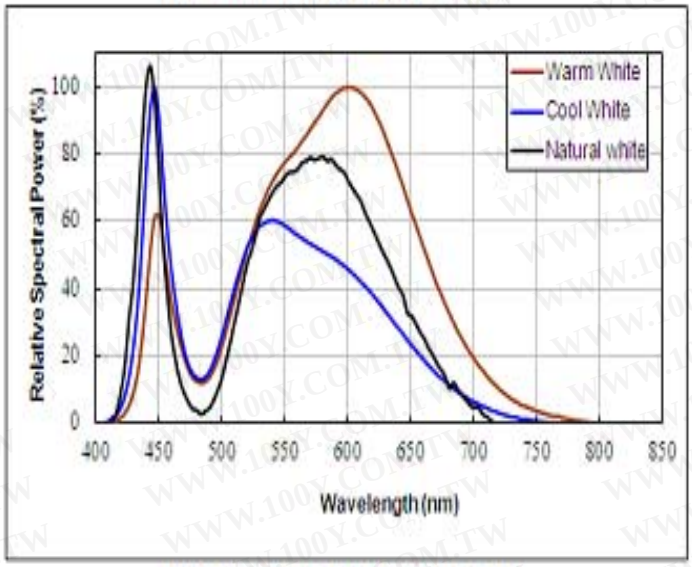


Figure 2. Forward Current
VS Forward Voltage

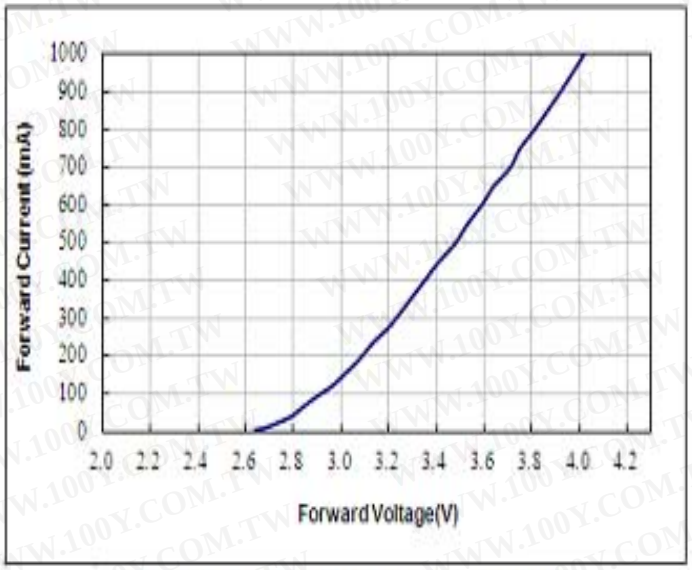


Figure 3. Relative Luminous Flux
VS Forward Current @Ta=25℃

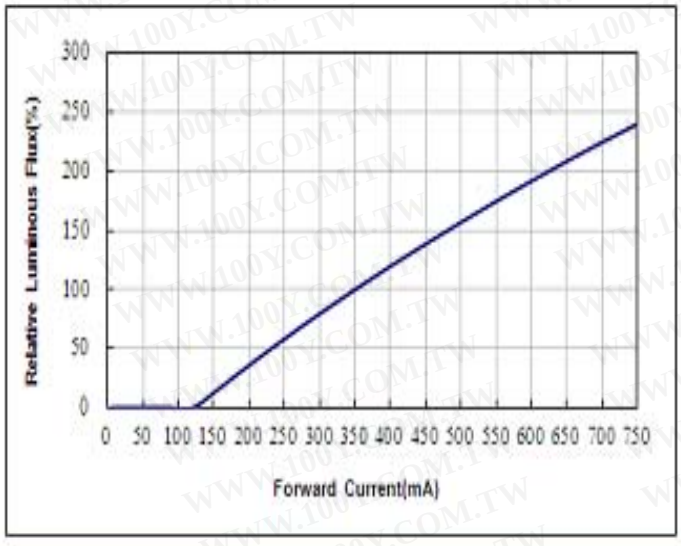


Figure 4. Relative Light Output VS Junction Temperature

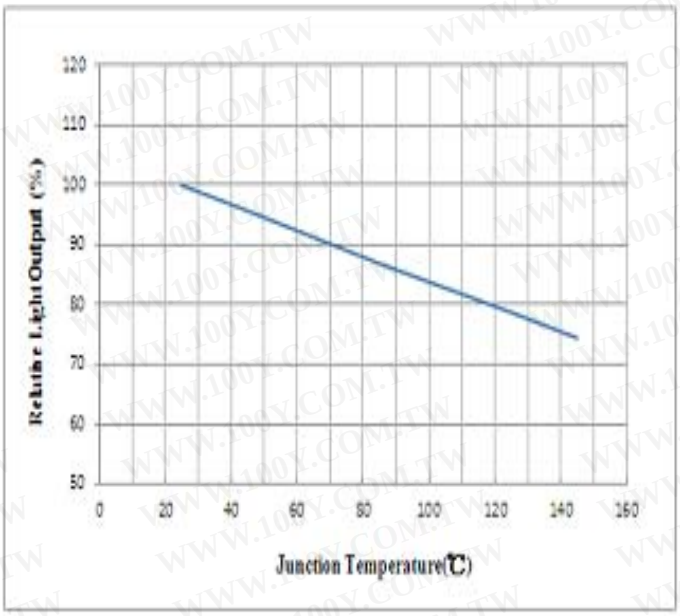


Figure 5. Forward Current VS Ambient Temperature @Tj=125℃

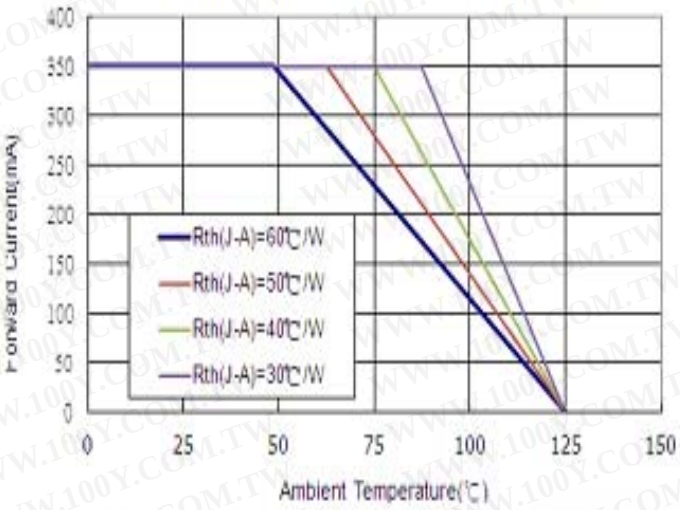
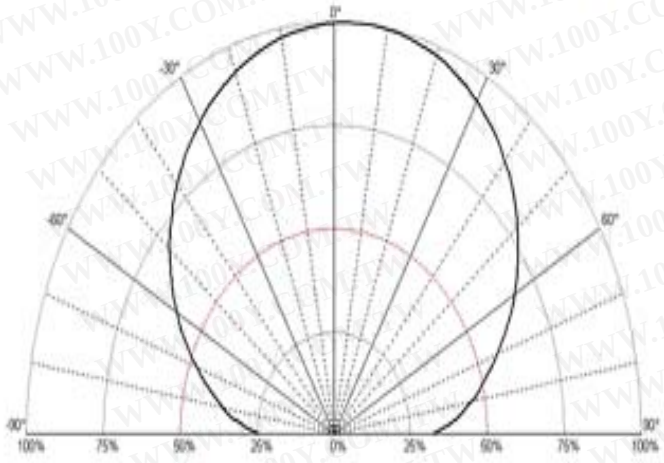


Figure 6. White Color Radiation Angle



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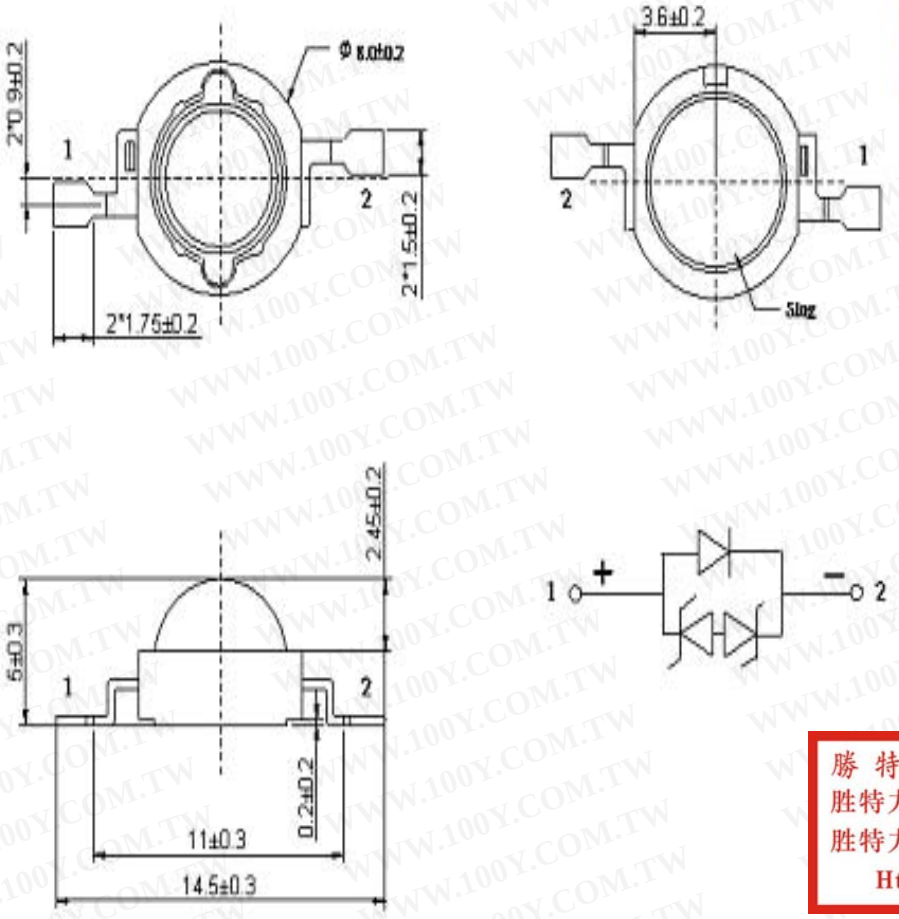
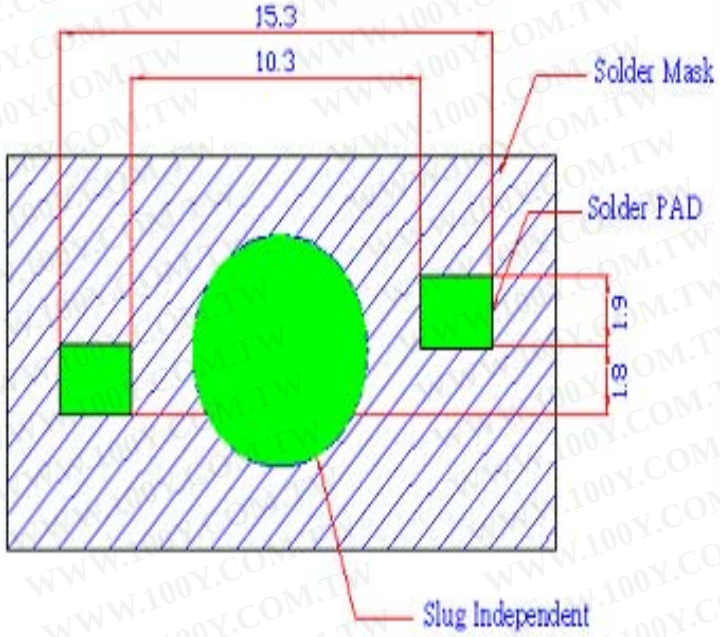


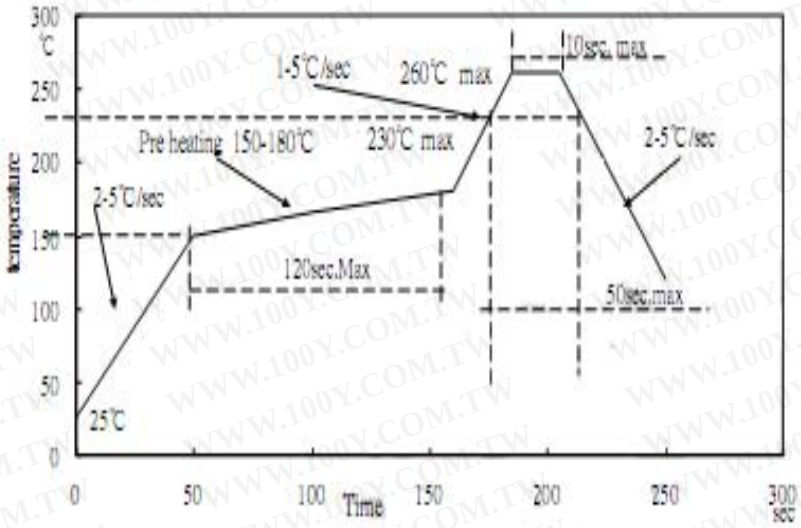
Recommend Pad Layout



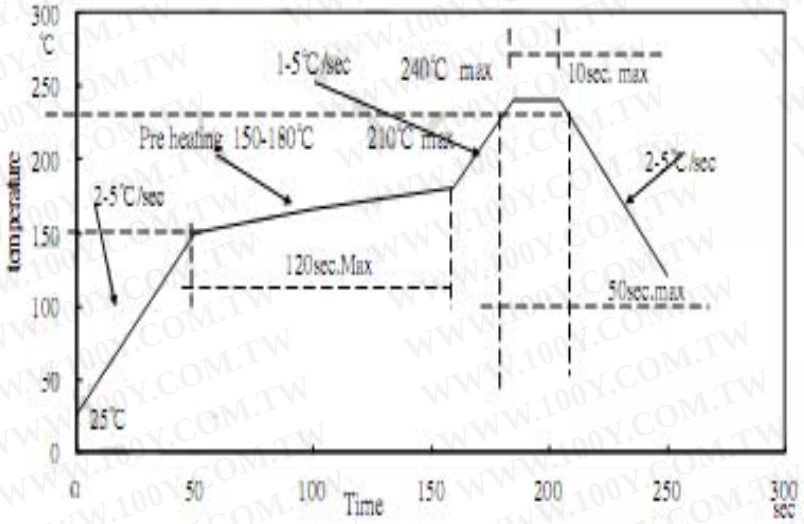
- All dimensions are in millimeters.(inch)
- Tolerance is ±0.1(0.04)㎜ unless other specified
- Specifications are subject to change without notice.

■ Reflow Temp/Time

IR reflow soldering Profile
Lead Free solder



IR reflow soldering Profile
Lead solder



NOTES:

1. We recommend the reflow temperature 240℃(±5℃).the maximum soldering temperature should be limited to 260℃.
2. Don't cause stress to the silicone resin while it is exposed to high temperature.
3. Number of reflow process shall be 1 time.

Test Item	Test Conditions	Duration/ Cycle	Number of Damage	Reference
Temperature Cycle	-40℃ 30min ↑↓25℃(5 min) 100℃ 30min	100 cycle	0/22	JEITA ED-4701 300 303
Thermal Shock	-40℃ 30min ↑↓5sec 110℃ 30min	100 cycle	0/22	JEITA ED-4701 200 303
High Temperature Storage	T_a=85℃	1000 hrs	0/22	EIAJED-4701 200 201
Humidity Heat Storage	T_a=85℃ RH=85%	1000 hrs	0/22	EIAJED-4701 100 103
Low Temperature Storage	T_a=-40℃	1000 hrs	0/22	EIAJED-4701 200 202
Life Test	T_a=25℃ IF=350mA	1000 hrs	0/22	Tested with Brightek standard
High Humidity Heat Life Test	60℃ RH=90% IF=350mA	1000 hrs	0/22	Tested with Brightek standard
Low Temperature Life Test	T_a=-40℃ IF=350mA	1000 hrs	0/22	Tested with Brightek standard
ESD(HBM)	1KV at 1.5kΩ;100pf	3 Time	0/22	MIL-STD-883D

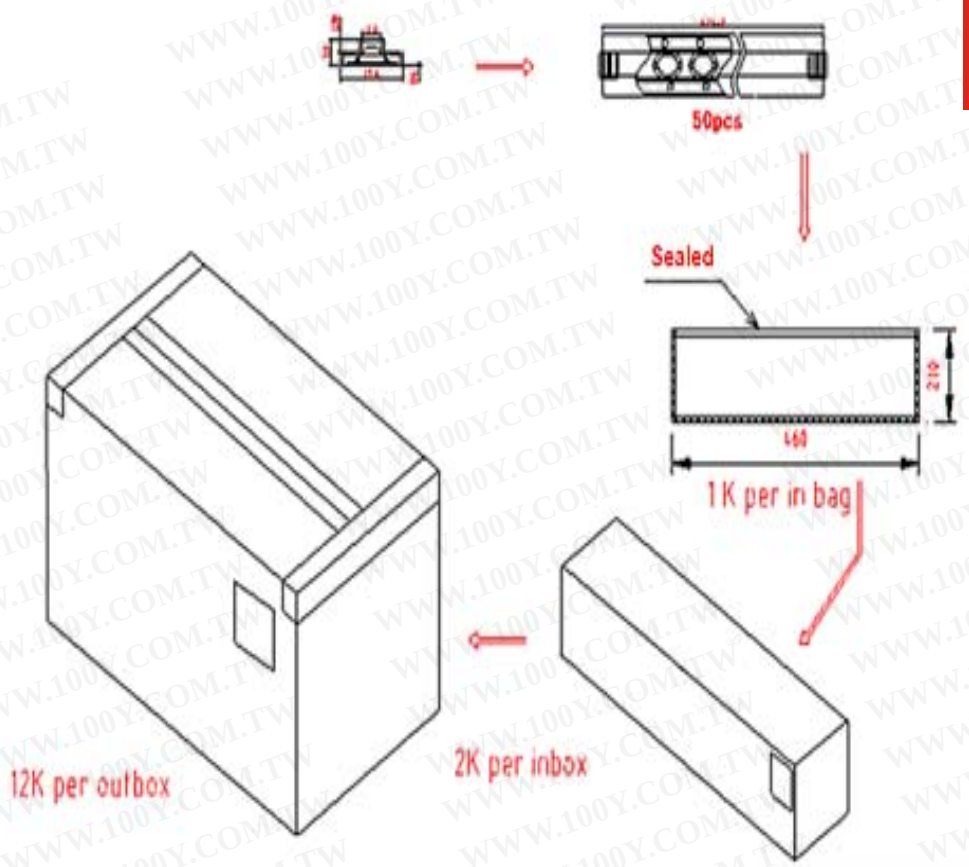
*Criteria for Judging the Damage

Item	Symbol	Condition	Criteria for Judgement	
			MIN	MAX
Forward Voltage	*VF*	*IF=350mA*	_	USL*1×1.1
Reverse Current	*IR*	VR=5V	_	100μA
Luminous Intensity	*Iv*	*IF=350mA*	LSL*2×0.7	_

[Note]*1USL: Upper Specification Level

*2 LSL: Lower Specification Level

Packaging specifications

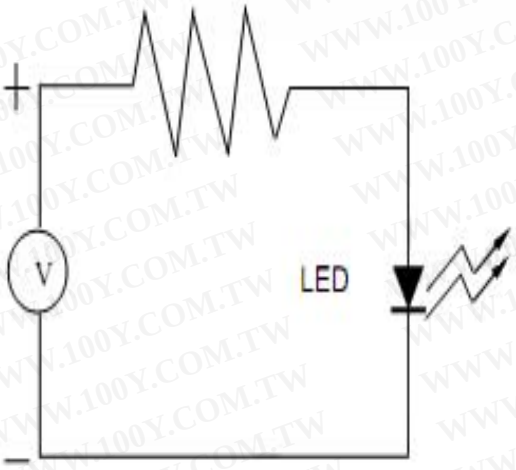


Notes:

Products are (the most quantity of products are 50pcs) packed in a tube along with a desiccant one by one, 40 tube of maximums (total maximum quantity of products are 2.000pcs) packed in an inside box (size: about 45mm x about 8mm x about 9mm) and six inside boxes of maximums are put in the outside box (size: about 47mm x about 27mm x about 21mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the tube, part No. And quantity should appear on the insertion request form on the cardboard box.) .

*Package available: Tube

■ Test circuit



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■ Handling precautions

1. Over-current-proof

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

2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5℃~30℃(41℉~86℉)

2.2 Shelf life in sealed bag: 12 month at ＜5℃~30℃ and ＜30% R.H. after the package is Opened, the products should be used within a week or they should be keeping to stored at ≦20 R.H. with zip-lock sealed.

3. Baking

It is recommended to baking before soldering when the pack is unsealed after 24hrs. The Conditions are as followings:

3.1 70±3℃ x 24hrs and ＜5%RH, taped reel type

3.2 100±3℃ x 2hrs , bulk type

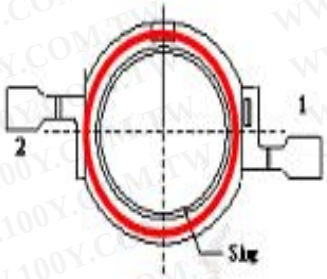
1、Abnormal situation caused by improper setting of collet

To choose the right collet is the key issue in improving the product's quality. LED is different from other electronic components, which is not only about electrical output but also for optical output. This characteristic made LED more fragile in the process of SMT. If the collet's lowering down height is not well set, it will bring damage to the gold wire at the time of collet's picking up and loading which will cause the LED fail to light up, light up now and then or other quality problems

2、How to choose the collet

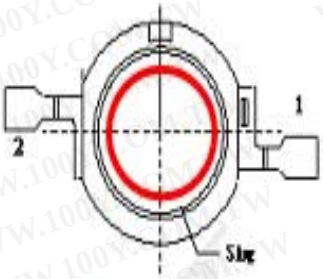
During SMT, please choose the collet that has larger outer diameter than the lighting area of lens, in case that improper position of collet will damage the gold wire inside the LED. Different collets fit for different products, please refer to the following pictures cross out:.

Outer diameter of collet should be larger than the lighting area



Picture 1 (√)

Outer diameter of collet



Picture 2(×)

3、How to set the height of collet

The reason why for top view SMD, the height of collet before it presses downward will directly affect the quality of products during SMT is that if the collect go down too much, it will press lens and cause the distortion or breaking of gold wire. The setting of collet position should follow the pictures belowed.

Picture 3 (√)

Picture 4 (×)

4、Other points for attention

A、No pressure should be exerted to the epoxy shell of the SMD under high temperature.

B、Do not scratch or wipe the lens since the lens and gold wire inside are rather fragile and cross out easy to break.

C、LED should be used as soon as possible when being taken out of the original package, and should be stored in anti-moisture and anti-ESD package.

D、This usage and handling instruction is only for your reference.