



深圳市源磊科技有限公司

Shenzhen Runlite Technology Co., Ltd

Approval Sheet

Product:	Warm White SMD LED
PartNO:	T57301-JV-WW2KA-00
Customer:	---
Issue Date:	2011-08-31

RUNLITE

MAKER		
Prepared	Checked	Approved
霍涪		
Version	A0	

Customer checked

◆ **Description:**

This surface-mount LED comes in standard package dimension. It has a substrate made up of a molded plastic reflector sitting on top of a bent lead frame. The die is attached within the reflector cavity and the cavity is encapsulated by silicone.

The package design coupled with careful selection of component materials allow these products to perform with high reliability.

◆ **Features:**

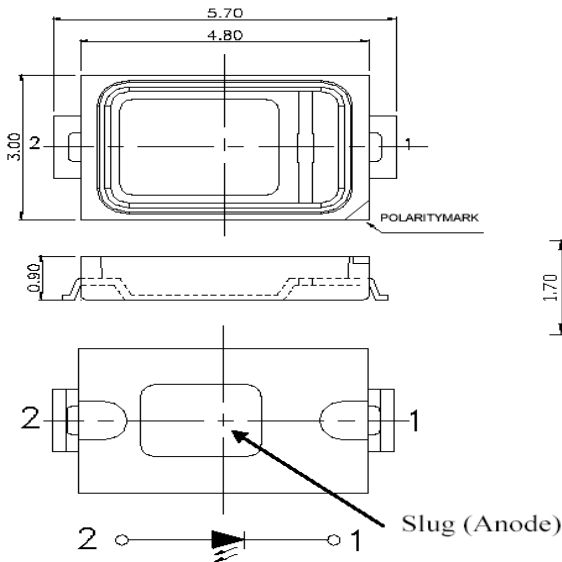
- Pb-Free Reflow soldering application
- RoHS compliant
- White colored SMT package
- Suitable for all SMT assembly and soldering methods
- High Reliability (silicone resin)

◆ **Application:**

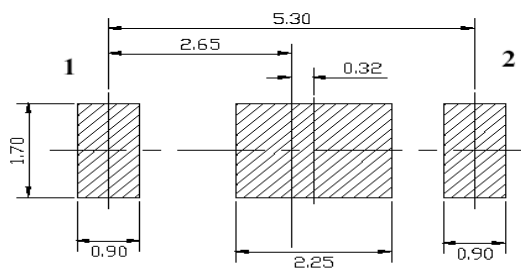
- White Back-light unit
- Electric Signs and Signals
- Interior automotive
- Office Automation, Electrical Appliances, Industrial Equipment.

◆ **Size:**

Package Dimensions



Recommended Soldering



All dimensions are in millimeter

Tolerance is $\pm 0.25\text{mm}$ (0.10") unless otherwise noted

◆ Absolute maximum ratings

Parameter	Symbol	Absolute maximum ratings	Unit
Forward Current	I_F	150	mA
Reverse Voltage	V_R	5	V
Peak forward current	I_{FP}	300	mA
Power	P_D	560	mW
Operating Temperature	T_{opr}	-30~+85	°C
Storage Temperature	T_{stg}	-40~+100	°C
Soldering temperature	T_{sol}	Reflow soldering max temp 260°C (within 10sec) Manual operation soldering max temp 300°C (within 10sec)	

[1] Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.

[2] IFM was measured at $T_w \leq 1$ msec of pulse width and $D \leq 1/10$ of duty ratio.

[3] LED's properties might be different from suggested values like above and below tables if operation condition will be exceeded our parameter range.

◆ Opto-Electrical Specification

Parameter	Symbol	Min	Typ.	Max	Unit	Tolerance	Test Conditions
Forward Voltage	V_f	3.0	--	3.80	V	$\pm 0.1V$	IF forward current=150mA Test Temp=25°C
Luminous Intensity	I_V	--	--	--	mcd	± 60 mcd	
Color Temperature	TC	2600	--	3000	k	$\pm 100k$	
Chromatic coordinates	X	--	--	--	/	± 0.005	
	Y	--	--	--	/	± 0.005	
Luminous Flux	Φ	45	--	55	Lm	± 0.5 Lm	
Viewing Angle	θ	--	120	--	deg	± 2	
Color rendering index	CRI	--	--	--	%	± 1	
Reverse Current	I_R	--	--	10	μA	$\pm 1\mu A$	$V_r=5V$

[Note] All measurements were made under the standardized environment of SSC.

Tolerance : $V_f : \pm 0.1V$, $I_v : \pm 10\%$, $R_a : \pm 3$, $x, y : \pm 0.01$

◆ **Color & Binning**
BINING Code description:

BIN : L3/62C/V5		
Luminous flux	CIE	Foward voltage
L3	62C	V5

BIN							Ta=25°C
Item	BIN	Symbol	Test Conditions	Min	Max	Unit	
Luminous flux	L0	Φ	If=150mA	35	40	lm	
	L1			40	45		
	L2			45	50		
	L3			50	55		
Forward current	V0	VF	If=150mA	2.8	2.9	V	
	V1			2.9	3.0		
	V2			3.0	3.1		
	V3			3.1	3.2		
	V4			3.2	3.3		
	V5			3.3	3.4		
	V6			3.4	3.5		
	V7			3.5	3.6		
	V8			3.6	3.7		
V9	3.7	3.8					

[Note]:Tolerance: Foward voltage:± 0.1V, Luminous flux :±0.5lm

COLOR RANK

If=150mA Ta=25°C

BIN 号	CIE-X	CIE-Y	BIN 号	CIE-X	CIE-Y	BIN 号	CIE-X	CIE-Y	BIN 号	CIE-X	CIE-Y
26Q	0.4416	0.3743	26F	0.4520	0.3927	26E	0.4625	0.4113	26P	0.4729	0.4299
	0.4520	0.3927		0.4625	0.4113		0.4729	0.4299		0.4833	0.4485
	0.4593	0.3944		0.4703	0.4132		0.4813	0.4319		0.4921	0.4503
	0.4483	0.3756		0.4593	0.3944		0.4703	0.4132		0.4813	0.4319
27U	0.4346	0.3725	27D	0.4446	0.3910	27C	0.4546	0.4095	27R	0.4646	0.4280
	0.4446	0.3910		0.4546	0.4095		0.4646	0.4280		0.4744	0.4462
	0.4520	0.3927		0.4625	0.4113		0.4729	0.4299		0.4833	0.4485
	0.4416	0.3743		0.4520	0.3927		0.4625	0.4113		0.4729	0.4299
28T	0.4278	0.3709	28B	0.4373	0.3893	28A	0.4468	0.4077	28S	0.4562	0.4260
	0.4373	0.3893		0.4468	0.4077		0.4562	0.4260		0.4656	0.4442
	0.4446	0.3910		0.4546	0.4095		0.4646	0.4280		0.4744	0.4462
	0.4346	0.3725		0.4446	0.3910		0.4546	0.4095		0.4646	0.4280
29Q	0.4210	0.3686	29F	0.4298	0.3867	29E	0.4386	0.4048	29P	0.4474	0.4228
	0.4298	0.3867		0.4386	0.4048		0.4474	0.4228		0.4562	0.4408
	0.4373	0.3893		0.4468	0.4077		0.4562	0.4260		0.4656	0.4442
	0.4278	0.3709		0.4373	0.3893		0.4468	0.4077		0.4562	0.4260
30U	0.4139	0.3661	30D	0.4222	0.3840	30C	0.4305	0.4019	30R	0.4387	0.4197

深圳市宝安区西乡镇勒竹角村天富安工业园 3 栋

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RUNLITE®

	0.4222	0.3840		0.4305	0.4019		0.4387	0.4197		0.4469	0.4375
	0.4298	0.3867		0.4386	0.4048		0.4474	0.4228		0.4562	0.4408
	0.4210	0.3686		0.4298	0.3867		0.4386	0.4048		0.4474	0.4228
31T	0.4071	0.3638	31B	0.4147	0.3814	31A	0.4223	0.3990	31S	0.4299	0.4165
	0.4147	0.3814		0.4223	0.3990		0.4299	0.4165			
	0.4222	0.3840		0.4305	0.4019		0.4387	0.4197			
	0.4139	0.3661		0.4222	0.3840		0.4305	0.4019			
33Q	0.3992	0.3602	33F	0.4061	0.3773	33E	0.4130	0.3944	33P	0.4198	0.4115
	0.4061	0.3773		0.4130	0.3944		0.4198	0.4115			
	0.4147	0.3814		0.4223	0.3990		0.4299	0.4165			
	0.4071	0.3638		0.4147	0.3814		0.4223	0.3990			
34U	0.3914	0.3564	34D	0.3975	0.3731	34C	0.4036	0.3898	34R	0.4097	0.4065
	0.3975	0.3731		0.4036	0.3898		0.4097	0.4065			
	0.4061	0.3773		0.4130	0.3944		0.4198	0.4115			
	0.3992	0.3602		0.4061	0.3773		0.4130	0.3944			
36T	0.3833	0.3526	36B	0.3889	0.3690	36A	0.3943	0.3853	36S	0.3996	0.4015
	0.3889	0.3690		0.3943	0.3853		0.3996	0.4015			
	0.3975	0.3731		0.4036	0.3898		0.4097	0.4065			
	0.3914	0.3564		0.3975	0.3731		0.4036	0.3898			
38Q	0.3775	0.3511	38F	0.3822	0.3670	38E	0.3869	0.3829	38P	0.3916	0.3987
	0.3822	0.3670		0.3869	0.3829		0.3916	0.3987			
	0.3897	0.3716		0.3952	0.3880		0.4006	0.4044			
	0.3842	0.3552		0.3897	0.3716		0.3952	0.3880			
39U	0.3706	0.3471	39D	0.3746	0.3624	39C	0.3786	0.3777	39R	0.3826	0.3931
	0.3746	0.3624		0.3786	0.3777		0.3826	0.3931			
	0.3822	0.3670		0.3869	0.3829		0.3916	0.3987			
	0.3775	0.3511		0.3822	0.3670		0.3869	0.3829			
41T	0.3640	0.3440	41B	0.3670	0.3578	41A	0.3702	0.3722	41S	0.3736	0.3874
	0.3670	0.3578		0.3702	0.3722		0.3736	0.3874			
	0.3746	0.3624		0.3786	0.3777		0.3826	0.3931			
	0.3706	0.3471		0.3746	0.3624		0.3786	0.3777			
44U	0.3567	0.3389	44D	0.3590	0.3521	44C	0.3615	0.3659	44R	0.3641	0.3804
	0.3590	0.3521		0.3615	0.3659		0.3641	0.3804			
	0.3670	0.3578		0.3702	0.3722		0.3736	0.3874			
	0.3640	0.3440		0.3670	0.3578		0.3702	0.3722			
46T	0.3495	0.3339	46B	0.3512	0.3465	46A	0.3530	0.3597	46S	0.3548	0.3736
	0.3512	0.3465		0.3530	0.3597		0.3548	0.3736			
	0.3590	0.3521		0.3615	0.3659		0.3641	0.3804			
	0.3567	0.3389		0.3590	0.3521		0.3615	0.3659			
48U	0.3429	0.3307	48D	0.3440	0.3427	48C	0.3451	0.3554	48R	0.3463	0.3687
	0.3440	0.3427		0.3451	0.3554		0.3463	0.3687			
	0.3515	0.3487		0.3533	0.3620		0.3551	0.3760			
	0.3498	0.3362		0.3515	0.3487		0.3533	0.3620			
52T	0.3361	0.3245	52B	0.3366	0.3369	52A	0.3371	0.3490	52S	0.3376	0.3616
	0.3366	0.3369		0.3371	0.3490		0.3376	0.3616			
	0.3440	0.3427		0.3451	0.3554		0.3463	0.3687			
	0.3429	0.3307		0.3440	0.3427		0.3451	0.3554			
55U	0.3290	0.3180	55D	0.3290	0.3300	55C	0.3290	0.3417	55R	0.3290	0.3538
	0.3290	0.3300		0.3290	0.3417		0.3290	0.3538			
	0.3366	0.3369		0.3371	0.3490		0.3376	0.3616			
	0.3361	0.3245		0.3366	0.3369		0.3371	0.3490			
58T	0.3231	0.3120	58B	0.3222	0.3243	58A	0.3215	0.3350	58S	0.3207	0.3462
	0.3222	0.3243		0.3215	0.3350		0.3207	0.3462			
	0.3290	0.3300		0.3290	0.3417		0.3290	0.3537			
	0.3290	0.3180		0.3290	0.3300		0.3290	0.3417			

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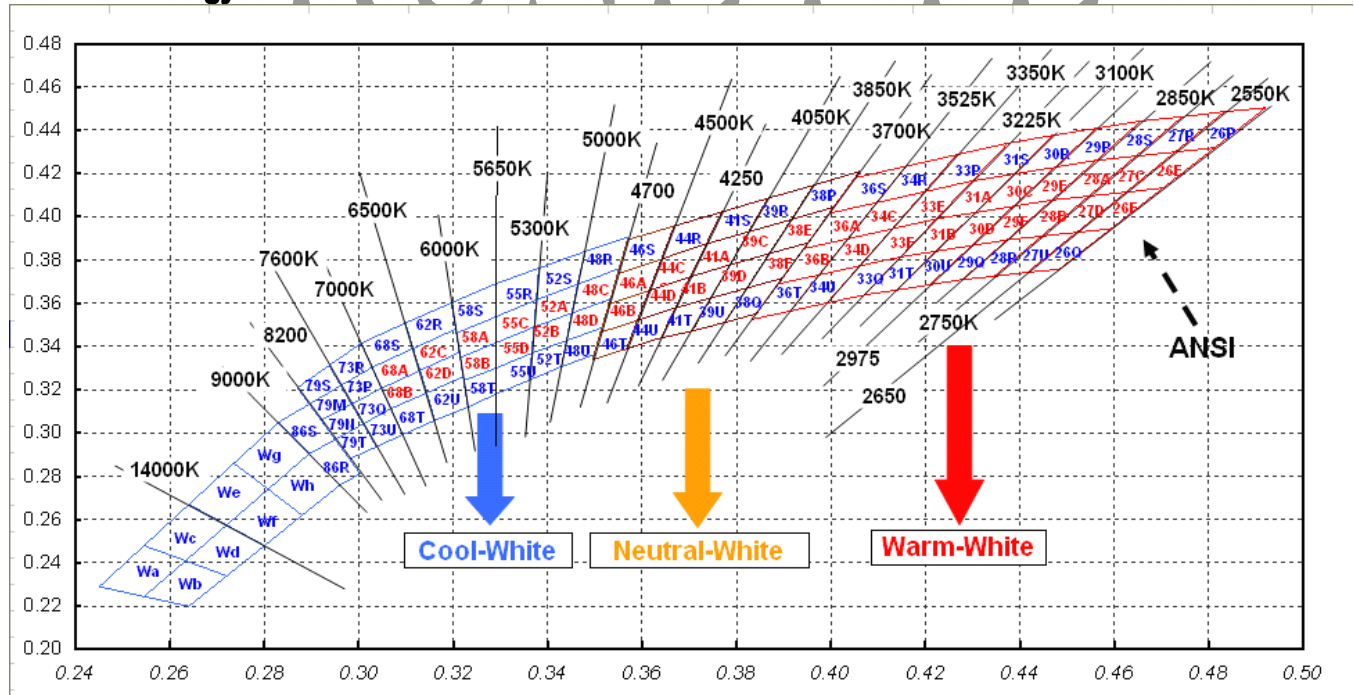


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62U	0.3161	0.3059	62D	0.3144	0.3186	62C	0.3130	0.3290	62R	0.3115	0.3391
	0.3144	0.3186		0.3130	0.3290		0.3115	0.3391			
	0.3221	0.3261		0.3213	0.3373		0.3205	0.3481			
	0.3231	0.3120		0.3221	0.3261		0.3213	0.3373			
68T	0.3093	0.2993	68B	0.3068	0.3113	68A	0.3048	0.3207	68S	0.3028	0.3304
	0.3068	0.3113		0.3048	0.3207		0.3115	0.3391			
	0.3144	0.3186		0.3130	0.3290		0.3130	0.3290			
	0.3161	0.3059		0.3144	0.3186		0.3130	0.3290			
73U	0.3037	0.2937	73Q	0.3009	0.3042	73P	0.2984	0.3133	73R	0.2962	0.3220
	0.3009	0.3042		0.2984	0.3133		0.3028	0.3304			
	0.3068	0.3113		0.3048	0.3207		0.3048	0.3207			
	0.3093	0.2993		0.3068	0.3113		0.3048	0.3207			
79T	0.2980	0.2880	79N	0.2950	0.2970	79M	0.2920	0.3060	79S	0.2895	0.3134
	0.2950	0.2970		0.2920	0.3060		0.2962	0.3220			
	0.3009	0.3042		0.2984	0.3133		0.2984	0.3133			
	0.3037	0.2937		0.3009	0.3042		0.2984	0.3133			
86R	0.2960	0.2760	86S	0.2895	0.2905	Wh	0.2880	0.2620	Wg	0.2808	0.2740
	0.2895	0.2905		0.2830	0.3050		0.2895	0.2905			
	0.2950	0.2970		0.2895	0.3134		0.2960	0.2760			
	0.3003	0.2812		0.2950	0.2970		0.2960	0.2760			
Wd	0.2800	0.2480	We	0.2720	0.2575	Wd	0.2720	0.2340	Wc	0.2633	0.2410
	0.2720	0.2575		0.2640	0.2670		0.2633	0.2410			
	0.2808	0.2740		0.2735	0.2860		0.2720	0.2575			
	0.2880	0.2620		0.2808	0.2740		0.2800	0.2480			
Wb	0.2640	0.2200	Wa	0.2545	0.2245					0.2633	0.2410
	0.2545	0.2245		0.2450	0.2290					0.2545	0.2480
	0.2633	0.2410		0.2545	0.2480					0.2640	0.2670
	0.2720	0.2340		0.2633	0.2410					0.2720	0.2575

* Measurement Uncertainty of the Color Coordinates : ±0.005

C.I.E1931 Energy Star Rank



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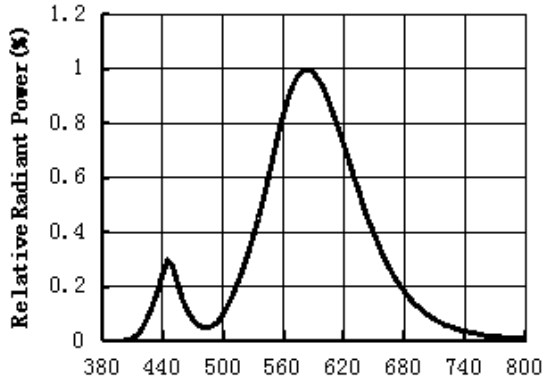
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◆ Optical characteristics

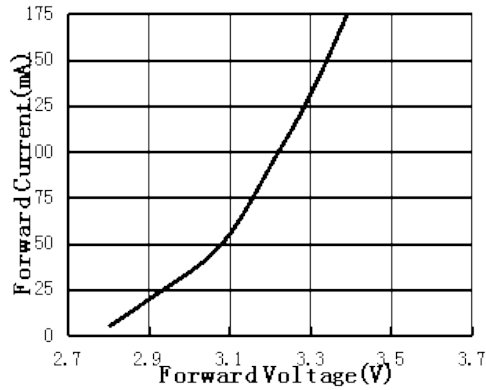
Spectrum

Ta=25°C



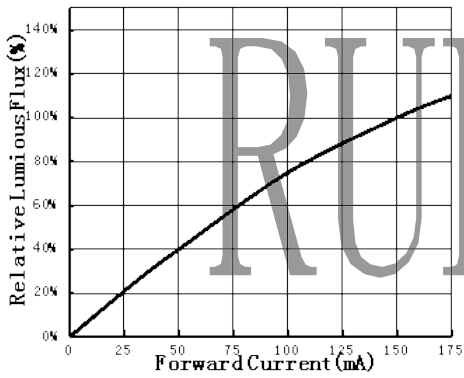
Forward Voltage

VS Forward current Ta=25°C



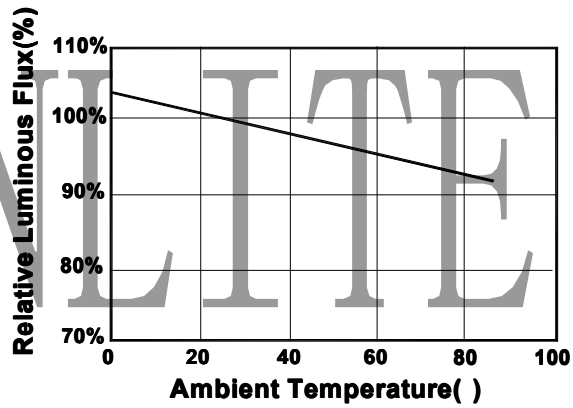
Forward current

VS Relative luminous Flux Ta=25°C



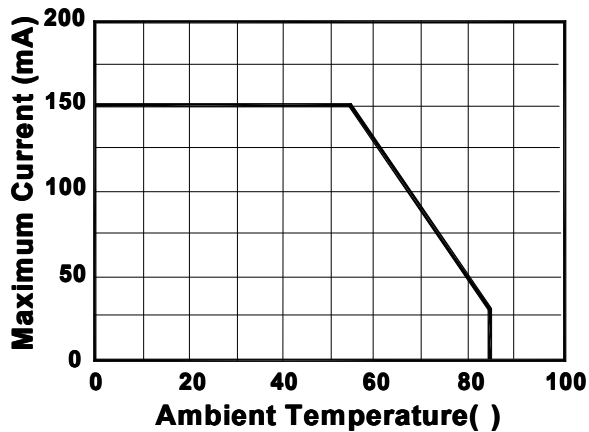
Ambient temp

VS Relative Luminous Flux IF=150mA



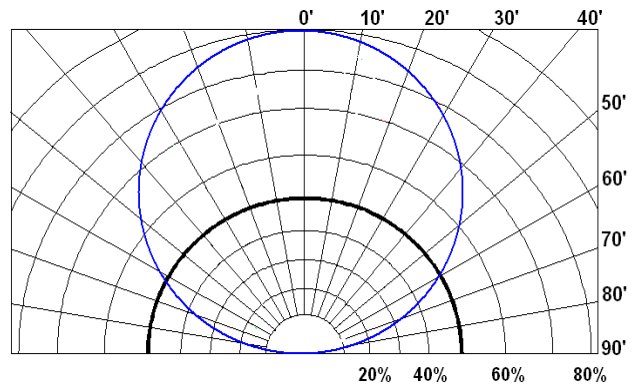
Ambient temp

VS Forward current Ta=25°C



Directivity

Ta=25°C



◆ Reliability Test Items and Conditions

NO.	Item	Condition	Duration/Cycle	Number of Damaged
1	Reflow	260°C<10 sec,reflow soldering	3 time	0/60
2	Thermal Shock	Ta=-40°C(30min)~Ta=100°C(30min)	100cycle	0/60
3	High Temp. Storage	Ta=100°C	1000 Hrs	0/60
4	Low Temp. Storage	Ta= -40°C	1000Hrs	0/60
5	Temperature Cycle Test	Ta=-40°C(30min)~Ta=100°C(30min)	100cycle	0/60
6	High Temp. High Humidity Storage	Ta=85 °C, RH=85%	1000 Hrs	0/60
7	Operation Life Test	Ta=25°C, If=150mA	1000 Hrs	0/60
8	High Temp. High Humidity Test	Ta=60 °C, RH=90 %, If=150mA	500Hrs	0/60
9	Low Temp. Operation Life Test	Ta=-40°C, If=150mA	1000Hrs	0/60

◆ Judgment Criteria:

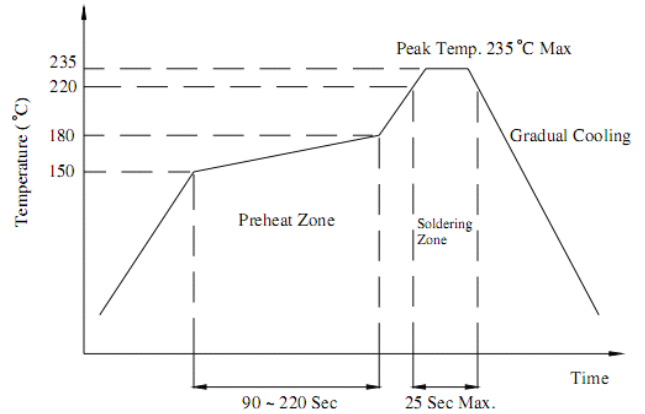
Item	Symbol	Test Conditions	Judgment Criteria	
			Min	Max
Forward Voltage	Vf	If = 150 mA	---	USL*1×1.1
Leakage Current	Ir	Vr = 5V		20um
Luminous Intensity	Iv	If = 150mA	LSL ² ×0.7	--
Luminous Flux	Im	If = 150 mA	LSL ² ×0.7	--

Note : [1] USL : Upper Standard Level
 [2] LSL : Lower Standard Level

◆ Soldering

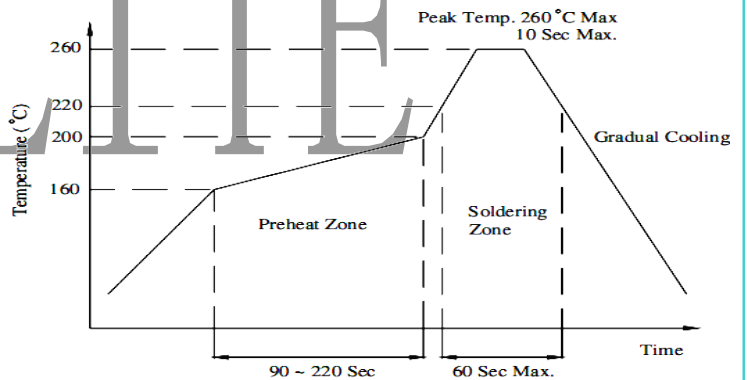
(1) Lead Solder

Lead solder	
Pre-heat	150~180°C
Pre-heat time	90~220 sec
Peak-temperature	235°C Max
Soldering time condition	25 sec Max



(2) Lead-Free Solder

Lead-free solder	
Pre-heat	160~200°C
Pre-heat time	90~220 sec
Peak-temperature	260°C Max
Soldering time condition	60 sec Max



(3) Hand Soldering conditions

Do not exceed 4 seconds at maximum 315°C under soldering iron.

(4) The encapsulated material of the LEDs is silicone.

Precautions should be taken to avoid the strong pressure on the encapsulated part. So when using the chip moulder, the picking up nozzle that does not affect the silicone resin should be used.

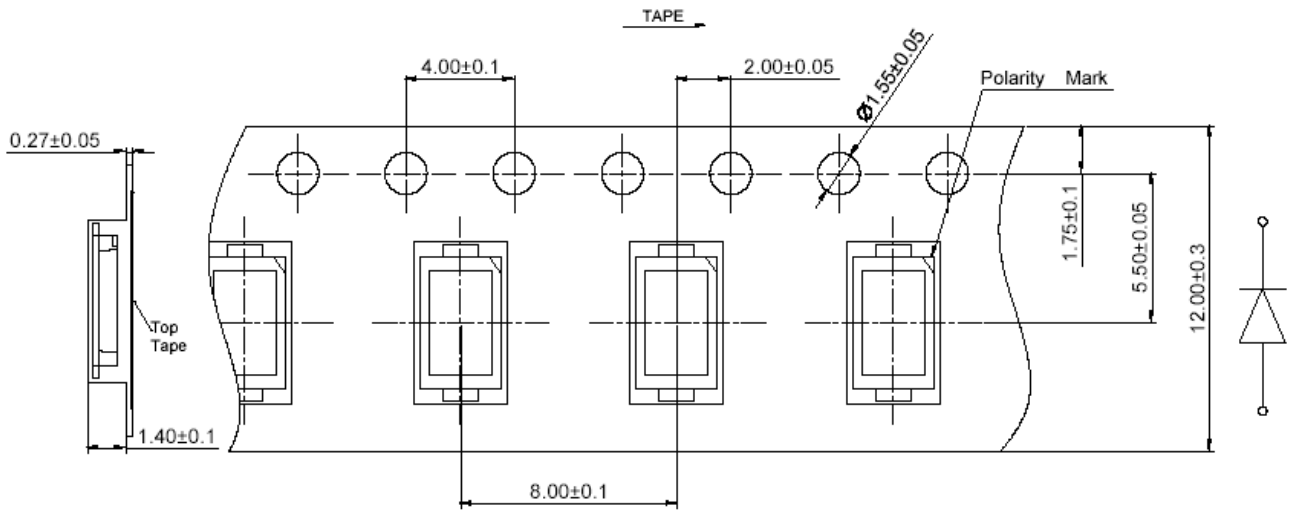
(5) It is recommended that the customer use the nitrogen reflow method.

(6) Repairing should not be done after the LEDs have been soldered.

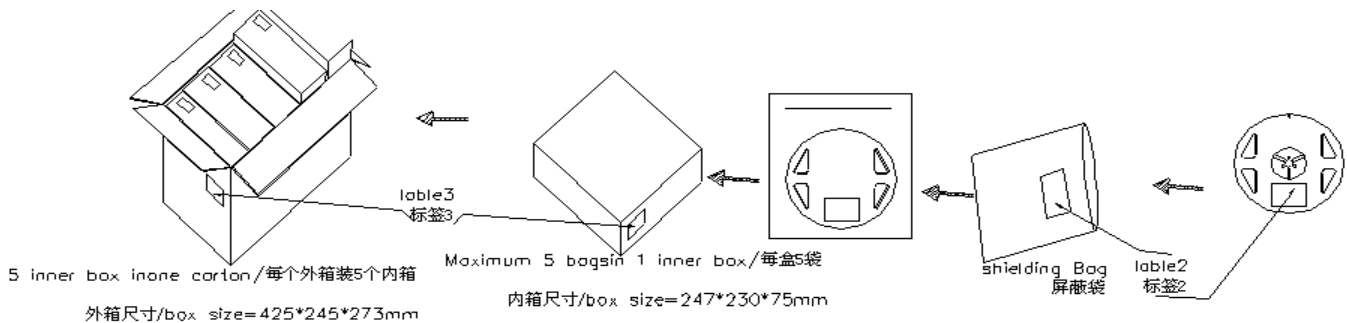
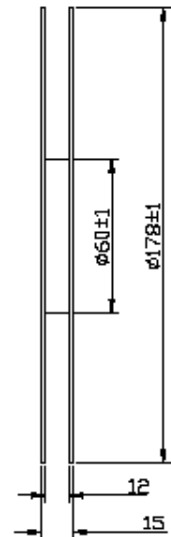
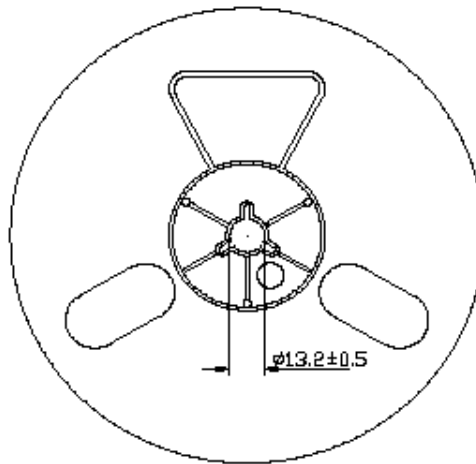
(7) Reflow soldering should not be done more than two times.

In the case of more than 24 hours passed soldering after first, LEDs will be damaged.

◆ Packaging Specifications (Unit: mm)



RU



◆Caution:

- 1、 Before opening the package: the LED should be kept at 30°C or less and 90 % RH or less.
- 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 with in 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.
- 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 exceed the storage time, bake treatment should be performed using the following conditions.baking treatment :more than 24 hours at 60±5 °C。
- 4、 The LED is an ESD sensitive device. All the equipment and machine must be properly grounded.
- 5、 When make use of it,please use static-free container,operator should ware antistatic clothes and rope-satic-ring also should make effective ground.
- 6、 Damaged device will appear some symptoms,lower forward voltage,higher leak current,or even short current.
- 7、 After soldering the LED should keep out off any shake or outer force before it come to normal tempreture.
- 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.
- 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.
- 10、 Please design the PCB board to keep a distance between LED and other emit heat component.
- 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.
- 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 electricity will cause lacking light.
- 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.