



Specification for Approval

- DEVICE NUMBER: BL-2835W10-34-R80

SAMPLES
ATTACHED AREA

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2017.10.16	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	Initial Released

FOR CUSTOMER'S APPROVAL STAMP OR SIGNATURE

APPROVED	PURCHASE	MANUFACTURE	QUALITY	ENGINEERING

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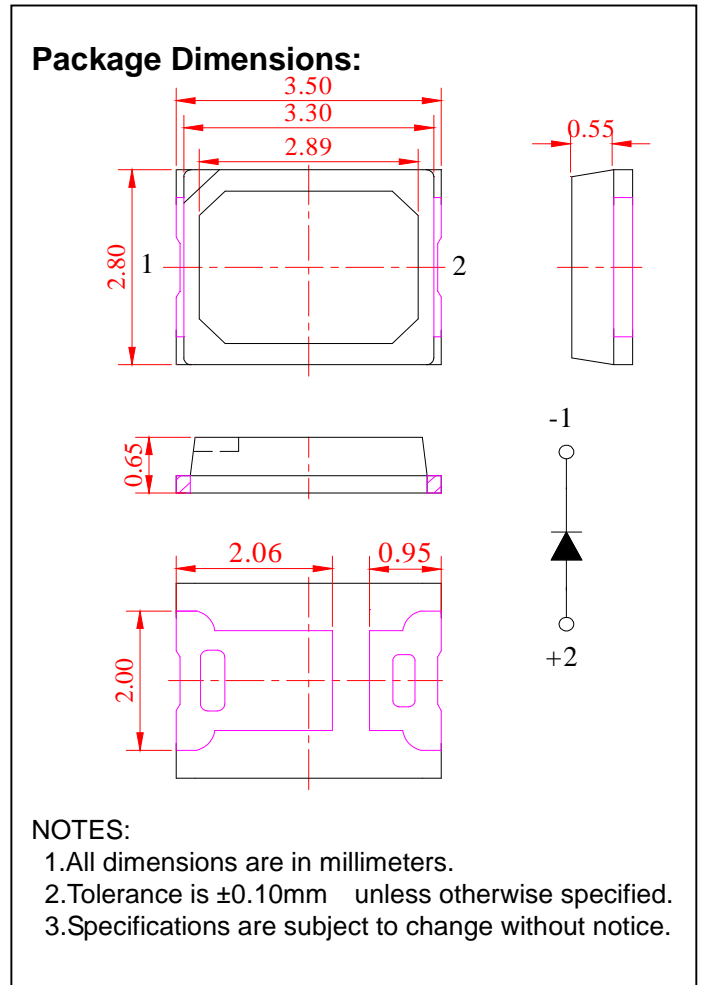
ISSUED	APPROVED	PREPARED
張孝嚴	陳悌帆	熊燦芬

● **Features:**

1. Emitted Color: White..
CCT: 2580~3710K
2. Lens Appearance: Yellow clear.
3. 3.5*2.8*0.65mm standard package.
4. Suitable for all SMT assembly methods.
5. Compatible with infrared and vapor phase reflow solder process.
6. Compatible with automatic placement equipment.
7. This product doesn't contain restriction Substance, comply ROHS standard.

● **Applications:**

1. Lighting
2. Automotive lighting.
3. Backlighting: LCDs
4. Status indicators: Consumer & industrial electronics.
5. General use.



● **Absolute Maximum Ratings(Ta=25°C)**

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	610	mW
Forward Current	I _F	180	mA
*1 Peak Forward Current	I _{FP}	270	mA
LED Junction Temperature	T _J	115	°C
Operating Temperature	Topr	-30~+80	°C
Storage Temperature	Tstg	-40~+100	°C
Soldering Temperature	Tsol	See Page 9	-

Note : IFP is pulse of 1/10 duty at 1KHz

● Electrical and optical characteristics(Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
*2 Forward Voltage	V _f	I _F =150mA	3.0	-	3.5	V
*3 Luminous Intensity	I _v		25000	-	-	mcd
Luminous Flux	Φ _v		50	-	-	lm
*4 Chromaticity Coordinates	x		-	0.43	-	-
	y		-	0.40	-	-
Color Temperature	CCT		2580	-	3710	K
Color Rendering Index	CRI		80	-	-	-
Viewing Angle	2θ _{1/2}		-	120	-	deg

● Typical Electro-Optical Characteristics Curves.

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

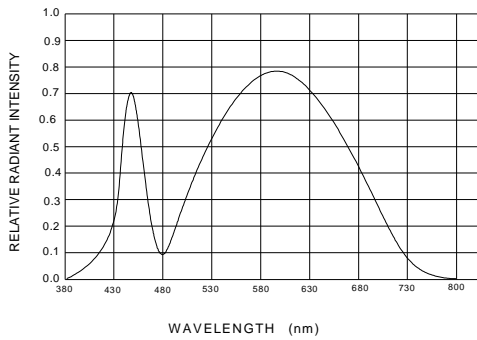


Fig.2 FORWARD CURRENT VS. AMBIENT TEMPERATURE

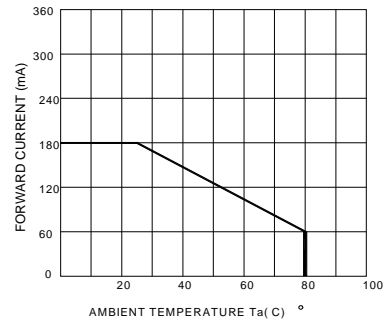


Fig.3 RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

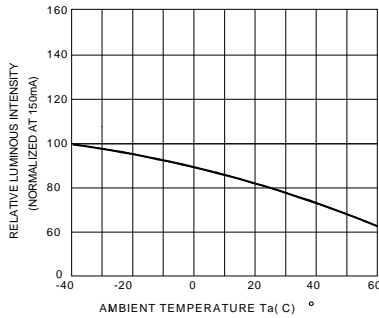


Fig.4 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

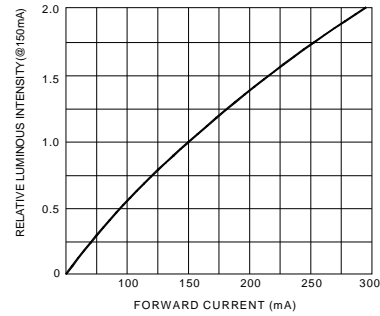


Fig.5 FORWARD CURRENT VS. FORWARD VOLTAGE

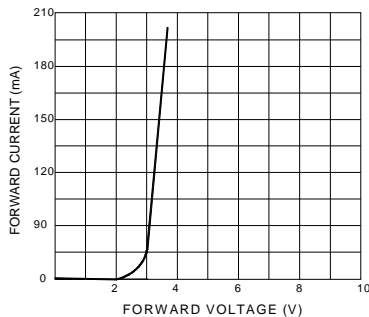
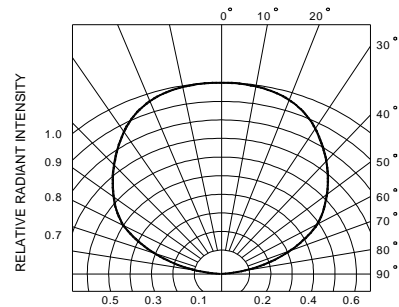
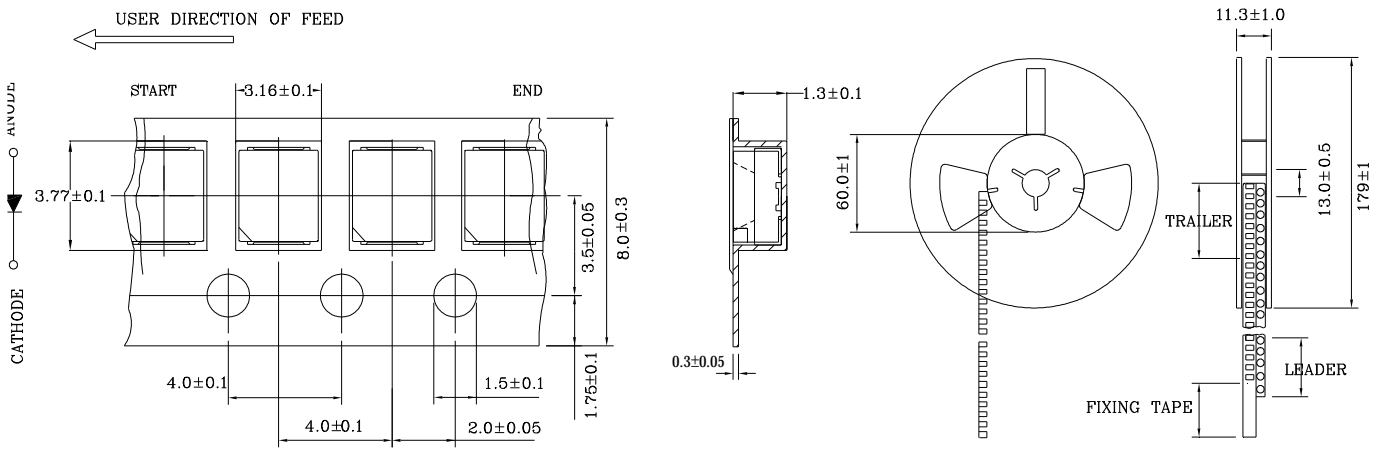


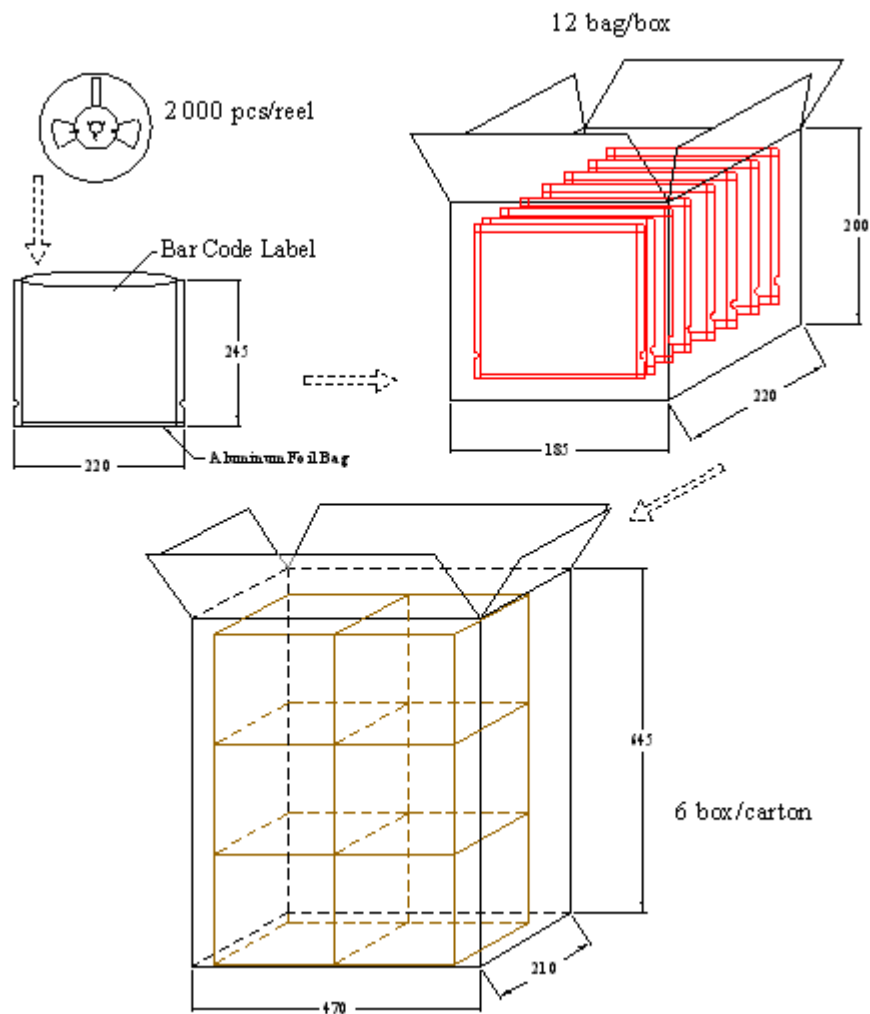
Fig.6 RADIATION DIAGRAM



● Tapping and packaging specifications(Units: mm)



● Package Method:(unit:mm)



Intensity Bin Limits (At 150 mA)

BIN CODE	Min. (mcd)	Max. (mcd)	Min. (Lm)	Max. (Lm)
P	25000	27500	50	55
Q	27500	30000	55	60
R	30000	32500	60	65

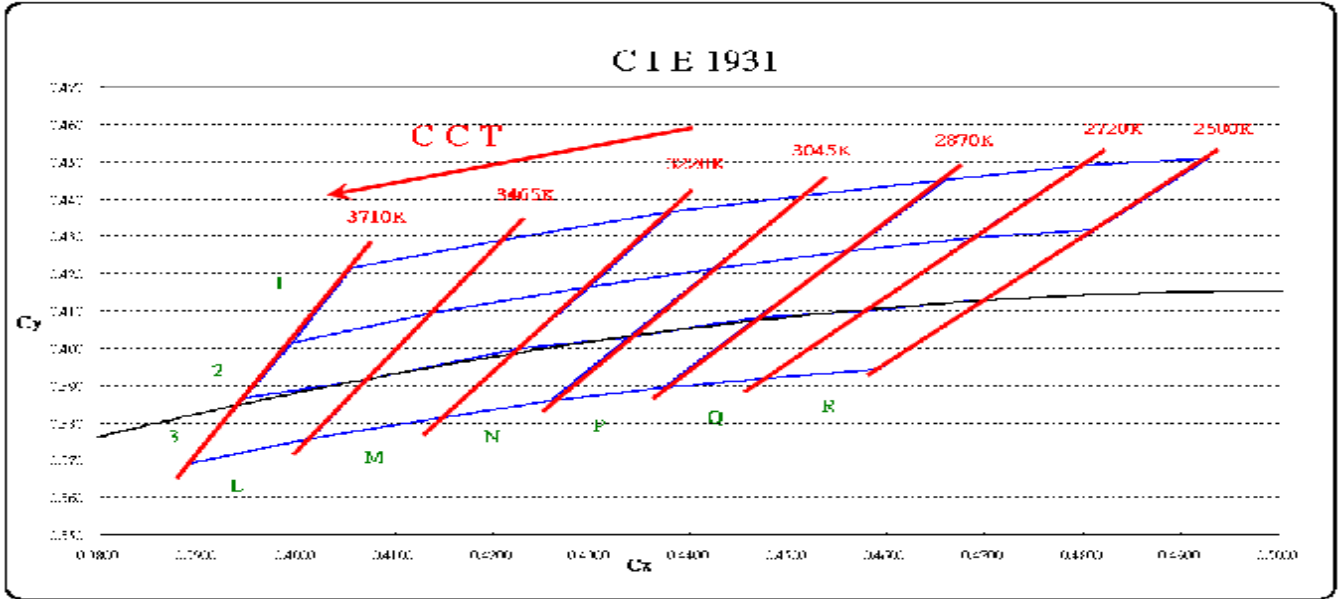
Tolerance for each Bin limit is $\pm 10\%$.

Forward Voltage Bin Limits (At 150 mA)

BIN CODE	Min.(v)	Max.(v)
Z	2.9	3.0
A	3.0	3.1
B	3.1	3.2
C	3.2	3.3
D	3.3	3.4

Tolerance for each Bin limit is $\pm 0.02V$.

Color Temperature Bin Limits (At 150mA)



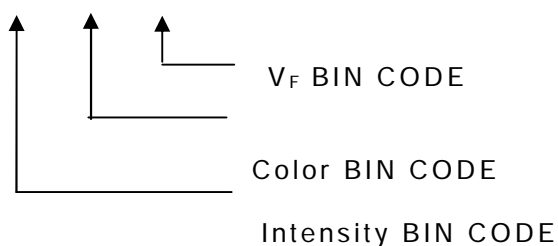
Color Bin Limits (at 150mA)

BIN	CCT(K)		Chromaticity Coordinates					
			x	y	z	w	v	
L-1	3500K (3220-3710K)	3465-3710K	x	0.4138	0.3996	0.4056	0.4210	0.4138
L-2			y	0.4095	0.4015	0.4215	0.4292	0.4095
			x	0.4073	0.3947	0.3996	0.4138	0.4073
L-3			y	0.3917	0.3867	0.4015	0.4095	0.3917
			x	0.4015	0.3889	0.3947	0.4073	0.4015
M-1			y	0.3759	0.3690	0.3867	0.3917	0.3759
		x	0.4299	0.4138	0.4210	0.4382	0.4299	
M-2		y	0.4165	0.4095	0.4292	0.4365	0.4165	
		x	0.4227	0.4073	0.4138	0.4299	0.4227	
M-3	y	0.3999	0.3917	0.4095	0.4165	0.3999		
	x	0.4147	0.4015	0.4073	0.4227	0.4147		
			y	0.3261	0.3180	0.3282	0.3360	0.3261

BIN	CCT(K)		Chromaticity Coordinates					
			x	y	z	w	v	
N-1	3000K	3045-3220K	x	0.4423	0.4299	0.4382	0.4515	0.4423

	(2870-3220K)		y	0.4212	0.4165	0.4365	0.4409	0.4212	
N-2			x	0.4338	0.4227	0.4299	0.4423	0.4338	
			y	0.4030	0.3999	0.4165	0.4212	0.4030	
			x	0.4258	0.4147	0.4227	0.4338	0.4258	
N-3			y	0.3859	0.3814	0.3999	0.4030	0.3859	
			x	0.4562	0.4423	0.4515	0.4660	0.4562	
P-1			2870-3045K	y	0.4260	0.4212	0.4409	0.4452	0.4260
P-2				x	0.4469	0.4338	0.4423	0.4562	0.4469
				y	0.4082	0.4030	0.4212	0.4260	0.4082
P-3	x	0.4373		0.4258	0.4338	0.4469	0.4373		
	y	0.3893		0.3859	0.4030	0.4082	0.3893		
Q-1	2720-2870K	x		0.4687	0.4562	0.4660	0.4797	0.4687	
		y		0.4295	0.4260	0.4452	0.4490	0.4295	
Q-2		x		0.4578	0.4469	0.4562	0.4687	0.4578	
		y	0.4101	0.4082	0.4260	0.4295	0.4101		
Q-3		x	0.4476	0.4373	0.4469	0.4578	0.4476		
		y	0.3918	0.3893	0.4082	0.4101	0.3918		
R-1	2580-2720K	x	0.4813	0.4687	0.4797	0.4928	0.4813		
		y	0.4319	0.4295	0.4490	0.4510	0.4319		
R-2		x	0.4698	0.4578	0.4687	0.4813	0.4698		
		y	0.4130	0.4101	0.4295	0.4319	0.4130		
R-3		x	0.4593	0.4476	0.4578	0.4698	0.4593		
		y	0.3944	0.3918	0.4101	0.4130	0.3944		

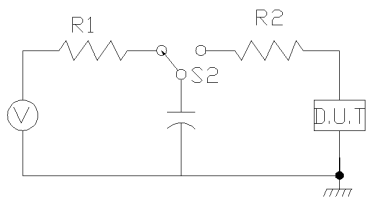
● **BIN : x x x**



Notes:

1. I_v : Tolerance for each Bin limit is ± 10 %
2. Color : Tolerance for each Bin limit is ±0.005
3. Bin categories are established for classification of products.
Products may not be available in all bin categories

● **Reliability Test**

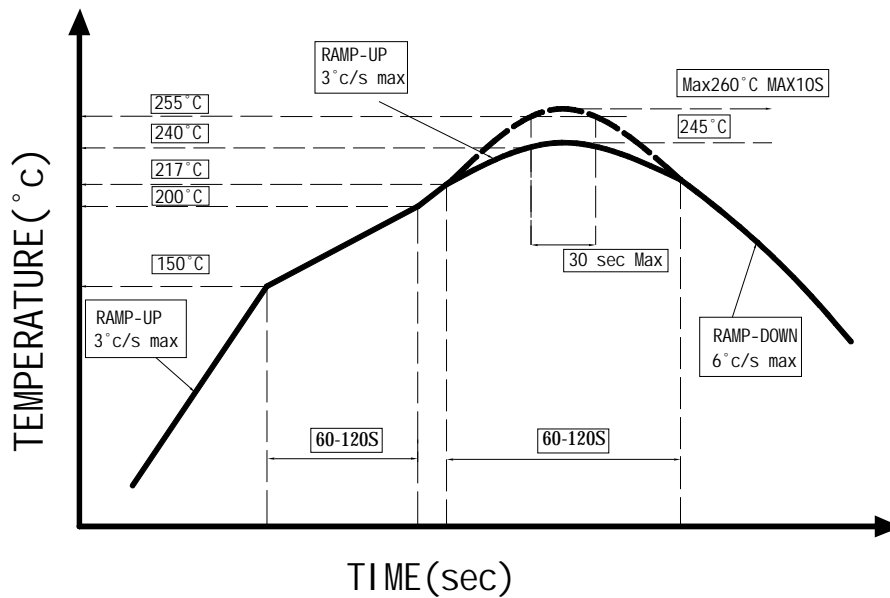
Test Item	Test Conditions	Test Hours/ Cycles	Result
Steady State Operating Life of High Temperature	$I_F=150\text{mA}$ $T_a=60^\circ\text{C}$	1,000hrs	0/20
Steady State Operating Life	$I_F=150\text{mA}$ $T_a=25^\circ\text{C}$	3,000hrs	0/20
Steady State Operating Life Low Temperature Condition1	$I_F=150\text{mA}$ $T_a=-30^\circ\text{C}$	1,000hrs	0/20
Steady State Operating Life Of High Humidity Heat	$I_F=150\text{mA}$ $T_a=60^\circ\text{C}$ RH=75%	1,000hrs	0/20
Thermal shock	$-45^\circ\text{C} \sim +125^\circ\text{C}$ 30 min 30 min	100cycle	0/20
Temperature & Humidity Cycling	$T_a=25^\circ\text{C} \sim +65^\circ\text{C} \sim -10^\circ\text{C}$ RH=90%RH,24hr/1cycle	1cycle	0/20
Resistance to Soldering Heat	$T_{\text{sld}}=260^\circ\text{C}$,10sec(Pre treatment 30°C ,70%,168hrs)	2times	0/20
ESD(HBM)	 <p>-R1:10 KΩ,R2:1.5 KΩ,C:100 pF Discharge Time:3 times</p>	Min.2KV	0/5

● Judgment criteria of failure for the reliability

Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_F (V)	$I_F=150\text{mA}$	Over $U^1 \times 1.2$
Reverse current	I_R (μA)	$V_R=5\text{V}$	Over $U^1 \times 2$
Luminous intensity	I_v (mcd)	$I_F=150\text{mA}$	Below $S^1 \times 0.5$

- Note: 1. U means the upper limit of specified characteristics. S means initial value.
2. After each test, remove test pieces, wait for 2 hours and test pieces have returned to ambient temperature, then take next measurement.

● **IR-Reflow Soldering**



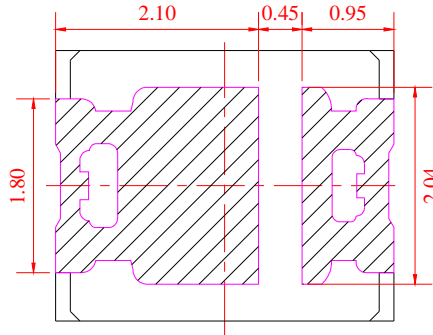
1. Avoid any external stress applied to the resin while the LEDs are at high temperature, especially during soldering .
2. Avoid rapid cooling or any excess vibration during temperature ramp-down process
3. Although the soldering condition is recommended above, soldering at the lowest possible temperature is feasible for the LEDs

● **IRON Soldering**

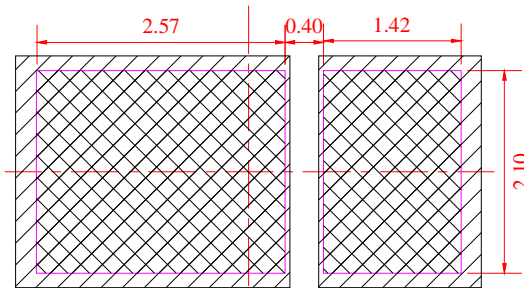
300°C Within 3 sec,one time only.

● **Recommended Soldering Pattern (Unit:mm)**

Front View



Solder Pad



● **Handling :**

Care must be taken not to damage LED's epoxy resin while exposing to high temperature or contact LED's epoxy resin with hard or sharp objects, such as metal hook, tweezer or sand blasting.

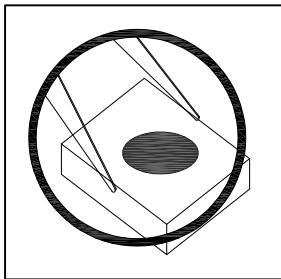
● Handling Precautions

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic

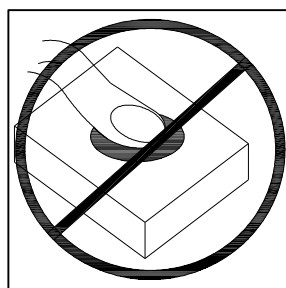
Significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated

LED products. Failure to comply might lead to damage and premature failure of the LED.

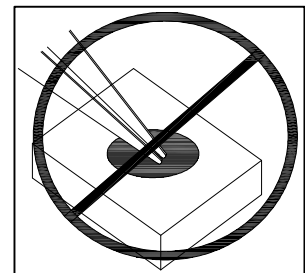
1. Handle the component along the side surfaces by using forceps or appropriate tools. (pic.1)
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry. (pic.2, pic.3)
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry. (pic.4)
4. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible. (pic.5)
5. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup. (pic.5)
6. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production. (pic.5)



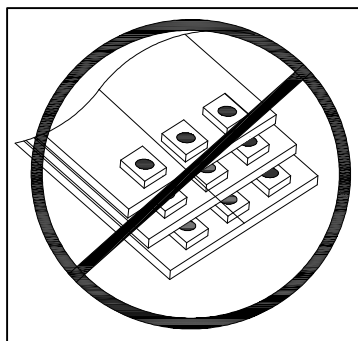
Pic.1



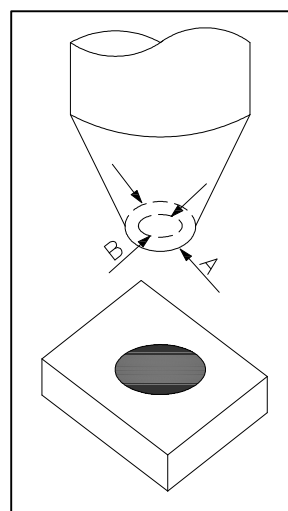
Pic.2



Pic.3



Pic.4



Pic.5

● Notes for designing:

Current limiting resistor must be used in the circuit to drive BRIGHT LEDs within the rated figures and not to overload BRIGHT LEDs with instantaneous voltage at the turning ON and OFF cycles. When using pulse driving, the average current must be within the rated figures. And the circuit should be designed to avoid reverse voltage when turning off the BRIGHT LEDs.

● Storage:

In order to avoid the absorption of moisture, it is recommended to solder BRIGHT LEDs as soon as possible after unpacking the sealed envelope.

If the envelope is still packed, to store it in the environment as following:

Temperature : 5°C-30°C (41°F) Humidity : RH 60% Max.

After this bag is opened, devices that will be applied to infrared reflow, vapor-phase reflow, or equivalent soldering process must be:

Completed within 168 hours.

Stored at less than 30% RH.

Devices require baking before mounting, if:

(2) a or (2) b is not met.

If baking is required, devices must be baked under below conditions:

48 hours at 60°C±3°C.

● Package and Label of Products:

Package: Products are packed in one bag of 2000 pcs (one taping reel) and a label is attached to each bag.

Label:

