5050 White LED Specification Sheet

Approved rank specification for NC LED
Iv: Min 5,000mcd (500mcd Sorting) Vf: 3.0 ~ 3.4V (0.1V Sorting) CCT: 5,700K ~ 7000K

	DRAFT	CHECKED	APPROVED
Solleds			

	DRAFT	CHECKED	APPROVED
Customer			

1.Model Name	: 5050 White LED PKG
2.Product Name	: S5050WH13A
3.Sheet status	: Ver 1.4
4. Date	: 2011-03-08

History

1. February 01, 2009 : 5050 6pin White LED PKG Specification establish
2. December 03, 2009: Add rank table, etc..
3. May 13, 2010: Customized specification
4. December 23, 2010: Adjusted Color rank table
5. March 08, 2011: Apply to CCT Line

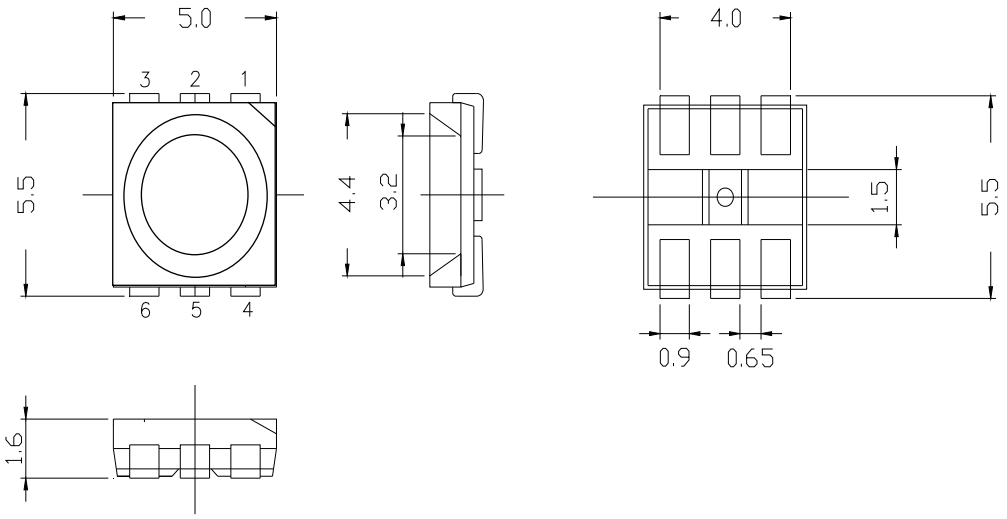
Content of Specification Sheet

1. Feature

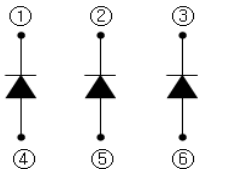
- Beam Angle : 120 Deg (+/- 5Deg)
- PKG dimension : 5.5(W)x5.0(H)x1.6(D)mm
- Low Power Consumption & High Brightness

2. PKG Outline Size

Tolerance: ±0.1 / Unit: mm



Item	Material
Package	Heat resistant Polymer
Encapsulating	Silicone Resin(With Phosphor)
Electrodes	Ag Plating on Copper Alloy



Internal Circuit Diagram

3. Absolute Maximum Ratings (Ta=25°c)

Subject	Symbol	Absolute Maximum Rating	Unit
Power Dissipation	Pd	300	mW
Forward Current	If	90	mA
Pulse Forward Current(*)	Ifp	240	mA
Reverse Voltage	Vr	5	V
Operating Temperature	Topr	-40 ~ +80	°C
Storage Temperature	Tstg	-40 ~ +100	°C

*Note : Condition of Ifp : Pulse Width 10msec , and Duty Ratio 1/10

4. Initial Electrical /Optical Characteristic (Ta=25°c)

Subject	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Forward Voltage	If	If=60mA	3.0		3.4	V
Luminous Intensity	Iv	If=60mA	5,000			mcd
Beam Angle	2Θ1/2	If=60mA		120		Deg

* Luminous Intensity Measured : 0.01sr(CIE. LED_B)
* Luminous Intensity Measurement allowance is ±10%. (By CAS140CT)
* Forward Voltage Measurement allowance is ±0.1v. (By Keithley 2600)

5. Part Name

1	Rank	2	3	4
S5050WH13A		**50**	**A4**	**V0**

1	Part Name	Customer requested part name
2	Iv Rank	50 = 5,000 ~ 5,500 mcd 55 = 5,500 ~ 6,000 mcd 60 = 6,000 ~ mcd
3	CCT Rank	R4 = 5700 ~ 6300 K , R3 = 6300 ~ 7000 K
4	Vf Rank	V0 = 3.0V ~ 3.1V V1 = 3.1V ~ 3.2V V2 = 3.2V ~ 3.3V V3 = 3.2V ~ 3.3V

6. Ranking

(Ta=25°c)

Subject	Symbol	Condition	Rank	Value		Remark
				Min.	Max.	
Luminous Intensity	Iv(mcd)	If=60mA	50	5,000	5,500	
			55	5,500	6,000	
			60	6,000		
Correlated Color Temperature	CCT [K]	If=60mA	R4	5,700	6,300	Reference
			R3	6,300	7,000	
Forward Voltage	Vf[V]	If=60mA	V0	3.0	3.1	-
			V1	3.1	3.2	
			V2	3.2	3.3	
			V3	3.3	3.4	

※ Tolerance : Luminous Intensity/Flux data = ±10%, CCT/CRI data = ±5%, Vf data = ±0.1V.

※ Note: All measurements were made under the standardized environment of SOLLEDS. Co., Ltd.

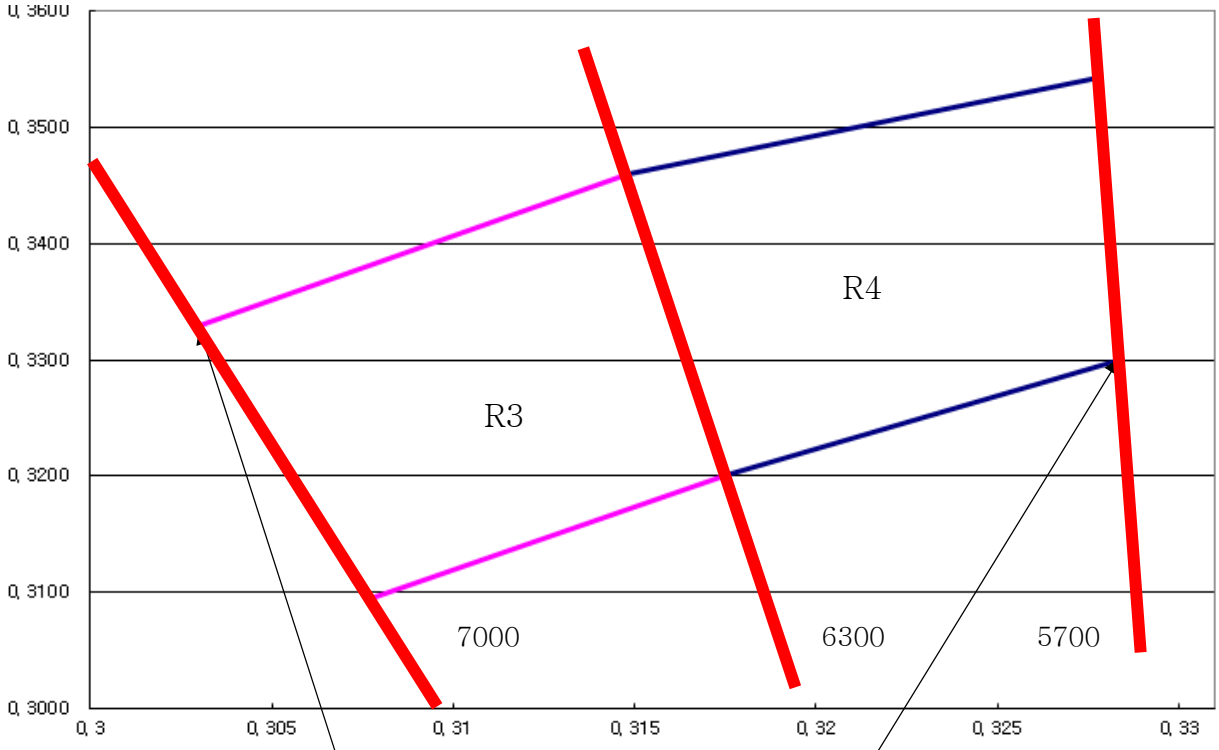
7. Chromaticity Coordinate

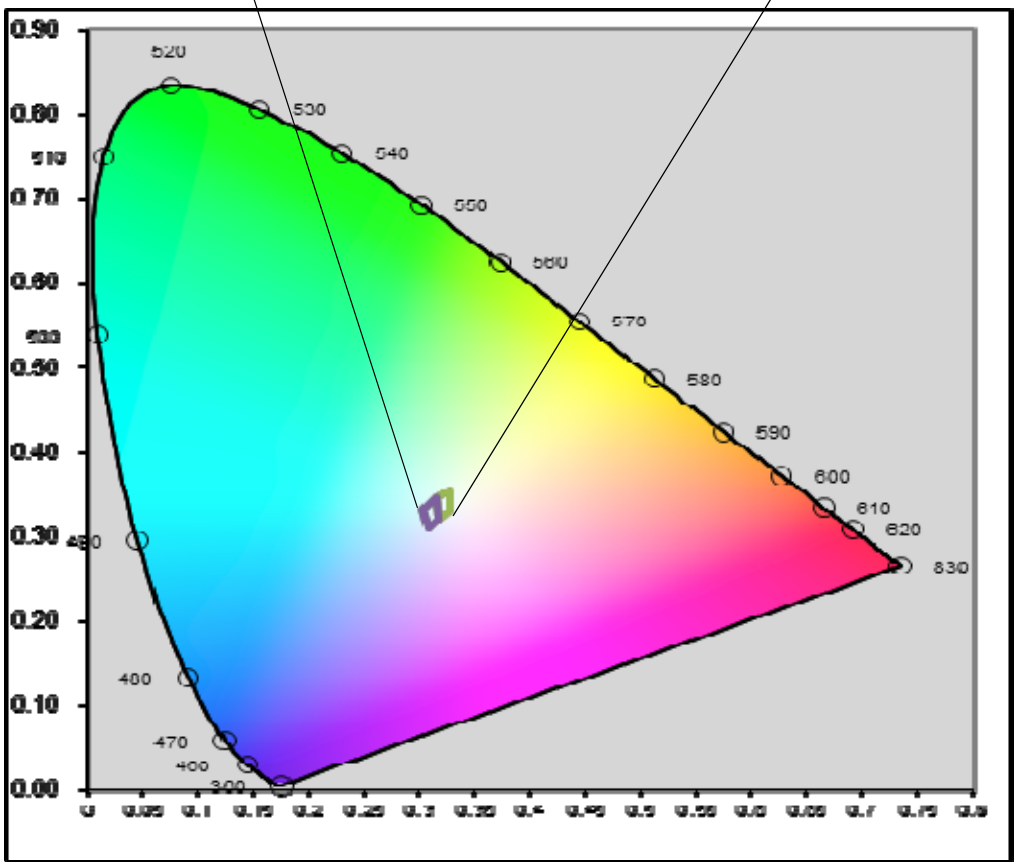
(Ta=25°c)

Rank	X	Y	Rank	X	Y
R4	0.3148	0.3459	R3	0.3148	0.3459
	0.3278	0.3543		0.303	0.333
	0.3283	0.33		0.3077	0.3095
	0.3175	0.3201		0.3175	0.3201

- Measurements tolerance of the Color Coordinates: ±0.01

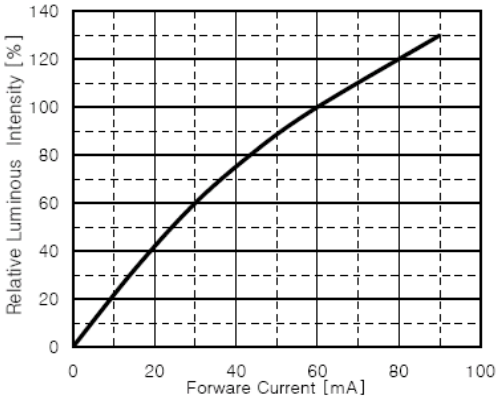
Chromaticity Diagram (CIE 1931 Coordinate)



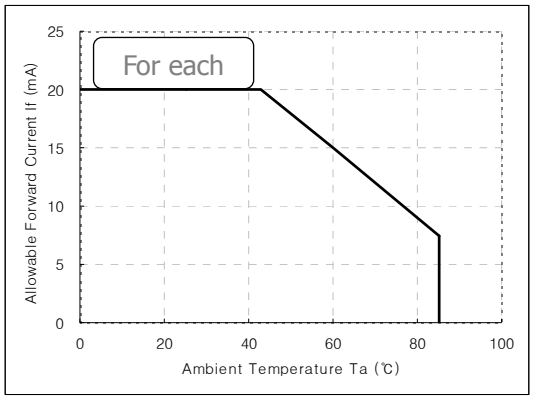


8. Characteristic Diagram (Test Condition ,Ta=25Deg)

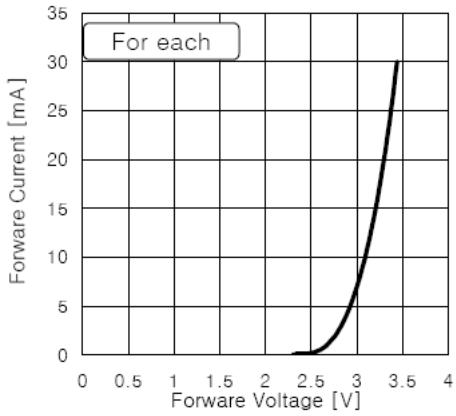
Forward Current vs. Relative Luminous Intensity



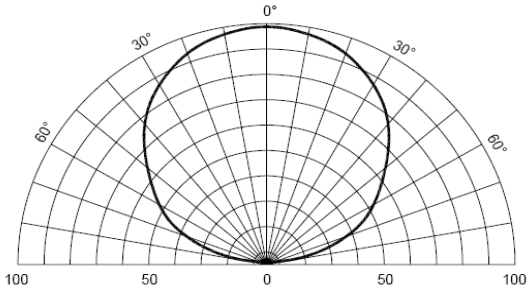
Ambient Temperature vs. Allowable Current



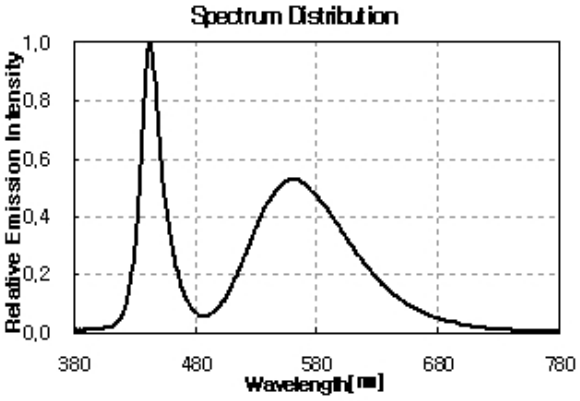
Forward Voltage Vs. Forward Current



Beam Angle



Spectrum



9. Reliability

Test item and results

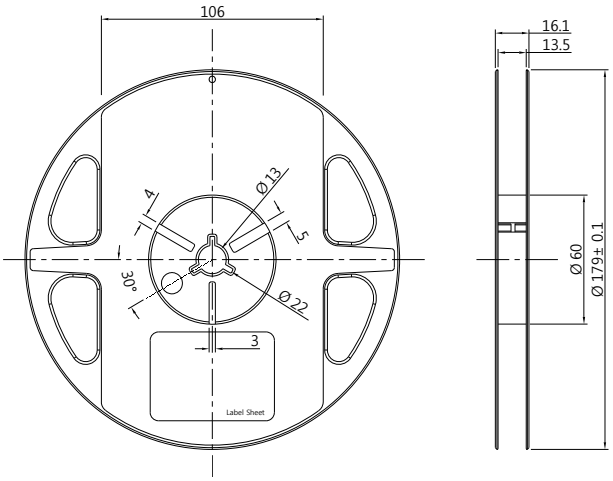
Test Item	Condition	Input Value (Hours/Cycle)	No. of SPL
Normal Temperature Operating Test	25°c+/- 3°c @60mA	1,000Hours	0/22
High Temperature/ Humidity Operating Test JESD-A101-B	Ta=60°c / RH=90% @45mA	1,000Hours	0/22
High Temperature Operating Test	Ta=85°c@21mA	1,000Hours	0/22
Low Temperature Operating Test	Ta=-30 @60mA	1,000Hours	0/22
High Temperature Storage Test	Ta=100°c	500Hours	0/11
Low Temperature Storage Test	Ta=-40°c	500Hours	0/11
Temperature Cycle JESD-A104-A	-40°c ~100°c (15min~15min)	100 Cycle	0/22
Solder Ability (Reflow)	Tsld=260°c , 10sec	2 Times	0/11

Criteria for judging damage

Subject	Symbol	Condition	Reference	
			Min.	Max
Forward Voltage	Vf	If=60mA	-	Initial Level X 1.15
Luminous Intensity	Iv	If=60mA	Initial Level X 0.7	
Reverse Current(*)	Ir	Vr=5V		10uA

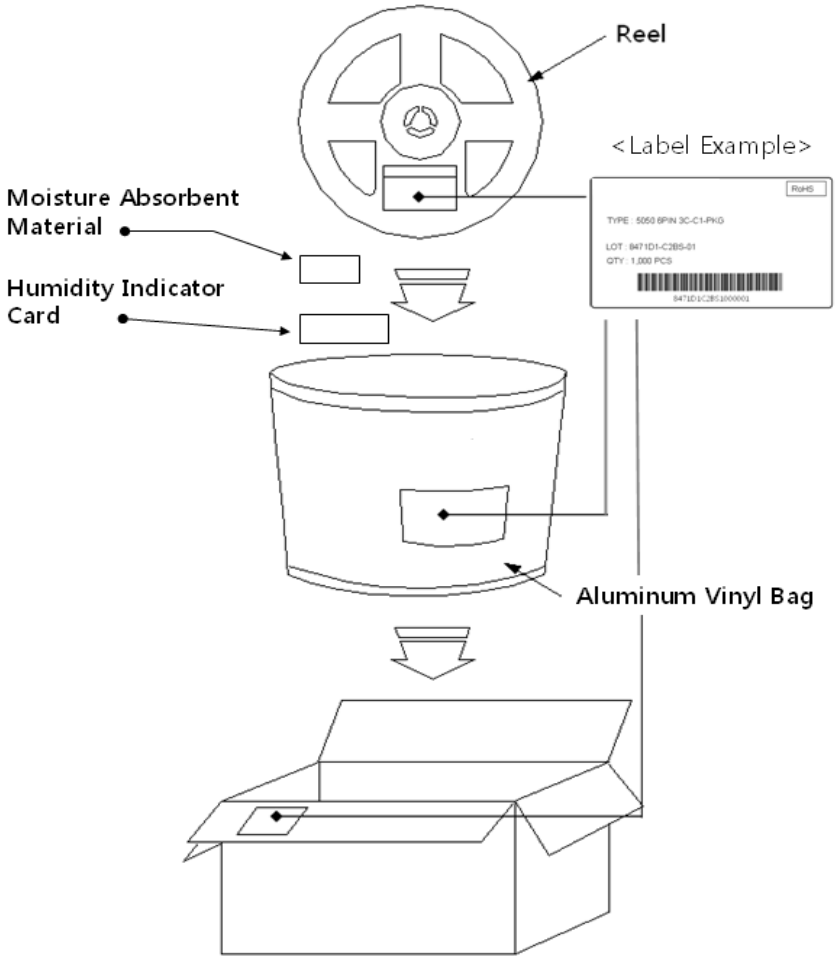
*Note : Reverse current is zener diode model

10. Packing

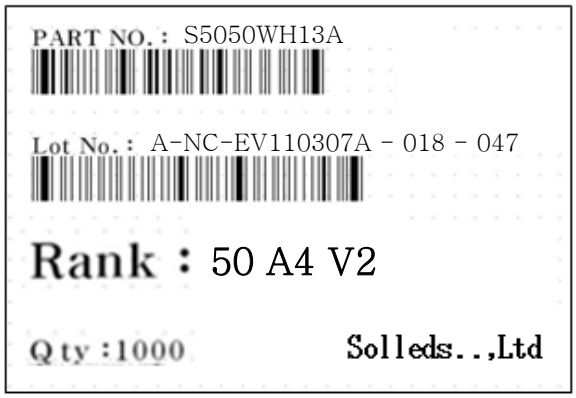


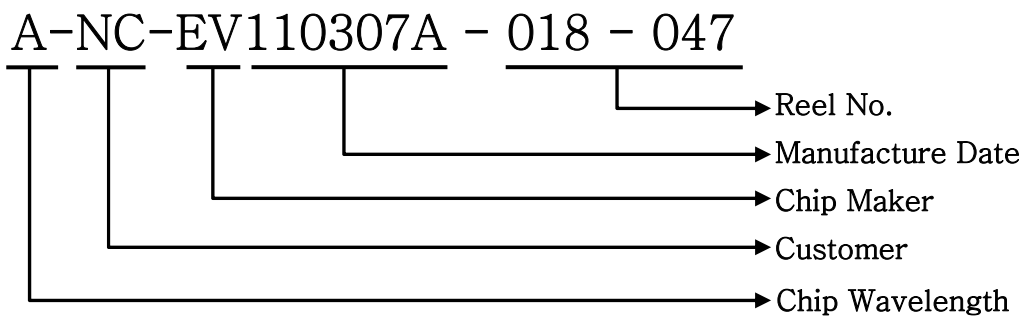
Note :

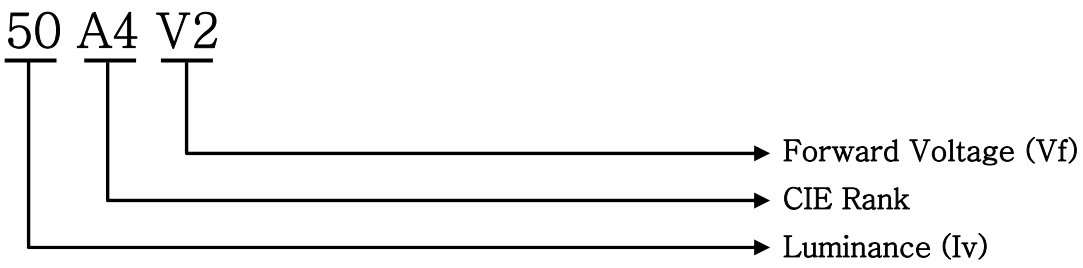
PKG quantity of Reel : Default (1,000ea/reel)



11. Label

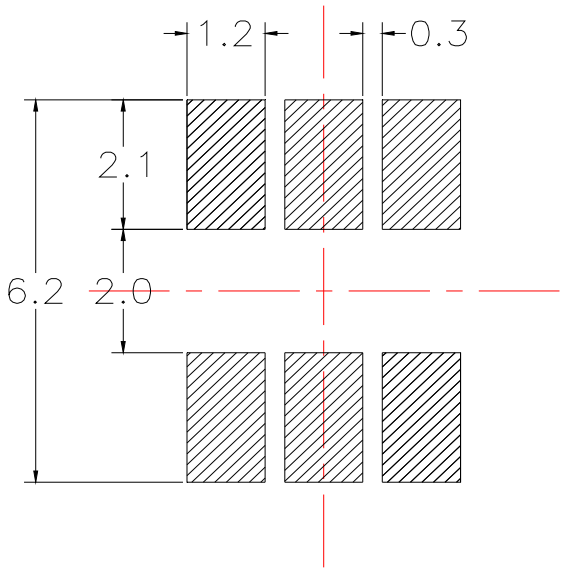




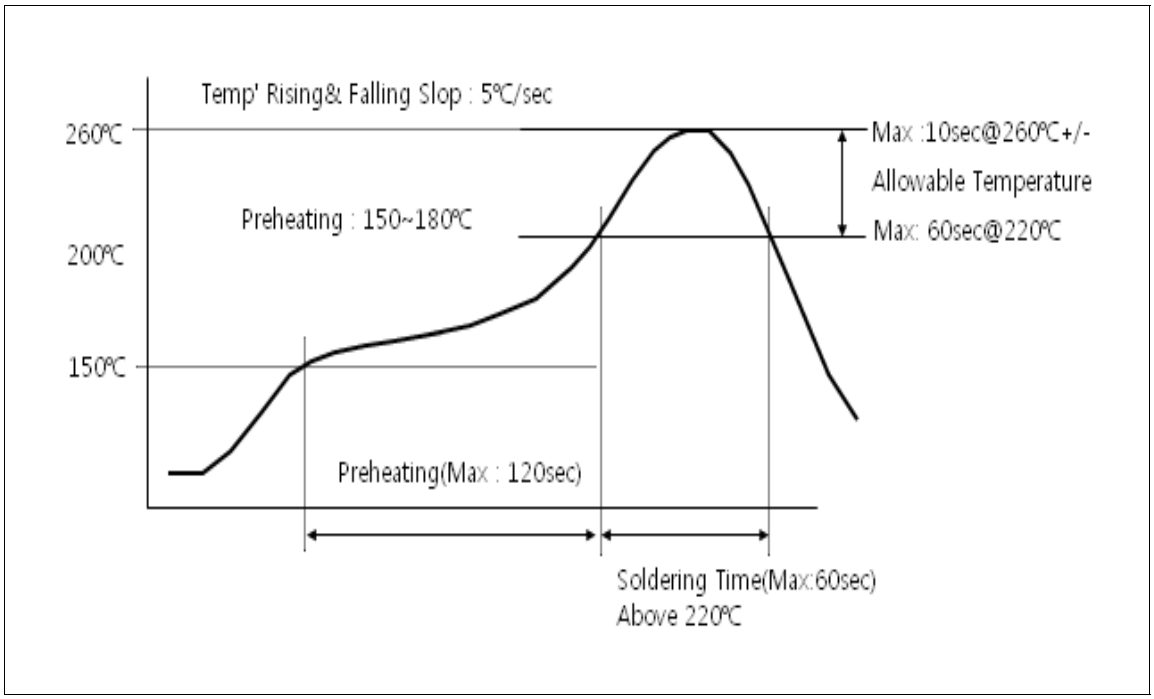


12. Soldering & Recommended Footprint

12.1 Recommender Foot-Print



12.2 Soldering Condition (Pb Free Reflow Condition)



13. PRECAUTION FOR USE

1) Storage

In order to avoid the absorption of moisture, it is recommended to store in a dry box (or a desiccator) with a desiccant. Otherwise, to store them in the following environment is recommended.

Temperature : 5℃ ~ 30℃ Humidity : maxim 65%RH

2) Attention after open.

LED is correspond to SMD, when LED be soldered dip, interfacial separation may affect the light transmission effciency, causing the light intensity to drop.

Attention in followed;

a. After opened and mounted the soldering shall be quickly.

b. Keeping of a fraction

Temperature : 5 ~ 40℃ Humidity : less than 30%

3) It is recommended that user should complete the use of the whole package whthin 12 hours upon unsealing. In the event of incomplete usage, It is advised that user preheat the remaining devices at 60±5℃ for 10-12hours period to use.

4) Any mechanical force or any excess vibration shall not be accepted to apply during cooling process to normal temperature after soldering.

5) Quick cooling shall be avoided.

6) Components shall not be mounted on wraped direction of PCB.

7) Anti radioactive ray design is not considered for the products.

8) This device should not be used in any type of fluid such as water, oil, organic solvent, etc. When washing is required, IPA should be used.

9) When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.

10) LEDs must be stored to maintain a clean atmosphere.

If the LEDs are stored for 3months or more after being shipped from SOLLEDS, a sealed container with a nitrogen atmosphere should be used for storage.

11) The LEDs must be used within one day after opening the moisture proof packing. Repack unused products with anti-moisture packing, fold to close any opening and Then store in a dry place

12) Repack unused products with one day after opening the moisture-proof packing.

13) The appearance and specifications of the product may be modified for improvement without notice.