



SHARLIGHT ELECTRONICS CO., LTD.

SPECIFICATION FOR APPROVAL

Part No. : SLM-5630Nx40-x01-LL

■ Features

1. High Luminous Output
2. RoHs Compliant and Pb Free
3. Silicone Encapsulation
4. ESD \leq 2KV(HBM)
5. Energy Star / ANSI compliant binning structure



■ Application

1. Down light
2. PAR light
3. Spot light
4. General lighting
5. Architectural lighting

■ Product Selection Guide

Color	Part No.	CRI	Lumen Performance
Cool White (ANSI 5500)	SLM-5630NW40-A01-LL	\geq 70	55
Neutral White (ANSI 4000)	SLM-5630NS40-A01-LL	\geq 70	55
Warm White (ANSI 3000)	SLM-5630NY40-A01-LL	\geq 70	50

Color	Part No.	CRI	Lumen Performance
Cool White (ANSI 5500)	SLM-5630NW40-D01-LL	\geq 80	55
Neutral White (ANSI 4000)	SLM-5630NS40-D01-LL	\geq 80	55
Warm White (ANSI 3000)	SLM-5630NY40-D01-LL	\geq 80	50

Note:

Color Rendering index measurement tolerance: \pm 5%

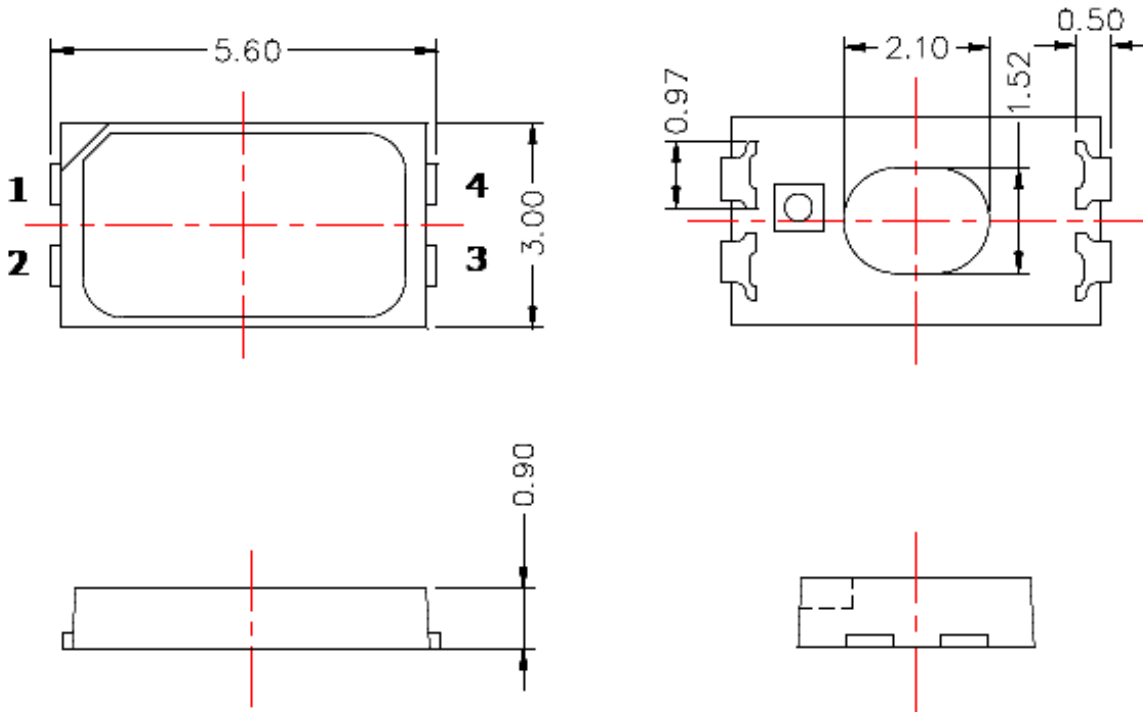


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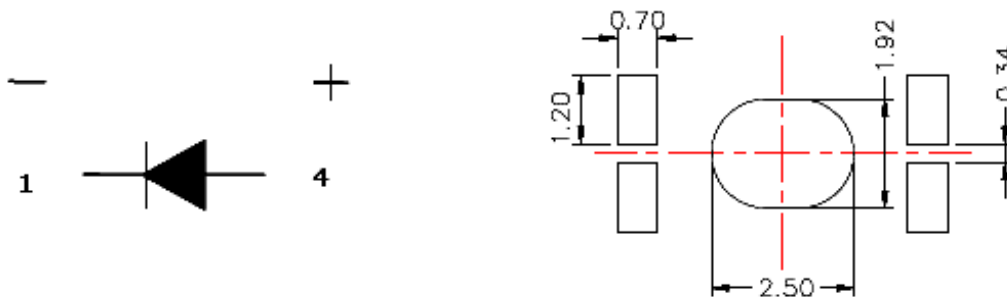
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Package Dimensions



Solder pad



Note:

1. Solder pads are labeled + and - to denote positive and negative respectively
2. Drawings are not to scale
3. All dimensions are all in millimeter
4. All dimensions without tolerance are for reference only
5. Specifications are subject to change without notice



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Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation	PD	576	mW
Forward Current (DC)	IF	160	mA
Peak Forward Current *	IFP	200	mA
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-40~+85°C	
Storage Temperature	Tstg	-40~+100°C	
Soldering Temperature	Tsld	Reflow Soldering:260 °C/10sec Hand Soldering:350°C/3sec	

* Pulse width \leq 0.1msec. duty \leq 1/10

Luminous Flux Characteristics (Tj=25°C)

Color	Part No.	Luminous Flux (lm)			Condition
		Min	Type	Max	
Cool White	SLM-5630NW40-A01-LL	45	55	/	IF=150mA
Neutral White	SLM-5630NS40-A01-LL	45	55	/	IF=150mA
Warm White	SLM-5630NY40-A01-LL	40	50	/	IF=150mA

Color	Part No.	Luminous Flux (lm)			Condition
		Min	Type	Max	
Cool White	SLM-5630NW40-D01-LL	40	50	/	IF=150mA
Neutral White	SLM-5630NS40-D01-LL	40	50	/	IF=150mA
Warm White	SLM-5630NY40-D01-LL	35	45	/	IF=150mA

Note:

- Maintains a tolerance of $\pm 7\%$ on luminous flux measurements.
- Parts are tested in pulsed conditions, Pulse width is 10 ms at rated test current.



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■ Optical Characteristics (Tj=25°C)

Color	Part No.	Color Temperature			Typical View Angle (Degrees) $2\theta_{1/2}$
		Min	Type	Max	
Cool White	SLM-5630NW40-x01-LL	/	5500	/	120
Neutral White	SLM-5630NS40-x01-LL	/	4000	/	120
Warm White	SLM-5630NY40-x01-LL	/	3000	/	120

Note:

1. Refer to Flux Characteristic Table for test current data.
2. Parts are tested in pulsed conditions, Pulse width is 10 ms at rated test current.
3. Viewing angle $2\theta_{1/2}$ is the off axis angle from emitter the centerline where the radiometric intensity is $1/2$ of the peak value.

■ Electrical Characteristics

Color	Part No.	Forward Voltage VF(V)			Condition
		Min	Type	Max	
Cool White	SLM-5630NW40-x01-LL	2.9	3.3	3.6	IF=150mA
Neutral White	SLM-5630NS40-x01-LL	2.9	3.3	3.6	IF=150mA
Warm White	SLM-5630NY40-x01-LL	2.9	3.3	3.6	IF=150mA

Note:

1. Maintains a tester tolerance of ± 0.05 V on forward voltage measurements.
2. Parts are tested in pulsed conditions, Pulse width is 10 ms at rated test current.

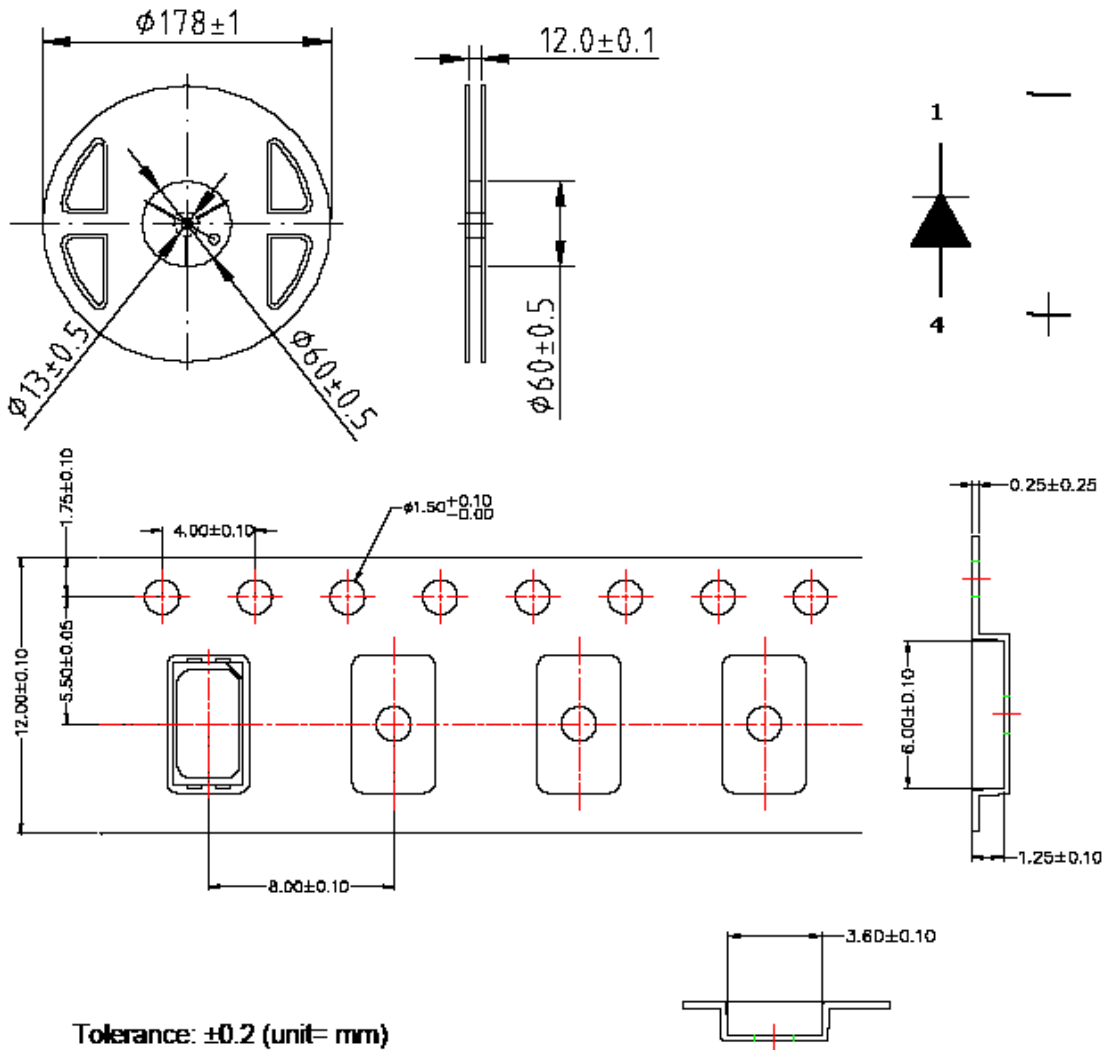


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Taping Dimension (unit= mm)



Tolerance: ± 0.2 (unit= mm)
Quantity: 1500 pcs/Reel

Label Explanation

BIN CODE: xxx-xxx-xxx

a b c

a: Flux(lm)

b: V_f (V)

c: Chromaticity Bin

MODEL:	xxx-xxxxxxx	1103011111
LOT NO:	xxxx-xxxxxxx	1103011111
BIN CODE:	xxx-xxx-xxx	
Flux[lm]:	xxxx ~	xxxx
V_f [V]:	xxx ~	xxx
CIE Range[K]:	xxxxx ~	xxxxx
QTY:	xxxx	



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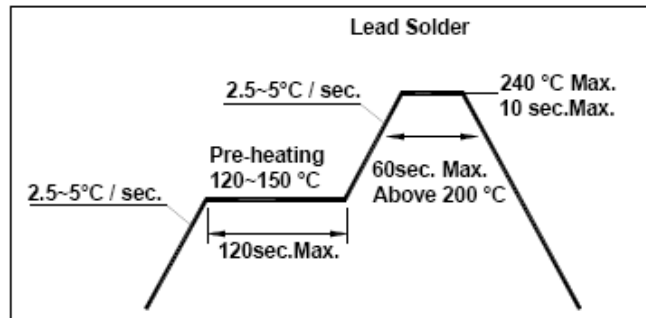
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Soldering

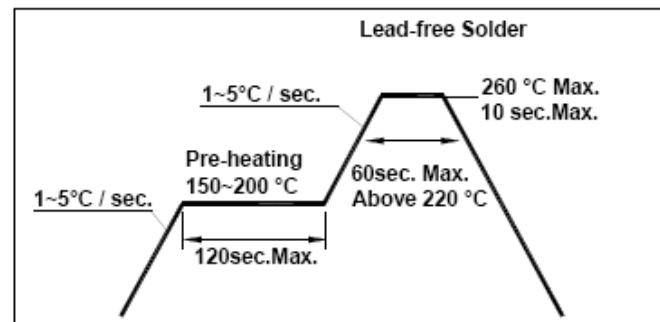
(1) Lead Solder

Lead Solder	
Pre-heat	120~150°C
Pre-heat time	120 sec. Max.
Peak-Temperature	240°C Max.
Soldering time Condition	10 sec. Max.



(2) Lead-Free Solder

Lead Free Solder	
Pre-heat	150~200°C
Pre-heat time	120 sec. Max.
Peak-Temperature	260°C Max.
Soldering time Condition	10 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 mounter, the picking up nozzle that does not affect the silicone resin should be used.

Note: In case that the soldered products are reused in soldering process, we don't guarantee the products.



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■ Reliability Test Items and Conditions

The reliability of products shall be satisfied with items listed below.

NO	Item	Test Condition		Test Hours / Times	Criteria
		Temp./Humidity	I _F (mA)		I _F @ 150mA
1	High Temperature Storage	Ta = 100°C	--	1000 hrs	I _V > 70% V _F < 20%
2	Low Temperature Storage	Ta = 40°C	--	1000 hrs	
3	Temperature Humidity Storage	Ta = 85°C/ 85%RH	--	1000 hrs	
4	Steady State Operating Life of Low Temperature	Ta = 40°C	150	1000 hrs	
5	Steady State Operating Life	Ta = 25°C/ Room Humidity	150	1000 hrs	
6	Steady State Operating Life of High Temperature	Ta = 85°C	150	1000 hrs	
7	Steady State Operating Life of High Humidity Heat	Ta = 60°C/ 60%RH	150	1000 hrs	
8	Thermal Shock	-40°C,20min. ~ 100°C,20min. 10 sec		300 cycles	
9	Thermal Cycle	-40°C,15min. ~ 100°C,15min. 5 min.		300 cycles	
10	Reflow Soldering	T _{slid} = 260°C,10SEC.(Max.)		1 times	

*

Sampling for each test item: 22(pcs.)

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EDITOR : 周素華 04-18-11

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■ 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°C~30°C Humidity: maximum 70%RH

2. Attention after open.

LED is correspond to SMD, when LED be soldered dip, interfacial separation may affect the light transmission efficiency, causing the light intensity to drop. Attention in followed; Keeping of a fraction

Temperature: : 5°C~40°C Humidity: less than 10%

3. In the case of more than 1 week passed after opening or change color of indicator on desiccant, components shall be dried 10-12hr. at 60±5°C.

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 warped 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. The LEDs must be soldered within seven days after opening the moisture-proof packing.

11. Repack unused products with anti-moisture packing, fold to close any opening and then store in a dry place.

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

13. Please do not mold this product into another resin(epoxy, urethane, etc)and do not handle this product with acid or sulfur material in sealed space.



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■ Handling of Silicone Resin LEDs

1. During processing, mechanical stress on the surface should be minimized as much as possible. Sharp objects of all types should not be used to pierce the sealing compound.
2. In general, LEDs should only be handled from the side. By the way, this also applies to LEDs without a silicone sealant, since the surface can also become scratched.
3. When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that mechanical pressure on the surface of the resin must be prevented. This is assured by choosing a pick and place nozzle which is larger than the LED's reflector area.
4. Silicone differs from materials conventionally used for the manufacturing of LEDs. These conditions must be considered during the handling of such devices.
Compared to standard encapsulants, silicone is generally softer, and the surface is more likely to attract dust.
As mentioned previously, the increased sensitivity to dust requires special care during processing. In cases where a minimal level of dirt and dust particles cannot be guaranteed, a suitable cleaning solution must be applied to the surface after the soldering of components.
5. Suggests using isopropyl alcohol for cleaning. In case other solvents are used, it must be assured that these solvents do not dissolve the package or resin. Ultrasonic cleaning is not recommended. Ultrasonic cleaning may cause damage to the LED.
6. Please do not mold this product into another resin(epoxy, urethane, etc) and do not handle this product with acid or sulfur material in sealed space.

■ Static Electricity

1. Static electricity or surge voltage damages the LEDs.
It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
2. All devices, equipment and machinery must be properly grounded. It is recommended that precautions be taken against surge voltage to the equipment that mounts the LEDs.
3. When inspecting the final products in which LEDs were assembled, it is recommended to check whether the assembled LEDs are damaged by static electricity or not. It is easy to find static-damaged LEDs by a VF test at a lower current (below 6mA is recommended).
4. Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower.
Criteria : (VF>2.0V at IF=3mA)

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