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## Snowdragon Industrial Co.,Ltd

### DATA SHEET

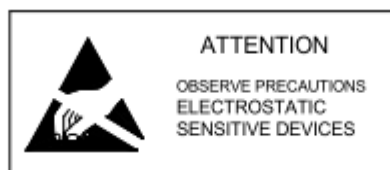
**MODEL N.O.: SDS5050TCU-S-AP-A**

**ENG. N.O.: 120203001**

**Description:**

- **Shape: 5.0\*5.4\*1.6mm Surface Mount LEDs**
- **Emitting Color: RGB**
- **Lens Color : Clear Lucite**
- **Viewing Angle: 120°**
- **Chip Material: AlGaInP&InGaN**

PREPARED BY	CHECKED BY	APPROVED BY
CUSTOMER APPROVED SIGNATURES		



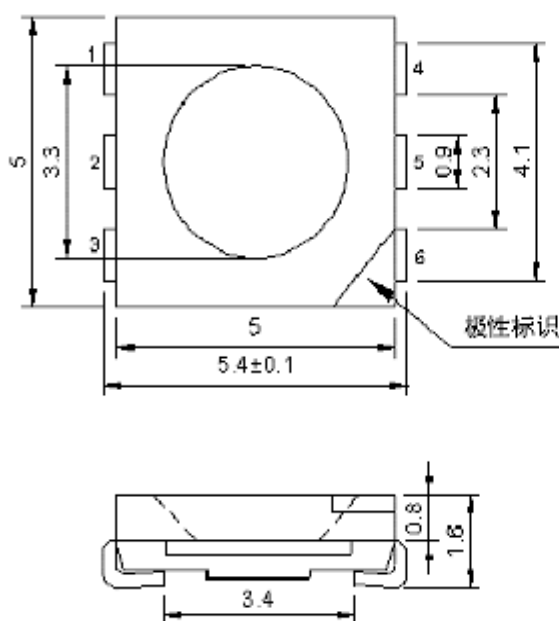
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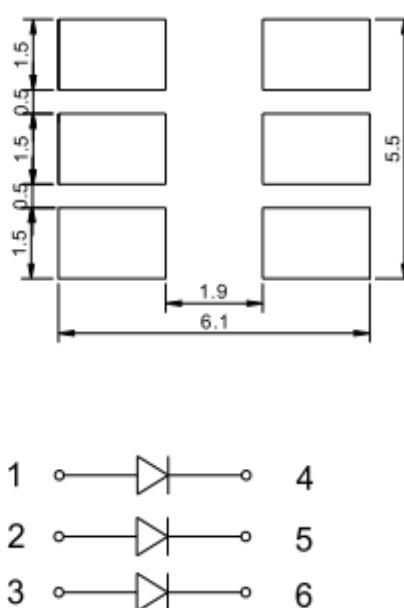
Applications

- Indicator light
- LED indoor lighting and outdoor lighting
- LCD backlight
- Decorative Lighting
- Auto Meter LED decorative lighting

Package Dimensions



Recommended Soldering Pattern



Note:

1. All dimensions are in mm
2. If no special instructions tolerance range ± 0.1mm
3. Described in the technical data sheet are subject to change without notice.
4. The semiconductor device is static sensitive components, wear protective equipment pick up static electricity, all the machines, please do ground handling equipment.



Electrical / Optical Characteristics at TA=25°C

color	Wavelength (nm)	luminous intensity(mcd)			I <sub>c</sub> countercurrent (uA)	test condition	Lighting Angle (Typ.)	direct voltage (Typ.)
	(Typ.)	Min.	Typ.	Max.	V <sub>R</sub> = 5V    I <sub>c</sub>			
Red	620-623	500	—	650	10	I <sub>F</sub> = 20mA	120	1.9-2.1
Blue	464-467	170	—	220	10	I <sub>F</sub> = 20mA	120	3.0-3.2
Green	520-523	670	—	870	10	I <sub>F</sub> = 20mA	120	3.0-3.2

Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Maximum size	Units
Power dissipation	PD	110	mW
Reverse Current	IF	30	mA
Peak Forward Current	IFP	100	mA
Reverse Voltage	VR	5	V
Operating Temperature	-40°C To +85°C		
Storage Temperature	-40°C To +85°C		

Pulse Width. ≤ 0.1msec ; Duty Cycle ≤ 1/10

Important Notes :

- 1) All ranks will be included per delivery, rank ratio will be determined by Snowdragon.
- 2) Tolerance of measurement of luminous intensity is ±15%.
- 3) Tolerance of measurement of dominant wavelength is ±1nm.
- 4) Tolerance of measurement of Vf is ±0.05 V.
- 5) Packaging methods are available for selection, please refer to PACKAGING STANDARD.
- 6) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.

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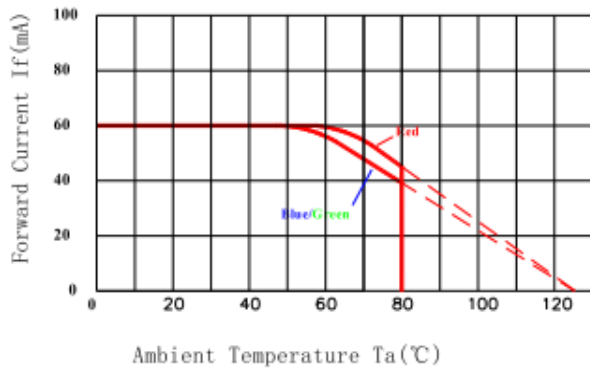


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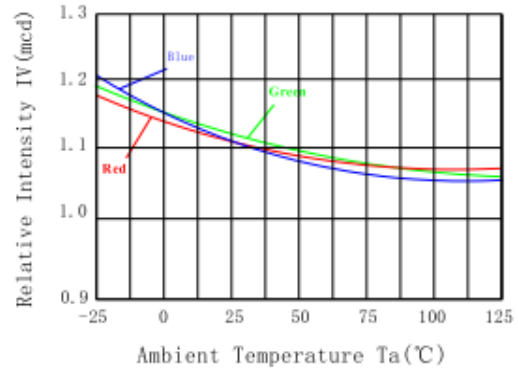
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Typical light - electric curve:

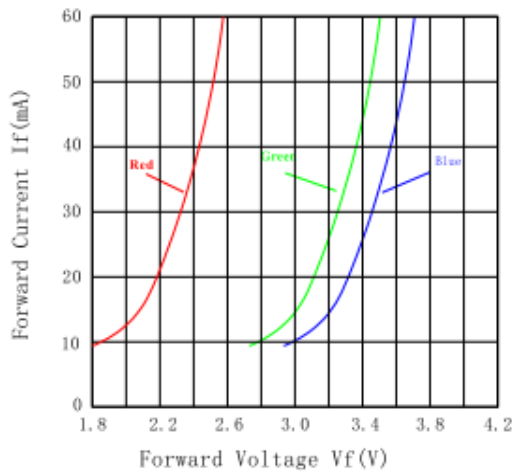
Forward Current vs. Ambient Temperature



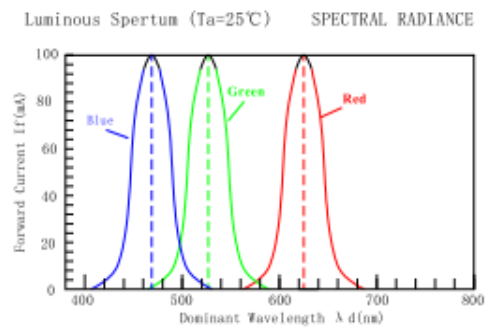
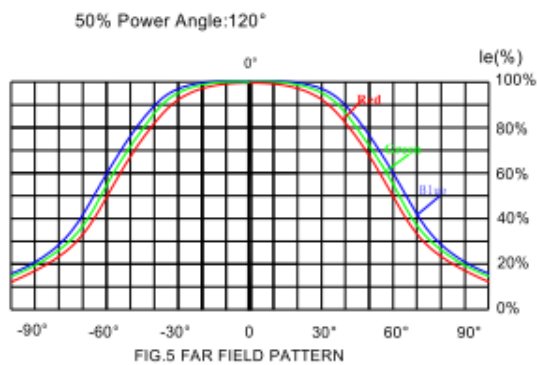
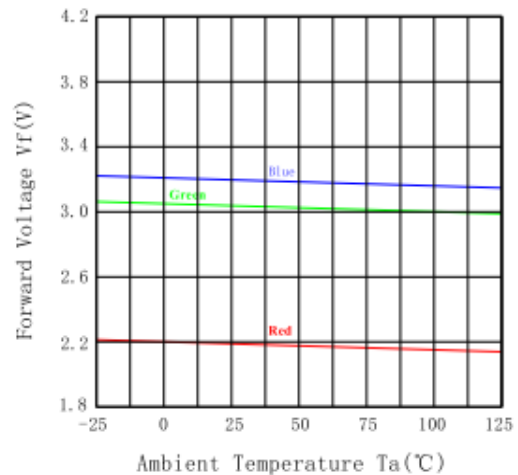
Relative Intensity vs. Ambient Temperature



Forward Current vs. Forward Voltage



Forward Voltage vs. Ambient Temperature



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**Caution:**

The main purpose of this document to the customers and users about how to better use our TOPLED products. For use in general, TOPLED the same with the average usage of the semiconductor. When using TOPLED product, please observe the following to protect the product to use.

**1. Cleaning**

Cleaning methods do not use an unknown chemical liquid cleaning products: unknown liquid-chemicals may damage the product. When cleaning is necessary, the product immersed in alcohol, in normal room temperature of less than 1 minute and air dry for 15 minutes, then get started.

**2. Moisture proof packaging**

Anti-humidity packaging products in order to avoid transportation and storage of moisture in the product packaging is packed with moisture-proof aluminum bags, and which contains desiccant bags, desiccant bags packed the main play control of the humidity.

**3. Storage**

A. sealed bags stored in conditions of temperature  $<40\text{ }^{\circ}\text{C}$ , humidity  $<90\%$  RH, storage period of 12 months. When more than shelf life, the need to re-baking dehumidification.

B. Before the open packaging, check whether the bags leak, if there is leakage phenomenon, re-baked before use.

C. After opening, please use the following conditions: temperature  $<30\text{ }^{\circ}\text{C}$ , humidity  $60\%$  RH below; If you use longer than 24 hours, subject to the following baking before use.

D. Curing conditions: oven at a temperature of products in the  $70\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$ ; relative humidity  $\leq 10\%$  RH, time: 24 hours. E. out from the bag and baked products. In the baking process can not open the oven door.

**4. ESD&EOS**

A. ESD electrostatic discharge and impact of current (ESD) or pulse current (EOS), may damage SMD LED.

B. Must wear a wrist strap, to wear anti-static-static shoes or gloves, can the SMD LED production.

C. All mechanical equipment must be grounded.

**5. Heat treatment**

SMD product heat treatment heat treatment in SMD circuit design, careful consideration, the current should reduce the specific reference to the appropriate specifications of each product's current book - the temperature corresponding to the curve.



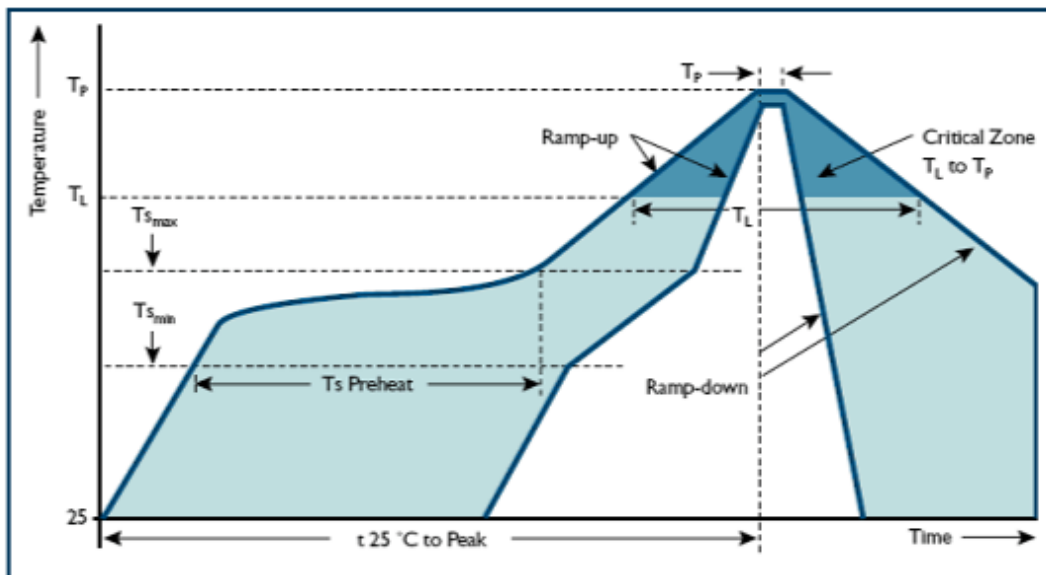
6. Welding

Manual welding operations:

- A. Use the soldering iron must be less than 25W, soldering iron temperature must be kept below 315 °C, soldering time must not exceed 2 seconds.
- B. Iron can not come into contact with epoxy resin (silicone) section.
- C. Once when welding, to let it cool down to temperatures below 40 °C can packaging.

Reflow soldering operation:

- A. Reflow temperature profile had Refer to the following:



Solder: Lead solder	Solder: lead-free solder
The temperature rise slope Tsmax to TP = 4 °C / s maximum	The temperature rise slope Tsmax to TP = 4 °C / s maximum
Preheating temperature Tsmm = 100 °C ~ 150 °C	Preheating temperature Tsmm = 150 °C ~ 200 °C
Preheating time Tsmm to Tsmax = 100s maximum	Preheating time Tsmm to Tsmax = 100s max.
Ramp-down rate 6 °C / s maximum	Ramp-down rate 6 °C / s maximum
Peak temperature TP = 230 °C maximum	Peak temperature TP = 250 °C maximum
At the time of peak temperature must not exceed ± 5 °C 10s	At the time of peak temperature must not exceed ± 5 °C 10s
More than 183 °C temperature could not exceed 80s.	More than 217 °C of temperature for longer than 80s.

- B. Do not weld the welding surface after modification, so if you want to modify the product must not harm the premise.
- C. reflow should be done at a time, not min repeated.
- D. In the welding, the circuit board packaging can not be immediately, to let it cool before packaging.

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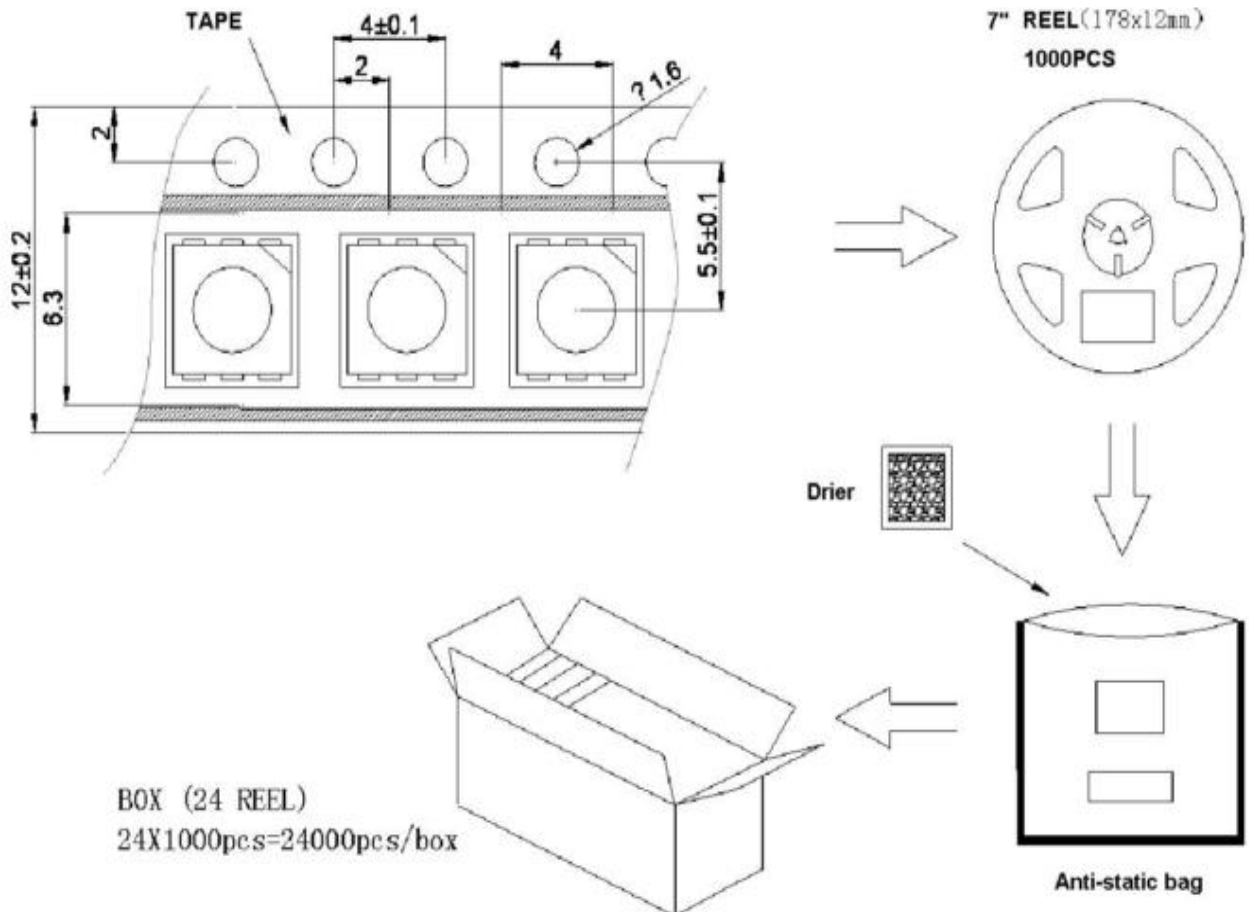


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#### 7. Package

- A) Box is not waterproof, and must make them away from water and moisture.
- B) The first hole with a package using the LED, then ordinary bags or anti-static bag LED, the last use of cardboard boxes for packaging.
- C) The use of cartons during transport to prevent collision damage due to external LED.
- D) The number of each volume of packaging 2000+4 (spare) pcs.
- E) 14 bags used for packaging into cartons.



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