

SPECIFICATIONS

FOR TOPLIGHT 5.00*5.00 SMD

MODEL: **TOPLIGHT
TOP-5050BUW-S**



SHANGHAI TOPLIGHT TECHNOLOGY CO., LTD.

www.ledtoplight.com.cn



TECHNICAL DATA SHEET

TOP-5050BUW-S <FOR TOPLIGHT 5.00*5.00 SMD>

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PRODUCT INTRODUCTION

FEATURES

- ※ Single color.
- ※ Viewing angle:120 deg
- ※ The materials of the LED dice is InGaN
- ※ RoHS compliant lead-free soldering compatible

DESCRIPTION

- ※ The White LED which was fabricated using a blue chip and the phosphor

APPLICATIONS

- ※ Optical indicator
- ※ Indoor display
- ※ Interior automotive lighting
- ※ Backlight for LCD, switch and Symbol, display
- ※ Light pipe application
- ※ General use

| PART NO. | SIZE | Dice | Lens Type |
|--------------------|------------------|------------------|-----------------|
| TOPLIGHT-5050BUW-S | 5.00*5.00*1.60mm | WHITE (InGaN) | Yellow Diffused |

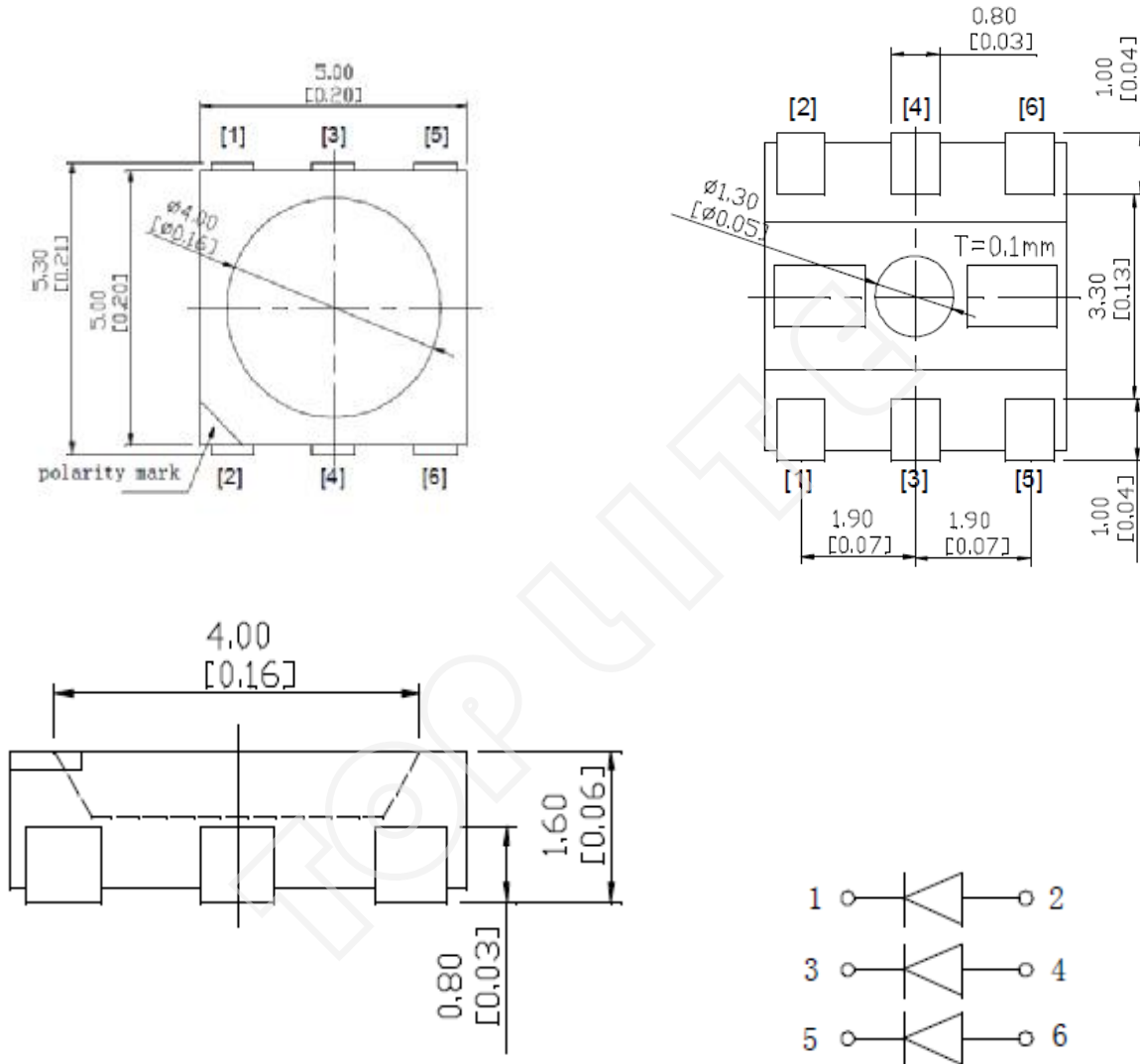


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PACKAGE DIMENSIONS



NOTES:

1. All dimension units are millimeters.
2. All dimension tolerance is ± 0.15 mm unless otherwise noted.



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ELECTRICAL/OPTICAL CHARACTERISTIC (1)

ABSOLUTE MAXIMUM RATINGS (Ta=25° C)

| PARAMETER PER SEGMENT | SYMBOL | MAX | UNIT |
|-------------------------------|------------------|-------------|------|
| Reverse Voltage | V _R | 5 | V |
| Forward Current | I _F | 30 | mA |
| Pulse Forward Current | I _{FP} | 100 | mA |
| Electrostatic Discharge (HBM) | ESD | 1000(HBM) | V |
| Operating Temperature Range | T _A | - 20 ~ + 85 | °C |
| Storage Temperature Range | T _{STG} | - 35 ~ + 85 | °C |

ELECTRICAL-OPTICAL CHARACTERISTICS (Ta=25° C)

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITIONS |
|-------------------------------------|-------------------|------|------|------|------|----------------------|
| Luminous Intensity | I _V | 4750 | 5625 | 6500 | mcd | I _F =20mA |
| Forward Voltage | V _F | 2.90 | 3.20 | 3.50 | V | I _F =20mA |
| Viewing angle at 50% I _v | 2θ _{1/2} | - | 120 | - | Deg | I _F =20mA |
| Luminous flux | Φ | - | 18.0 | - | lm | I _F =20mA |
| Color Temperature | T _C | - | 6500 | - | K | I _F =20mA |
| Color Rendering Index | CRI | 70 | - | - | - | I _F =20mA |
| Reverse Current | I _R | - | - | 10 | uA | V _R =5v |

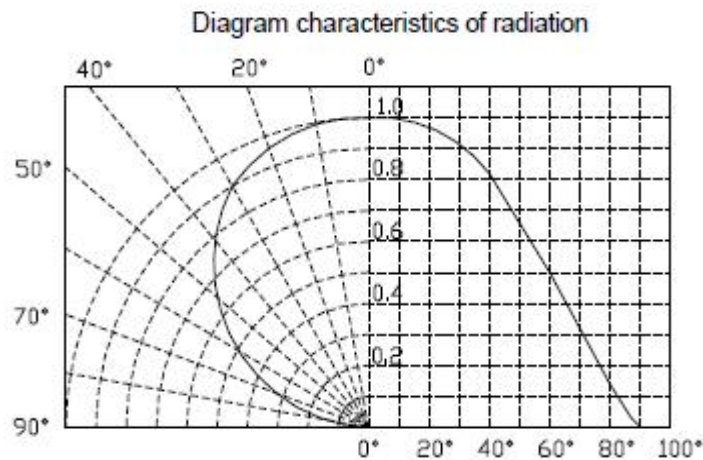
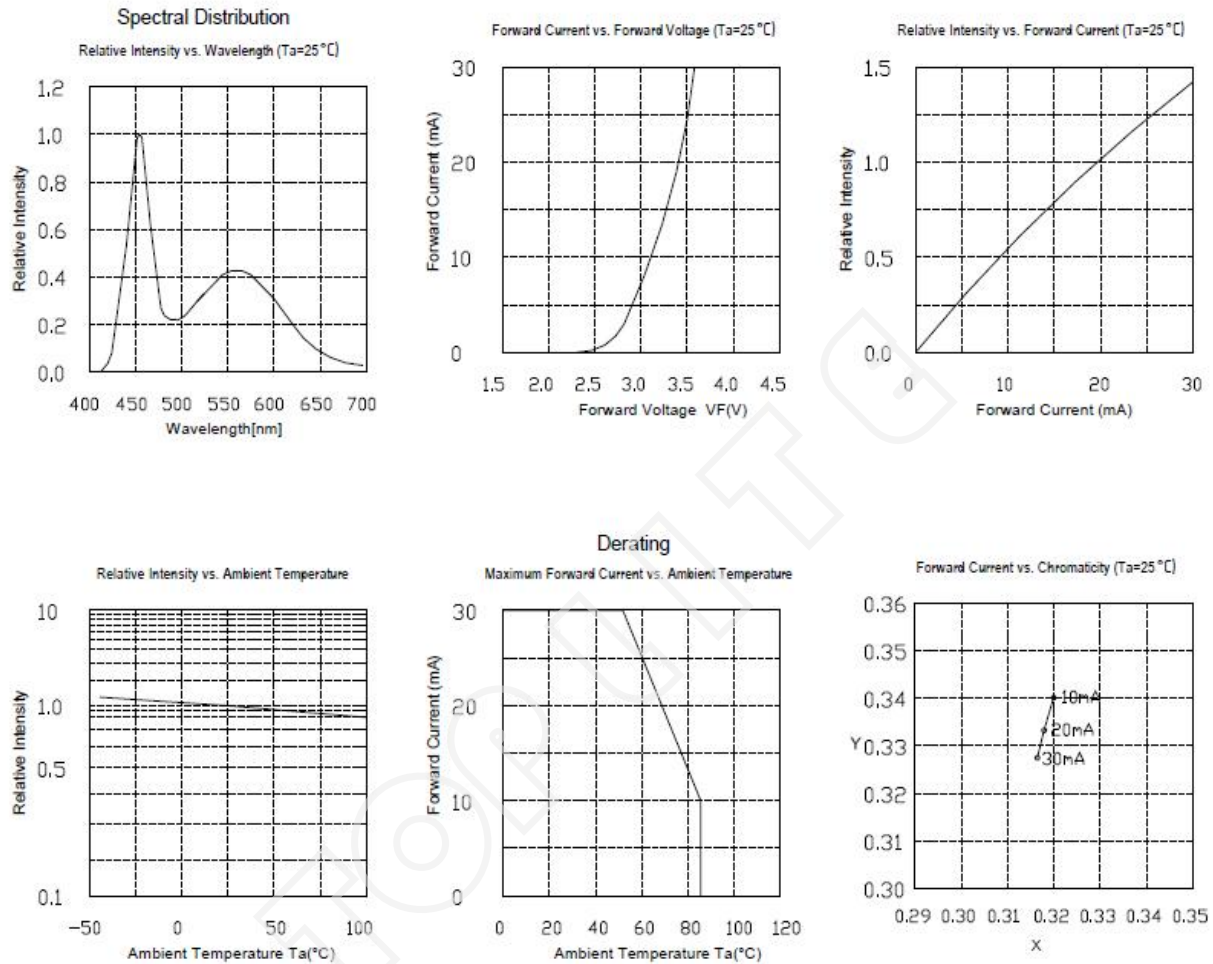


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ELECTRICAL/OPTICAL CHARACTERISTIC (2)





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QUALITY CONTROL AND ASSURANCE

| No. | TEST ITEM | Ref.Standard | Test Condition | Test Hours/Cycles |
|-----|--------------------------------|--------------|---|-------------------|
| 1 | Relow | JESD22-B106 | Temp: 260°C max T=10 sec | 3 times |
| 2 | Temperature Cycle | JESD22-A104 | 100°C±5°C 30 min. ↑ ↓ 5 min -40°C±5°C 30 min. | 100 Cycles |
| 3 | Thermal Shock | JESD22-A106 | 100°C±5°C 5 min. ↑ ↓ -40°C±5°C 5 min. | 100 Cycles |
| 4 | High Temperature Storage | JESD22-A103 | Temp:100°C±5°C | 1000Hrs. |
| 5 | Low Temperature Storage | JESD22-A119 | Temp:-40°C±5°C | 1000Hrs. |
| 6 | DC Operating Life | JESD22-A108 | Ta=25°C±5°C IF=20mA | 1000Hrs. |
| 7 | High Temperature High Humidity | JESD22-A101 | 85°C±5°C/ 85%RH IF=5mA | 1000Hrs. |

*The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the refer-enced products. It does not constitute the warranting of industrial property nor the granting of any license.



TECHNICAL DATA SHEET

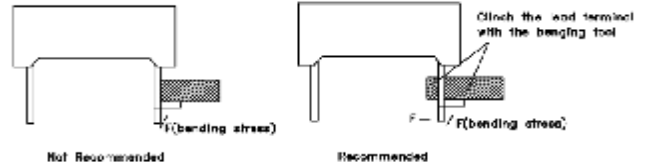
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THROUGH HOLE DISPLAY MOUNTING METHOD

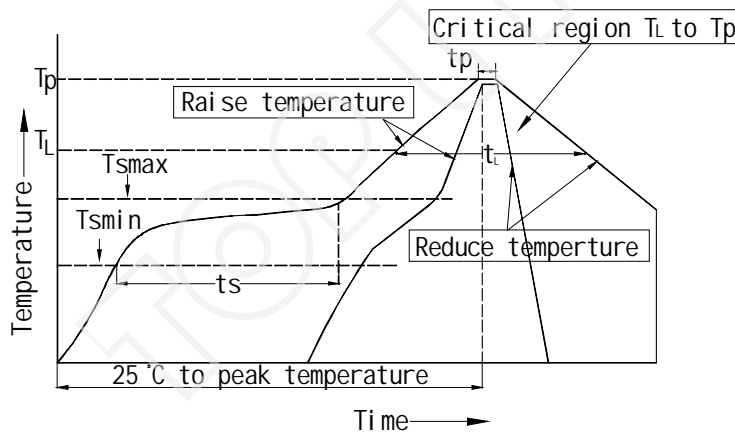
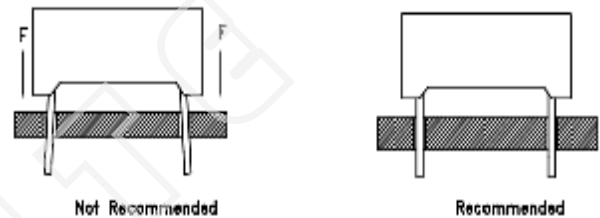
Lead Forming

Do not bend the component leads by hand without proper tools. The leads should be bent by clinching the upper part of the lead firmly such that the bending force is not exerted on the plastic body.



Installation

1. The installation process should not apply stress to the lead terminals.
2. When inserting for assembly, ensure the terminal pitch matches the substrate board's hole pitch to prevent spreading or pinching the lead terminals.



| Distribution characteristics | Lead-free assembly |
|---|--------------------|
| Average rate of raising temperature ($T_{s_{max}}$ to T_p) | Fastest 3°C/s |
| Minimum preheating temperature ($T_{s_{min}}$) | 150°C |
| Highest preheating temperature ($T_{s_{max}}$) | 200°C |
| Preheating time ($t_{s_{min}}$ to $t_{s_{max}}$) | 60~180s |
| Temperature (T_l) | 271°C |
| The time of keeping above the temperature (T_p) | 60~150s |
| Peak value (t_p) | 260°C |
| The time of actual peak temperature difference within 5°C (t_p) | 20~40s |
| Rate of reducing temperature | Fastest 6°C/s |
| The time from 25°C to peak temperature | Fastest 8min |



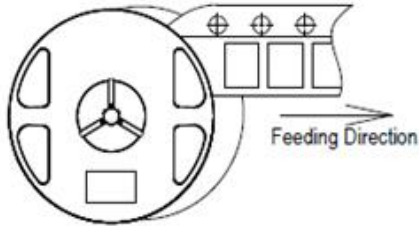
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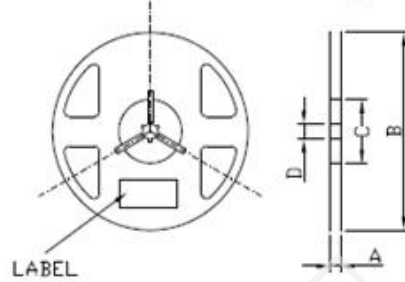
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PACKING QUANTITY SPECIFICATION

• Feeding Direction

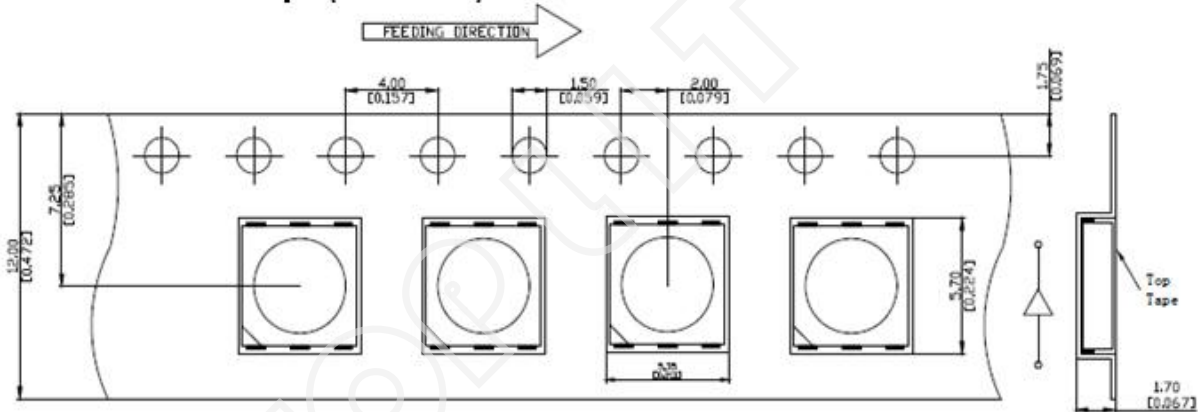


• Dimensions of Reel (Unit: mm)

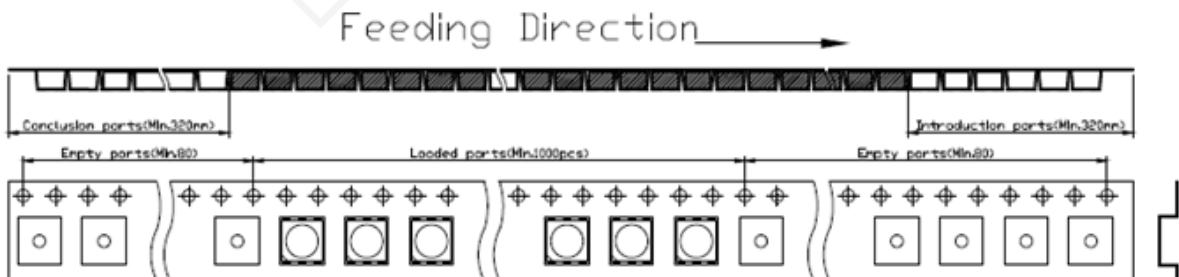


| | |
|---|------------|
| A | 12±0.1mm |
| B | 178±1mm |
| C | 60±1mm |
| D | 13.0±0.5mm |

• Dimensions of Tape (Unit: mm)



• Arrangement of Tape



NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 3,000 pcs/ Reel.