

# ***SPECIFICATIONS***

FOR TOPLIGHT 1.60\*0.80 SMD

MODEL: **TOPLIGHT  
TOP-1608BUW-S**



SHANGHAI TOPLIGHT TECHNOLOGY CO., LTD.

[www.ledtoplight.com.cn](http://www.ledtoplight.com.cn)



## TECHNICAL DATA SHEET

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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-1608BUW-S	1.60*0.80*0.30mm	WHITE (InGaN)	Yellow Diffused

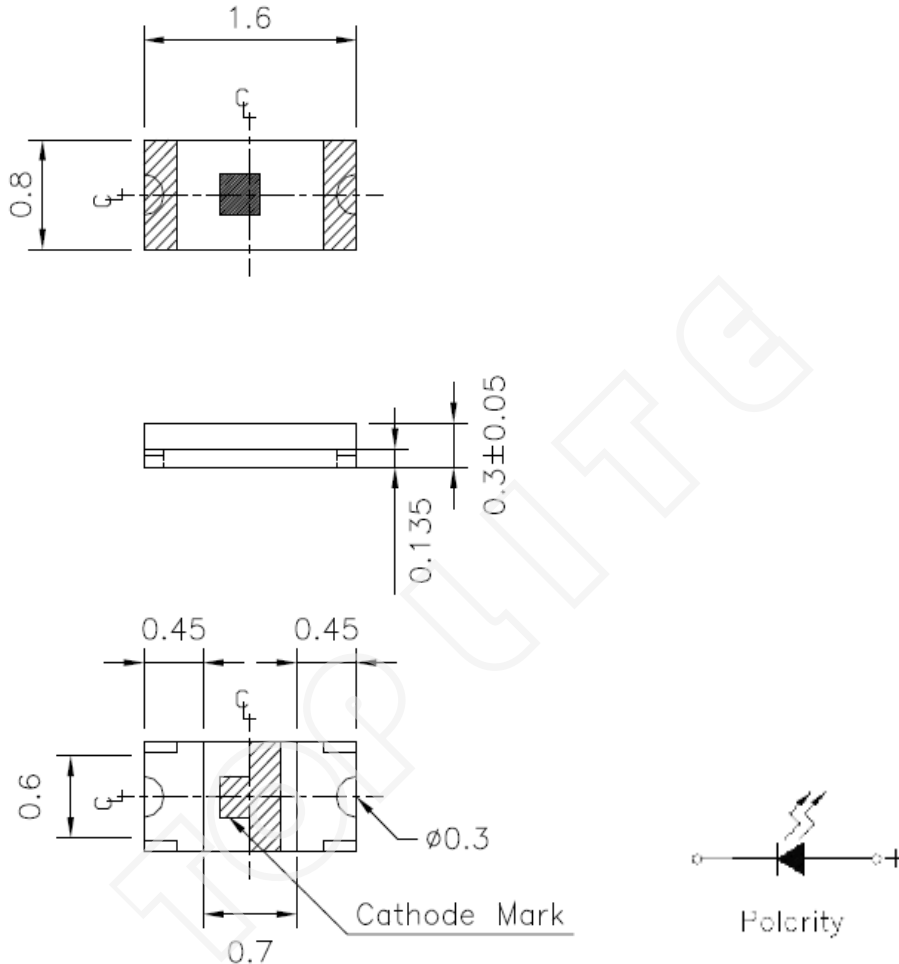


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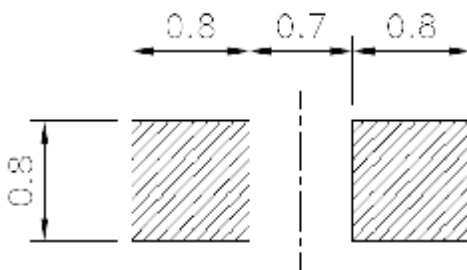
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### PACKAGE DIMENSIONS



Recommended Soldering



#### NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are  $\pm 0.2$ mm (0.008inch) 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 <sub>R</sub>	5	V
Forward Current	I <sub>F</sub>	25	mA
Pulse Forward Current	I <sub>FP</sub>	100	mA
Electrostatic Discharge (HBM)	ESD	1500(HBM)	V
Operating Temperature Range	T <sub>A</sub>	- 40 ~ + 85	°C
Storage Temperature Range	T <sub>STG</sub>	- 40 ~ + 90	°C

#### ELECTRICAL-OPTICAL CHARACTERISTICS (Ta=25° C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Luminous Intensity	I <sub>V</sub>	1900	2050	2200	mcd	I <sub>F</sub> =20mA
Forward Voltage	V <sub>F</sub>	2.60	2.80	3.00	V	I <sub>F</sub> =20mA
Viewing angle at 50% I <sub>v</sub>	2θ <sub>1/2</sub>	-	130	-	Deg	I <sub>F</sub> =20mA
Luminous flux	Φ	6	6.5	-	lm	I <sub>F</sub> =20mA
Color Temperature	T <sub>C</sub>	-	6500	-	K	I <sub>F</sub> =20mA
Color Rendering Index	CRI	70	-	-	-	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	-	-	50	uA	V <sub>R</sub> =5v



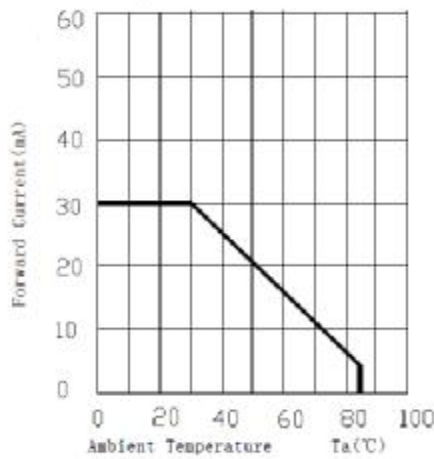
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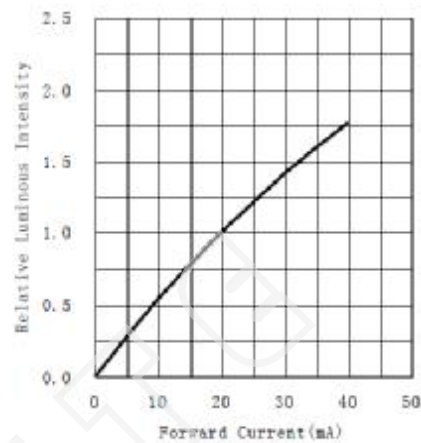
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# ELECTRICAL/OPTICAL CHARACTERISTIC (2)

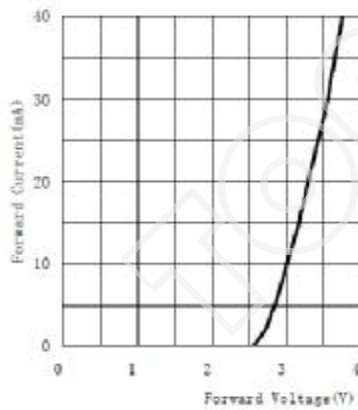
Ambient Temperature VS. Forward Current



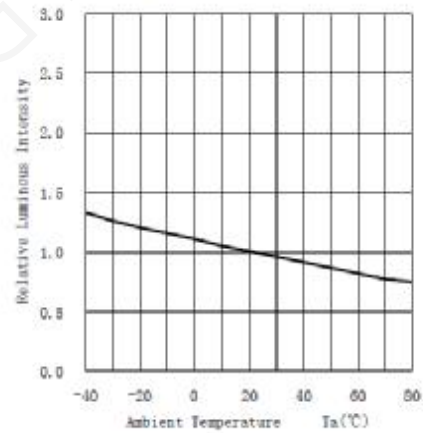
Forward Current VS. Relative Intensity



Forward Voltage VS. Forward Current



Ambient Temperature VS. Relative Intensity



Relative spectral emission

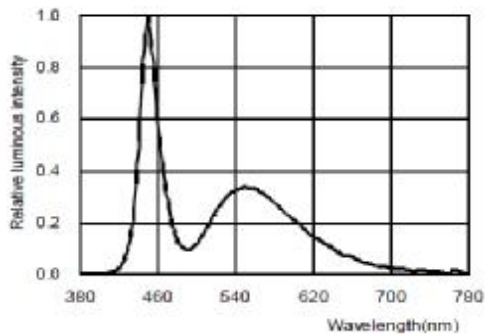
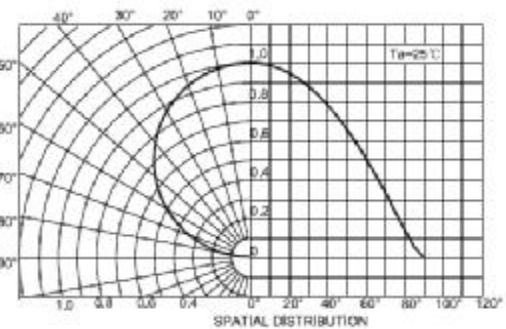


Diagram characteristics of radiation





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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.



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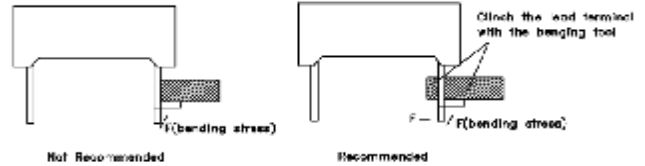
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# THROUGH HOLE DISPLAY MOUNTING METHOD

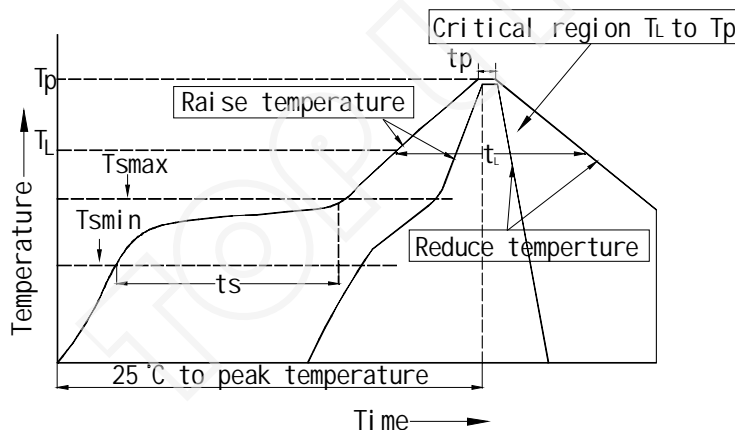
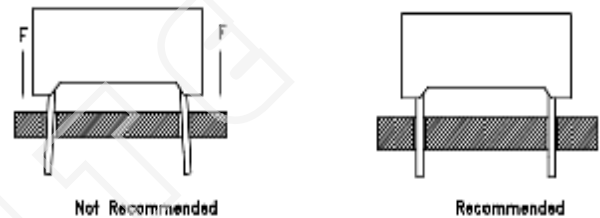
## Lead Forming

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

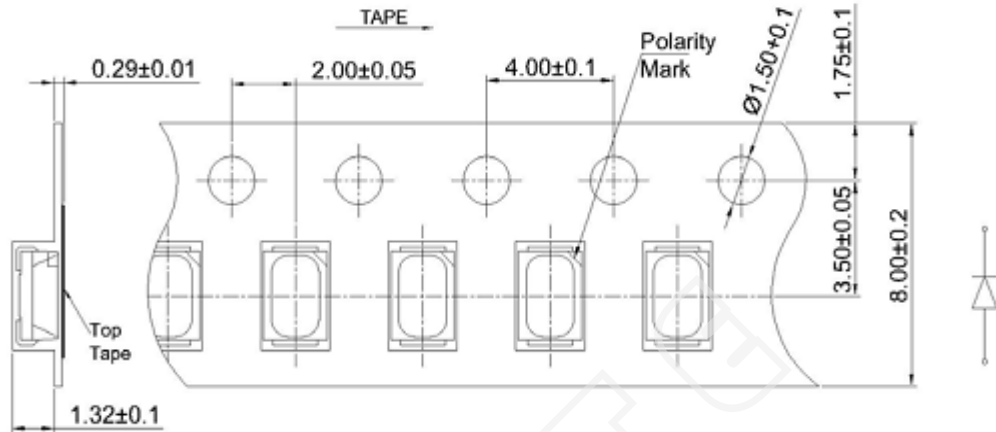


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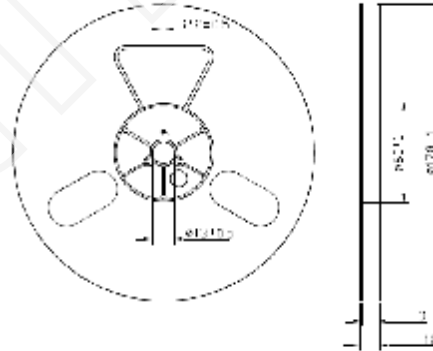
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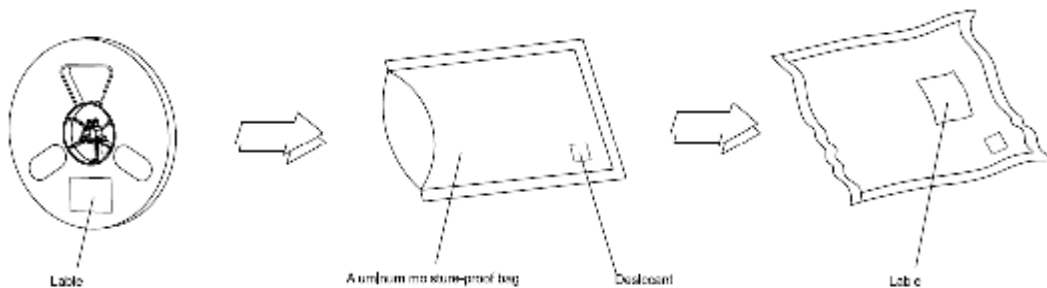
## PACKING QUANTITY SPECIFICATION



### Reel Dimensions



### Moisture Resistant Packaging



## 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.



TOPLITE