



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

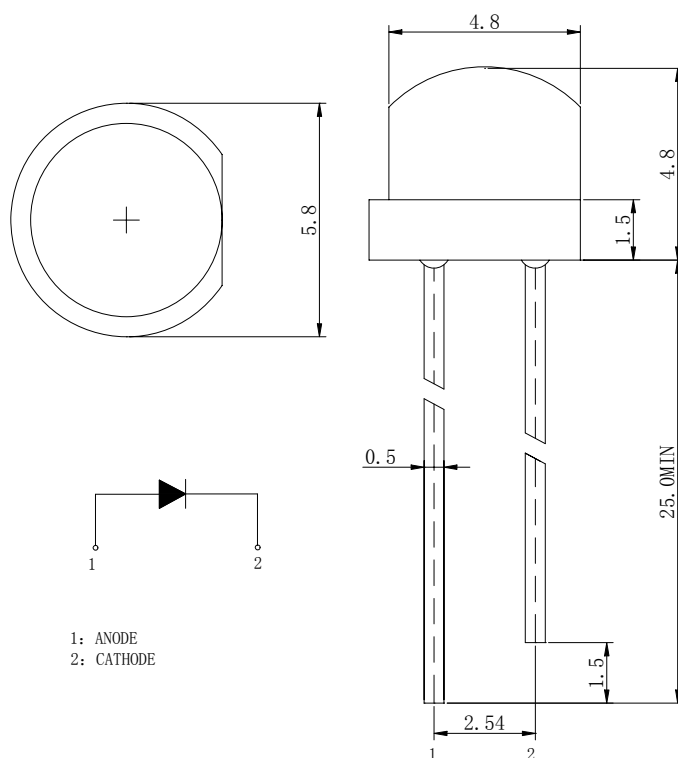
## LED BOMBIN BLANCO CALIDO



### Features

- $\phi 4.8$  HAT STRAW LAMP LED
- LOW POWER CONSUMPTION.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE: 500PCS / BAG.

### Package Dimensions



1: ANODE  
2: CATHODE

### Description

This devices are made with TS InGaN.

Torlerance Grade	Dimension Torlerance (UNIT:mm)			
	0.5~3	3~6	6~30	30~120
Medium(m)	$\pm 0.1$	$\pm 0.1$	$\pm 0.2$	$\pm 0.3$
Chip		Lens Color		
Material	Emitting Color	Water Clear		
InGaN	White			

## ■ Absolute Maximum Rating

Item	Symbol	Absolute Maximum Rating	Unit
Forward Current	$I_F$	20	mA
Peak Forward Current*	$I_{FP}$	100	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	80	mW
Electrostatic discharge	$E_{SD}$	1000	V
Operation Temperature	$T_{opr}$	-25~+80	°C
Storage Temperature	$T_{stg}$	-5~+45	°C
Lead Soldering Temperature*	$T_{sol}$	Max. 260°C for 5sec Max.	

\* $I_{FP}$  Conditions: Pulse Width  $\leq 10$ msec

\* $T_{sol}$  Conditions: 3mm from the base of the epoxy bulb

## ■ Typical Optical/ Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F=20$ mA	2.8	3.2	3.6	V
50% Power Angle	2 $\theta$ 1/2		--	120	--	deg
Luminous Intensity	$I_v$		800	1000	--	mcd
Chromaticity coordinates	X		--	0.43	--	X:±0.015
	Y		--	0.43	--	Y:±0.025
Prpc Wavelength	$\lambda_D$		--	--	--	nm
Recommend Forward Current	$I_F(\text{rec})$	--	--	--	20	mA
Reverse Current	$I_R$	$V_R=5$ V	--	--	10	uA

Notes:

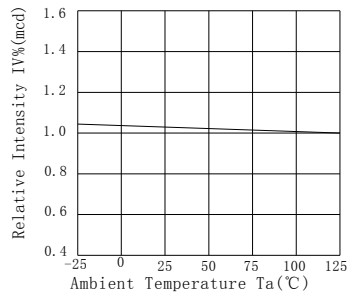
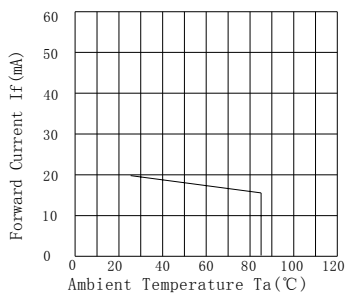
- 1.Absolute maximum ratings  $T_a=25^\circ\text{C}$ .
- 2.Tolerance of measurement of forward voltage  $\pm 0.1$ V.
- 3.Tolerance of measurement of peak Wavelength  $\pm 2.0$ nm.
- 4.Tolerance of measurement of luminous intensity  $\pm 15\%$ .
- 5.Tolerance of measurement of angle intensity  $\pm 15\%$ .

## ■ Reliability Performance

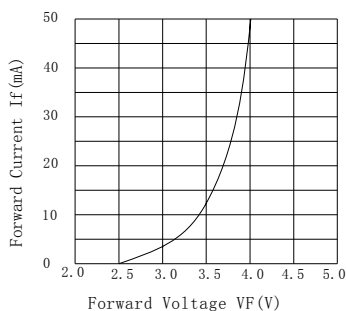
### Test Items And Result

Test Classification	Test Item	Test Conditions	Test Duration	Sample Size	AC/RE
Life Test	Room Temperature DC Operating Life Test	$T_a=25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ , $I_F=20\text{mA}$	1000 hrs	22 pcs	0/1
Environment Test	Thermal Shock Test	$-10^{\circ}\text{C}\pm 5^{\circ}\text{C} \longleftrightarrow +100^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 5min. 10sec. 5min.	50 cycles	22 pcs	0/1
	Temperature Cycle Test	$-40^{\circ}\text{C}\pm 5^{\circ}\text{C} \longleftrightarrow +85^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 30min. 5min. 30min.	50 cycles	22 pcs	0/1
	High Temperature & High Humidity Test	$T_a=85^{\circ}\text{C}\pm 5^{\circ}\text{C}$ $\text{RH}=85\%\pm 0.5\% \text{RH}$	1000 hrs	22 pcs	0/1
	High Temperature Storage	$T_a=100^{\circ}\text{C}\pm 5^{\circ}\text{C}$	1000 hrs	22 pcs	0/1
	Low Temperature Storage	$T_a=-55^{\circ}\text{C}\pm 5^{\circ}\text{C}$	1000 hrs	22 pcs	0/1
Mechanical Test	Resistance to Soldering Heat	$T_a=230^{\circ}\text{C}\pm 5^{\circ}\text{C}$	5sec.	22 pcs	0/1
	Lead Integrity	Load $2.5\text{N}(0.25\text{kgf})$ $0^{\circ} \sim 90^{\circ} \sim 0^{\circ}$	3times	22 pcs	0/1

Forward Current vs. Ambient Temperature    Relative Intensity vs. Ambient Temperature



Forward Current vs. Forward Voltage



Forward Voltage vs. Ambient Temperature

