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Jameco Part Number 1586197



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# SPECIFICATION

*PART NO. : UT4J23-4D-UBC2-S11*

**5.0mm ROUND LED LAMP**



**ATTENTION**  
OBSERVE PRECAUTION  
FOR HANDLING  
ELECTRO STATIC  
SENSITIVE  
DEVICES

Approved by

Checked by

Prepared by

*Sam*

*Yang*

*Min Bao*



**Absolute Maximum Ratings at Ta=25**

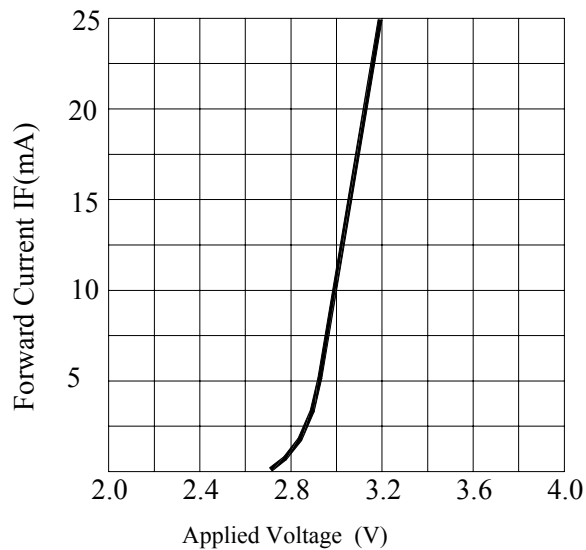
Parameter	Symbol	Rating	Unit
Power Dissipation	P <sub>D</sub>	120	mW
Reverse Voltage	V <sub>R</sub>	5	V
D.C. Forward Current	I <sub>f</sub>	30	mA
Reverse (Leakage) Current	I <sub>r</sub>	50	μ A
Peak Current(1/10Duty Cycle,0.1ms Pulse Width.)	I <sub>f</sub> (Peak)	100	mA
Operating Temperature Range	T <sub>opr.</sub>	-25 to +85	
Storage Temperature Range	T <sub>stg.</sub>	-40 to +100	
Lead Soldering Temp.(1.6mm from body) for 5 seconds	T <sub>sol.</sub>	260	
Electrostatic discharge	ESD.	6000	V

**Electrical and Optical Characteristics:**

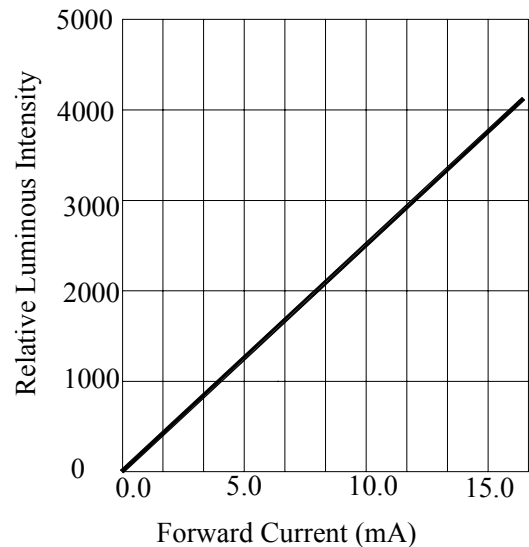
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I <sub>v</sub>	I <sub>f</sub> =10mA	1000	2500		mcd
Forward Voltage	V <sub>f</sub>	I <sub>f</sub> =10mA		3.0	3.8	V
Dominant Wavelength	λ <sub>D</sub>	I <sub>f</sub> =10mA		500		nm
Reverse (Leakage) Current	I <sub>r</sub>	V <sub>r</sub> =5V			50	μA
Viewing Angle	2 1/2	I <sub>f</sub> =10mA		28		deg
Spectrum Line Halfwidth	Δλ	I <sub>f</sub> =10mA		35		nm

NOTE: THE DATAS TESTED BY IS TESTER

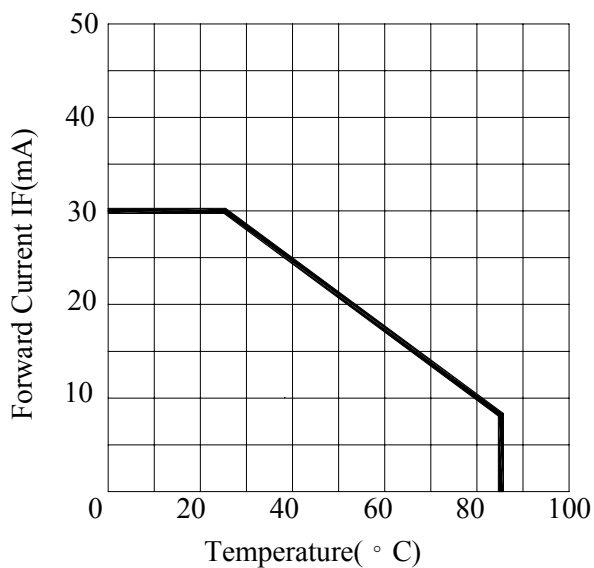
### Typical Electrical / Optical Characteristics Curves :



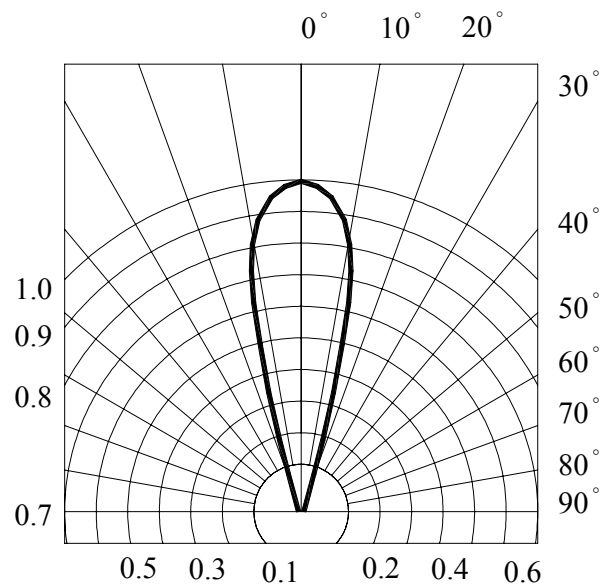
**FORWARD CURRENT VS. APPLIED VOLTAGE**



**FORWARD CURRENT VS. LUMINOUS INTENSITY**



**FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**RADIATION DIAGRAM**

## Precautions:

### TAKE NOTE OF THE FOLLOWING IN USE OF LED

#### 1. Temperature in use

Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used; therefore, additives to improve the heat resistance or moisture resistance (silica gel, etc) which are used for semiconductor products such as transistors cannot be added to the resin.

Consequently, the heat resistant ability of the resin used for LED is usually low; therefore, please be careful on the following during use.

Avoid applying external force, stress, and excessive vibration to the resins and terminals at high temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130 .

At a temperature exceeding this limit, the coefficient of linear expansion of the resin doubles or more compared to that at normal temperature and the resin is softened.

If external force or stress is applied at that time, it may cause a wire rupture.

#### 2. Soldering

Please be careful on the following at soldering.

After soldering, avoid applying external force, stress, and excessive vibration until the products go to cooling process (normal temperature), <Same for products with terminal leads>

##### (1) Soldering measurements:

Distance between melted solder side to bottom of resin shall be 1.6mm or longer.

##### (2) Solder dip: Preheat: 90 max. (Backside of PCB), Within 60 seconds

Solder bath: 260±5 (Solder temperature), Within 5 seconds

##### (3) Soldering iron : 350 max. (Temperature of soldering iron tip), Within 3 seconds

#### 3. Insertion

Pitch of the LED leads and pitch of mounting holes need to be same

#### 4. Others

Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.

Baking temperature: 120 max. Baking time: Within 60 seconds

If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.

sample test data

IT= 0.02 A

VFT= 3.525 V

Power= 0.07 W

Tj= 42.009 °C

DTj= 19.909 °C

Channel1= 28.2 °C

Channel2= 33 °C

TA= 22.1 °C

Rth= 282.41 °C/W

Rthj-Channel1= 195.88 °C/W

Rthj-Channel2= 127.79 °C/W

Forward Current

Forward Voltage

Watt

Junction temperature

Temperature rise

Junction temperature to anode pin

Junction temperature to cathode pin

Ambient temperature

So the Thermal Resistance of this LED

Thermal Resistance to anode pin

Thermal Resistance to cathode pin

following formula:  $T_j = T_A + (I \cdot V = W) \cdot R_{th}$

$T_j = T_j - T_A$

Ans:  $42.009 = 22.1 + (0.02 \cdot 3.525) \cdot 282.41$

$T_j = 42.009 - 22.1 = 19.909$

$Power = 0.02 \cdot 3.525 = 0.07W$

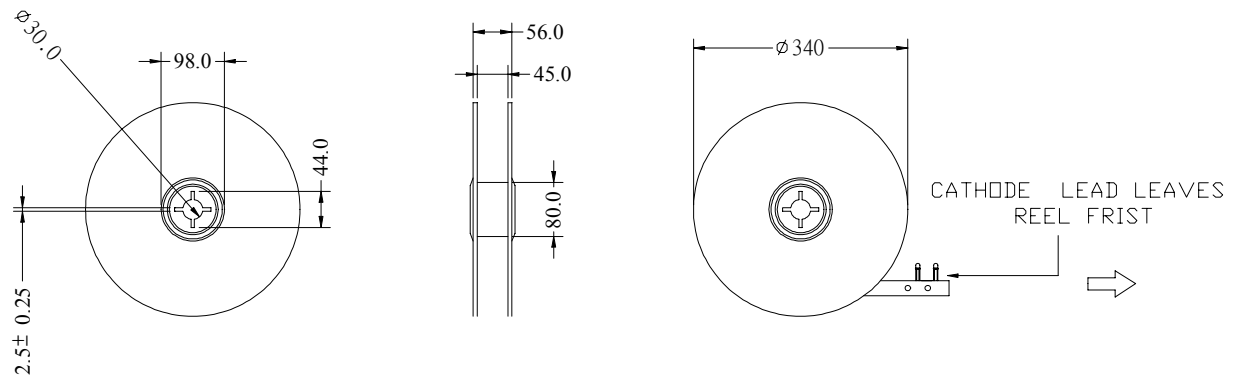
## Features

\*COMPATIBLE WITH RADIAL LEAD  
AUTO INSERTION EQUIPMENT

## Description

THE ABSOLUTE MAXIMUM RATINGS,  
ELECTRICAL/OPTICAL CHARACTERISTICS  
AND PACKAGE DIMENSIONS FOR LAMPS  
PACKAGED ON T/R ARE INDENTICAL TO  
THE BASIC DEVICE.

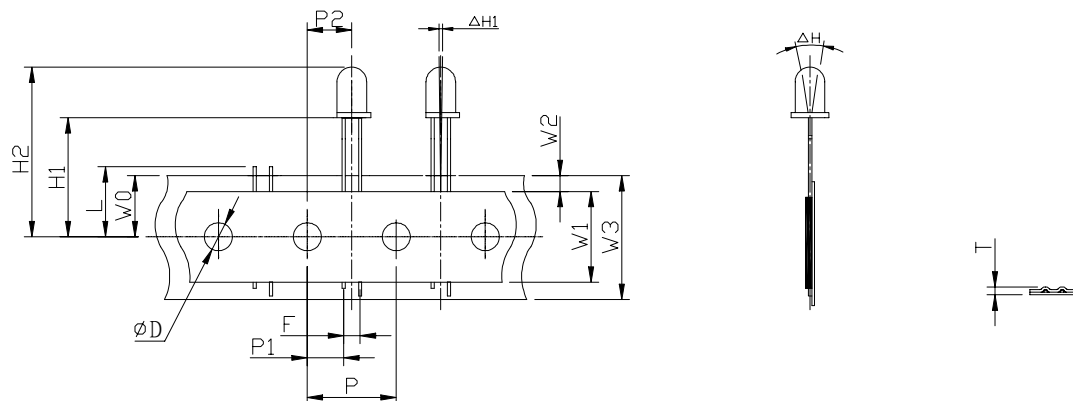
## Dimensions for Reel



### NOTE:

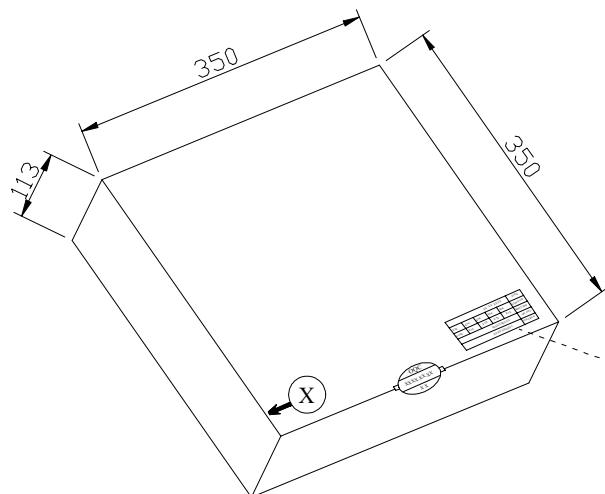
1. ALL DIMENSIONS ARE IN mm, TOLERANCE IS  $\pm 2.0$ mm UNLESS OTHERWISE NOTED.
2. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

## Dimensions for Tape



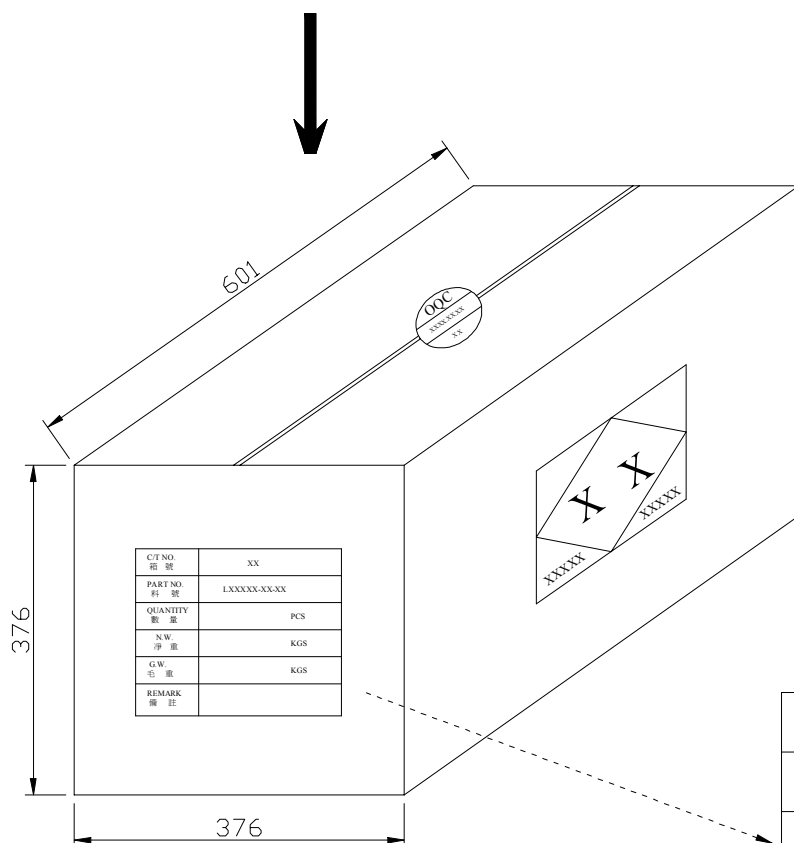
SYMBOL	SPECIFICATION		SYMBOL	SPECIFICATION	
	MINIMUM (mm)	MAXIMUM (mm)		MINIMUM (mm)	MAXIMUM (mm)
D	3.80	4.20	P1	4.4	5.8
F	2.3	3.0	P2	5.05	7.65
$\Delta H$	----	2.00	T	----	1.42
H1	19.5	20.5	W0	8.75	9.5
L	W0	11.0	W1	14.5	15.5
$\Delta H1$	----	2.00	W2	0.00	4.00
H2	----	34.0	W3	17.5	19.0
P	12.4	13.0			



**ENCASED TYPE**


**SMALL CARTON  
QUANTITY: 2000 PCS**

PART NO.	LXXXXX-XX-XX				
LOT NO.	XXXXXXXXXX				
BIN CODE	Xx X	Xx X	Xx X	Xx X	TOTAL
QUANTITY	PCS	PCS	PCS	PCS	PCS
DATE	XXXX, XX, XX				



**SMALL CARTON  
QUANTITY: 10,000 PCS**

C/T NO. 箱 號	XX
PART NO. 料 號	LXXXXX-XX-XX
QUANTITY 數 量	PCS
N.W. 淨 重	KGS
G.W. 毛 重	KGS
REMARK 備 註	

C/T NO. 箱 號	XX
PART NO. 料 號	LXXXXX-XX-XX
QUANTITY 數 量	PCS
N.W. 淨 重	KGS
G.W. 毛 重	KGS
REMARK 備 註	