LEDTECH ELECTRONICS CORP.

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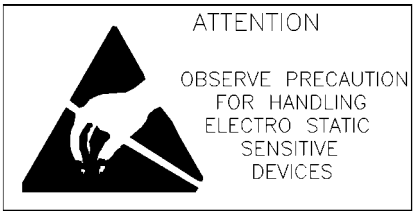
SPECIFICATION

PART NO. : LT97B1-4B-UAC3-S03

3.9X3.1mm OVAL LED LAMP



Approved by	Checked by	Prepared by
Fang Po Wang	Sam Wang	Tammy

3.9X3.1mm OVAL LED LAMP

PART NO.：LT97B1-4B-UAC3-S03

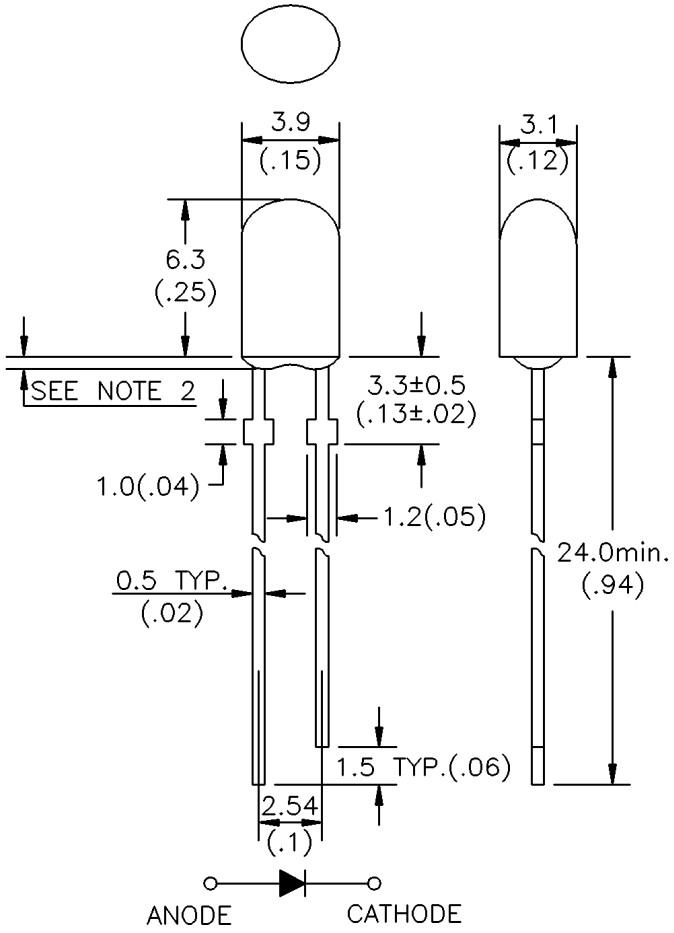
Description

This Blue lamp is made with

InGaN/Sapphire chip, and blue diffused

epoxy resin.

Package Dimensions



Notes：

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm unless otherwise noted

Part No.	Led Chip		Lens Color
	Material	Emitting Color	
LT97B1-4B-UAC3-S03	InGaN/Sapphire	Blue	Blue Diffused

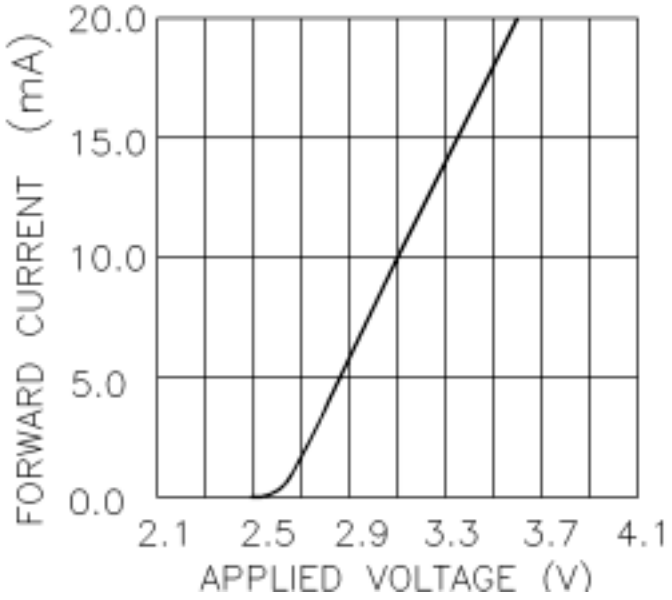
Absolute Maximum Ratings at Ta=25℃：

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	80	mW
Reverse Voltage	Vr	5	V
D.C. Forward Current	If	20	mA
Peak Current (1/10 Duty Cycle,0.1ms pulse width)	If (Peak)	100	mA
Operating Temperature Range	Topr	-25 to +85	℃
Storage Temperature Range	Tstg	-40 to +100	℃
Lead Soldering Temp. (1.6mm from body) for 5 seconds		260	℃
Electric Static Discharge Threshold (HBM)		6000	V

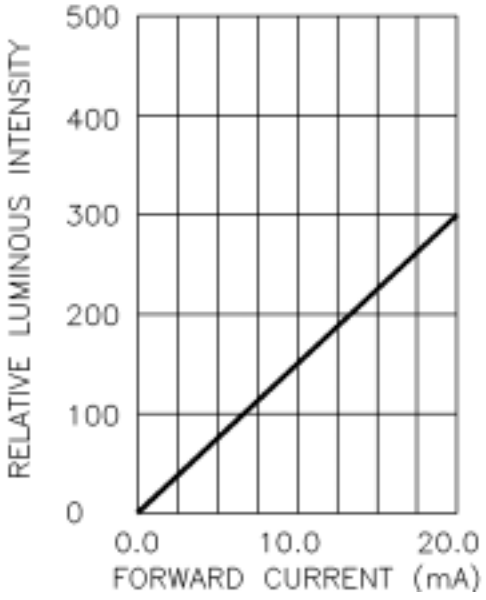
Electrical and Optical Characteristics：

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity		Iv	If=20mA	150	300		mcd
Forward Voltage		Vf	If=20mA		3.6	4.0	V
Dominant Wavelength		λd	If=20mA		470		nm
Reverse Current		Ir	Vr=5V			50	μA
Viewing Angle	Horizontal	2θ1/2	If=20mA		85		deg
	Vertical	2θ1/2	If=20mA		50		deg

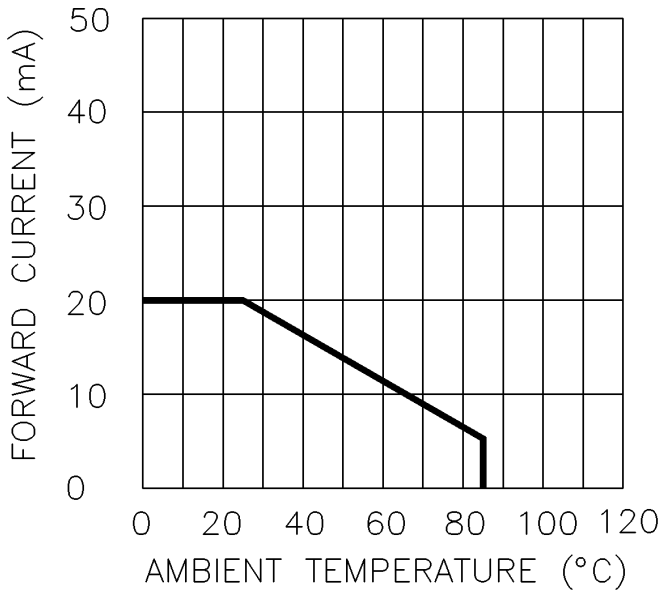
Typical Electrical / Optical Characteristics Curves：



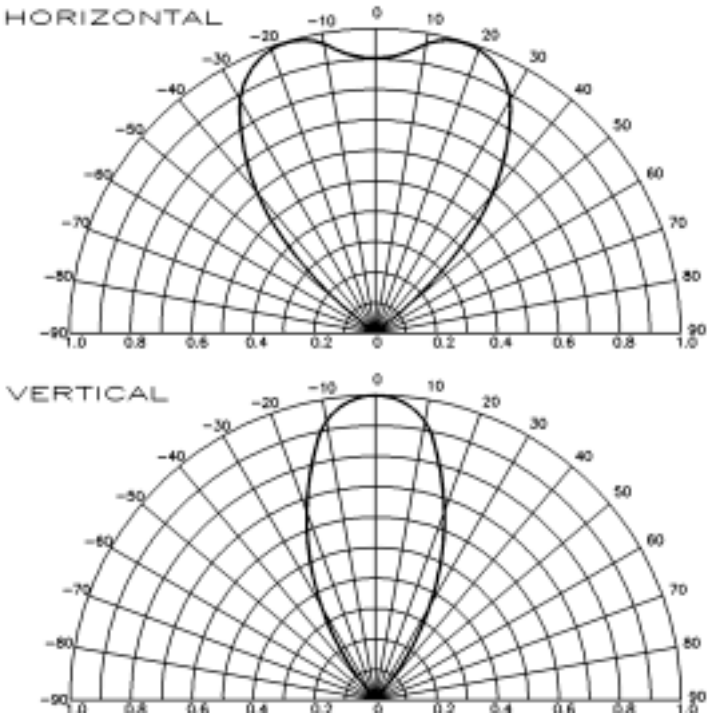
Forward Current vs. Forward Voltage



Forward Current vs. Relative Luminous Intensity



Ambient Temperature vs. Forward Current



Radiation Diagram

Reliability Test：

NO.	Description	Test Method	Test Condition
1	Operational life	1000 Hrs	IF=20mA, Ta=25℃
2	High Temp. Storage	1000 Hrs	100℃
3	Low Temp. Storage	1000 Hrs	-40℃
4	High Temp./High Humidity	1000 Hrs	60℃, 95%
5	Temperature Cycling	100 Cycles	-30℃(30min) →+25℃(5min) → +80℃(30min) → +25℃(5min)
6	Damp Heat Cyclic	40 Cycles Time of 1 cucle: 6 hrs	IF=20mA, Ta=25℃ -0℃±2(2H)→65℃±2 90-95 %RH(3H) →-0℃±2 (1H)
7	Soldering Heat	5 Sec.	260±5°C 1.6mm from bottom of case
8	Solderability	5±0.2 Sec. Wave soldering.	260±5°C Speed of immersing and lifting 25±2.5mm/sec.
9	Drop	X, Y, Z Direction each 1 time	Maple plate, 75cm
10	Lead pull	10 Sec.	Weight 0.5Kg
11	Lead Bend	2 times	Weight 0.25Kg,Bending Angle=90°

The result of the above Reliability test will be referred to the Electrical and Optical Characteristic in this Specification and Judgment will be made in accordance with the following criteria listed below.

Reliability Test Failure Judgmemt Criteria

Item	Criteria for Judgment
Foward Voltage	More than 120% X upper limit of spec.
Reverse (Leakage) Current	More than 100 % X upper limit of spec.
Luminous Intensity	More than 50 % X Lower limit of spec.
Solderbility	Less than 95 %

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 °C.
At a temperature exceeding this limit, the coefficient of liner 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, avoided 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 °C max. (Backside of PCB), Within 120 seconds
Solder bath: 250 °C max. (Solder temperature), Within 5 seconds
(3) Soldering iron : 250 °C 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 °C 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.

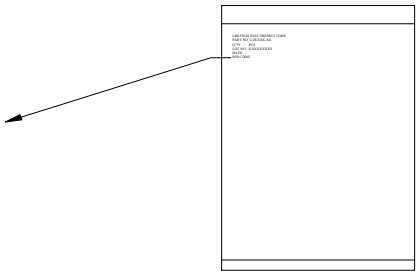
3.9X3.1mm OVAL LED LAMP

PART NO.：LT97B1-4B-UAC3-S03

ENCASED TYPE

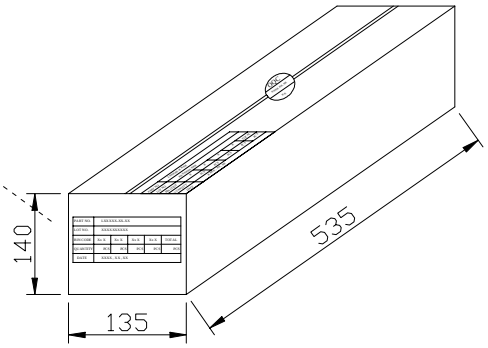
PLASTIC PACKAGE
QUANTITY: 1,000 PCS

LEDTECH ELECTRONICS CORP.
PART NO :LTXXXX-XX
Q'TY : PCS
LOT NO :XXXXXXXXX
DATE :
BIN CODE:



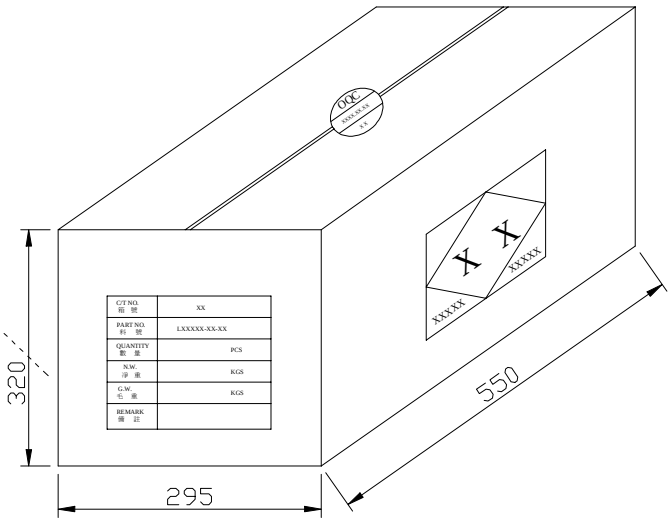
INNER BOX
QUANTITY: 10 PACKETS
TOTAL: 10,000 PCS

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				



OUTER CARTON
QUANTITY: 4 BOX
TOTAL: 40,000 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	



COMPONENT AND MATERIALS：

ITEM		MATERIALS
CUSTOMER PART NO.		
LEDTECH PART NO.		LT97B1-4B-UAC3-S03
LED CHIP		InGaN/Sapphire
LEADFRAME		Iron covered with Silver
ADHESIVE		
EPOXY RESIN	RESIN	EPOXY
	HARDENNER	EPOXY
	DIFFUSANT	EPOXY
	COLORING DYE	EPOXY
BONDING WIRE		GOLD

MODIFY RECORD

TAKE EFFECT DATA	MODIFY ISSUES	REMARKS