

## Features

- Through hole lamp
- Oval shape
- High Brightness
- InGaN Technology
- Special packaging available upon request
- High reliability

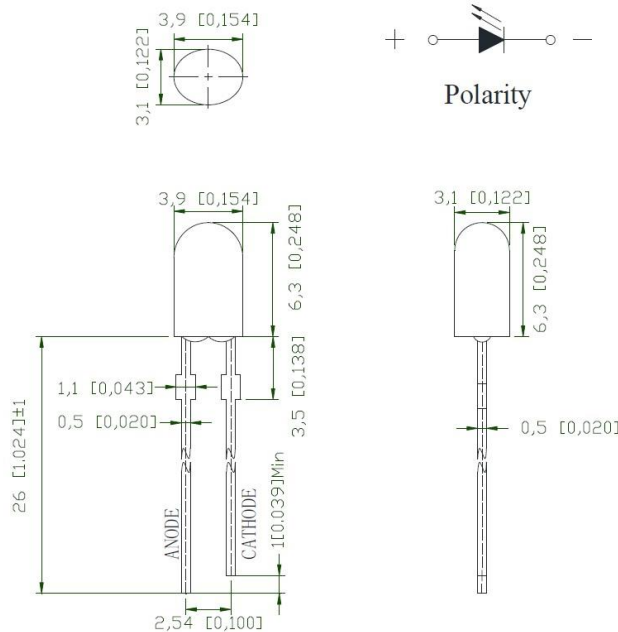
## Applications

- Consumer Electronics
- Variable Message Signs (VMS)
- Automobile After Market
- Industrial Equipment
- Advertising Signs

## Description

The INO-4ABUB11040 is high brightness through-hole lamp with oval shaped radiation pattern. It is an Epoxy type LED which can be used in various applications.

### Package Dimensions in mm



**Figure 1. INO-4ABUB11040 Package Dimensions**

## Notes

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25$  mm (.010") unless otherwise noted.
3. Protruded resin under flange is 1.00mm (.039") max.

### Absolute Maximum Rating at 25°C (Note)

Product	Emission Color	P <sub>d</sub> (mW)	I <sub>F</sub> (mA)	I <sub>FP</sub> * (mA)	V <sub>R</sub> (V)	T <sub>OP</sub> (°C)	T <sub>ST</sub> (°C)
INO-4ABUB11040	Blue	85	25	100	5	-40°C~+80°C	-40°C~+85°C

### Notes

1. Derate linearly as shown in derating curve.
2. Duty Factor = 10%, Frequency = 1 kHz.

### Electrical Characteristics T<sub>A</sub> = 25°C (Note)

Product	Emission Color	I <sub>F</sub> (mA)	V <sub>F</sub> (V)		λ(nm)			Viewing Angle	I <sub>v</sub> (mcd)
			min	max	λ <sub>D</sub>	λ <sub>P</sub>	Δλ	2θ1/2	typ.
INO-4ABUB11040	Blue	20	2.6	3.4	470	468	25	X: 110 Y: 40	600

### Notes

1. Performance guaranteed only under conditions listed in above tables.
2. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
3. 2θ1/2 is the o-axis angle where the luminous intensity is 1/2 the peak intensity.
4. The dominant wavelength (λ<sub>D</sub>) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

### ESD Precaution

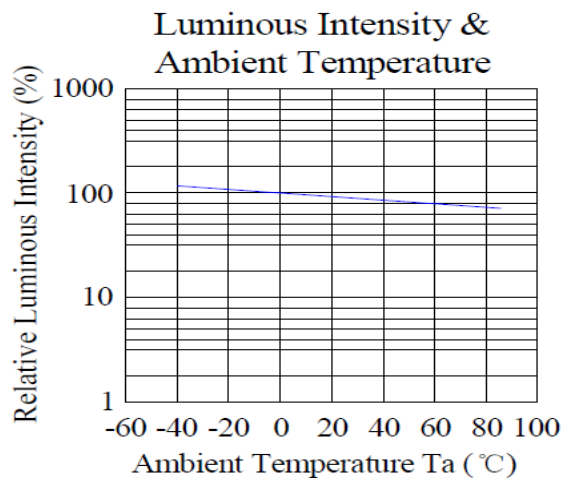
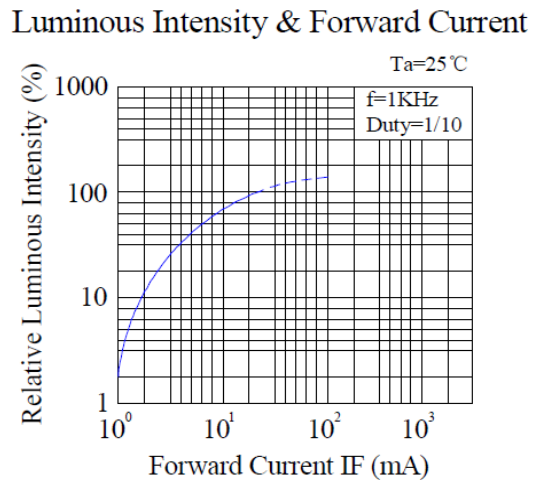
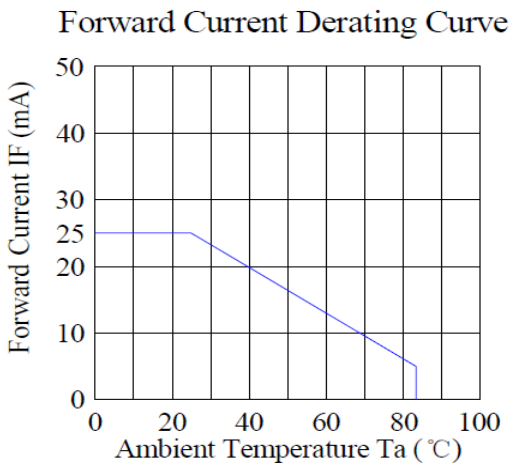
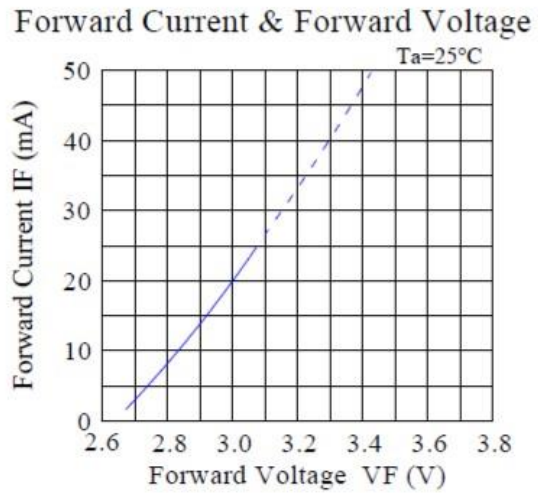
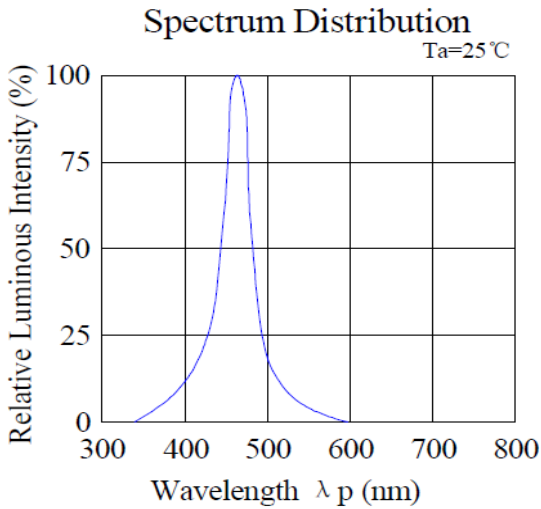
ATTENTION: Electrostatic Discharge (ESD) protection



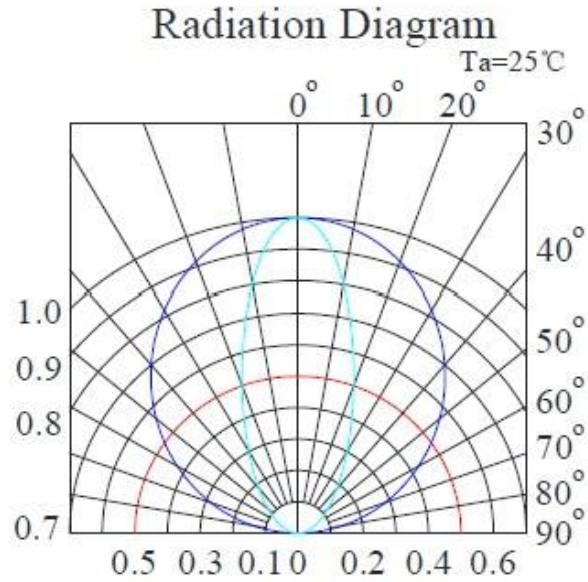
The symbol above denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are STATIC SENSITIVE devices. ESD precaution must be taken during design and assembly. If manual work or processing is needed, please ensure the device is adequately protected from ESD during the process.

Please be advised that normal static precautions should be taken in the handling and assembly of this device to prevent damage or degradation which may be induced by electrostatic discharge (ESD).

### Typical Characteristic Curves



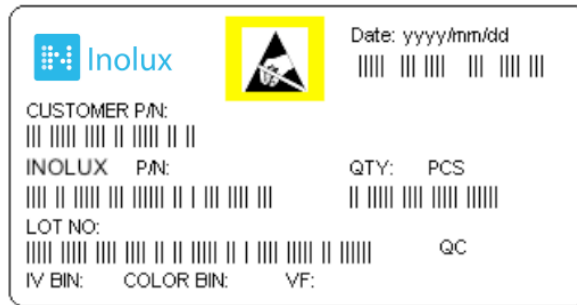
### Typical Characteristic Curves – Radiation Pattern



### Ordering Information

Product	Emission Color	Technology	Test Current $I_F$ (mA)	Luminous Intensity $I_V$ (mcd) (Typ.)	Forward Voltage $V_F$ (V) (Typ.)	Orderable Part Number
INO-4ABUB11040	Blue	InGaN	20	600	3.0	INO-4ABUB11040

**Label Specifications**



**Inolux P/N:**

I	N	O	-	4	A	B	U	B	1	1	0	4	0	-	X	X	X	X
				Material	Lens	Color	View Angle				Customized Stamp-off							
Inolux Oval Lamp				4A = 3.9 x 3.1mm 6.3mm height Oval	BU = Blue Diffused	B = Blue	11040 = 110 deg. X 40 deg.											

**Lot No.:**

Z	2	0	1	7	01	24	001
Internal Tracker	Year (2017, 2018, .....)				Month	Date	Serial

## Reliability

Item	Frequency/ lots/ samples/ failures	Standards Reference	Conditions
Precondition	For all reliability monitoring tests according to JEDEC Level 2	J-STD-020	1.) Baking at 85°C for 24hrs 2.) Moisture storage at 85°C/ 60% R.H. for 168hrs
Solderability	1Q/ 1/ 22/ 0	JESD22-B102-B And CNS-5068	Accelerated aging 155°C/ 24hrs Tinning speed: 2.5+0.5cm/s Tinning: A: 215°C/ 3+1s or B: 260°C/ 10+1s
Resistance to soldering heat		CNS-5067	Dipping soldering terminal only Soldering bath temperature A: 260+/-5°C; 10+/-1s B: 350+/-10°C; 3+/-0.5s
Operating life test	1Q/ 1/ 40/ 0	CNS-11829	1.) Precondition: 85°C baking for 24hrs 85°C/ 60%R.H. for 168hrs 2.) Tamb25°C; IF=20mA; duration 1000hrs
High humidity, high temperature bias	1Q/ 1/ 45/ 0	JESD-A101-B	Tamb: 85°C Humidity: 85% R.H., IF=5mA Duration: 1000hrs
High temperature bias	1Q/ 1/ 20	IN specs.	Tamb: 55°C IF=20mA Duration: 1000hrs
Pulse life test	1Q/ 1/ 40/ 0		Tamb25°C, If=20mA,, Ip=100mA, Duty cycle=0.125 (tp=125 μs, T=1sec) Duration 500hrs)
Temperature cycle	1Q/ 1/ 76/ 0	JESD-A104-A IEC 68-2-14, Nb	A cycle: -40 degree C 15min; +85 degree C 15min Thermal steady within 5 min.. 300 cycles 2 chamber/ Air-to-air type
High humidity storage test	1Q/ 1/ 40/ 0	CNS-6117	60+3°C 90+5/-10% R.H. for 500hrs
High temperature storage test	1Q/ 1/ 40/ 0	CNS-554	100+10°C for 500hrs
Low temperature storage test	1Q/ 1/ 40/ 0	CNS-6118	-40+5°C for 500hrs

## Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release		1.0	06-14-2020

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.