

Features

- Through hole lamp
- Oval shape
- High Brightness
- AllInGaP 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-4ARUR11040 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

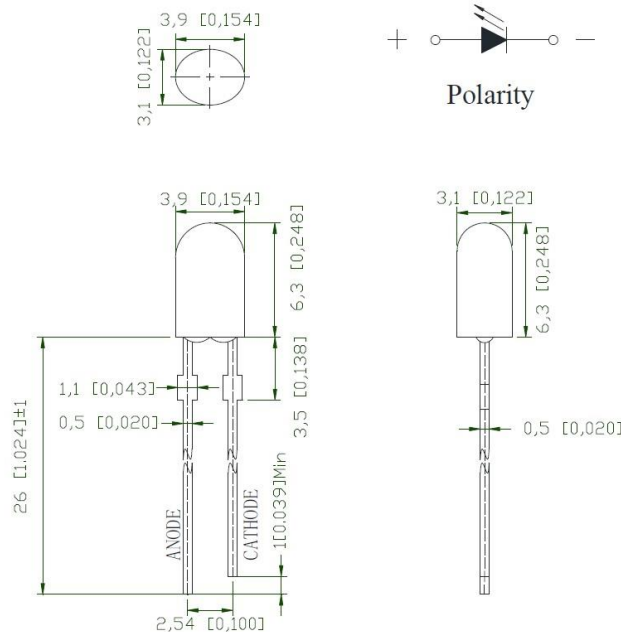


Figure 1. INO-4ARUR11040 Package Dimensions

Notes

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 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 _d (mW) | I _F (mA) | I _{FP} * (mA) | V _R (V) | T _{OP} (°C) | T _{ST} (°C) |
|----------------|----------------|---------------------|---------------------|------------------------|--------------------|----------------------|----------------------|
| INO-4ARUR11040 | Red | 60 | 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_A = 25°C (Note)

| Product | Emission Color | I _F (mA) | V _F (V) | | λ (nm) | | | Viewing Angle | I _v (mcd) |
|----------------|----------------|---------------------|--------------------|-----|----------------|----------------|----|-------------------|----------------------|
| | | | min | max | λ _D | λ _P | Δλ | 2θ _{1/2} | typ. |
| INO-4ARUR11040 | Red | 20 | 1.6 | 2.4 | 624 | 632 | 20 | X: 110 Y: 40 | 2200 |

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. 2θ_{1/2} is the o-axis angle where the luminous intensity is 1/2 the peak intensity.
4. The dominant wavelength (λ_D) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

ESD Precaution

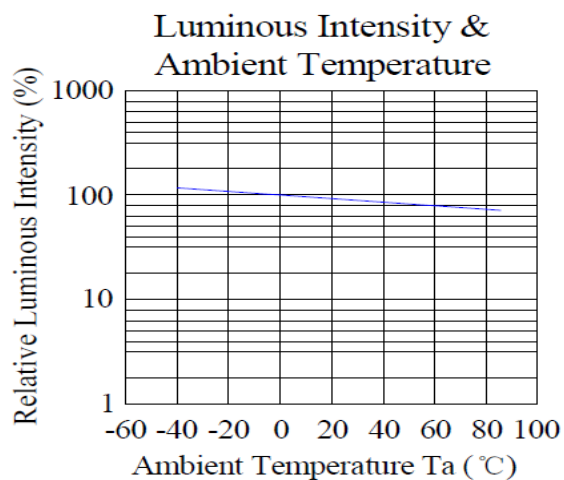
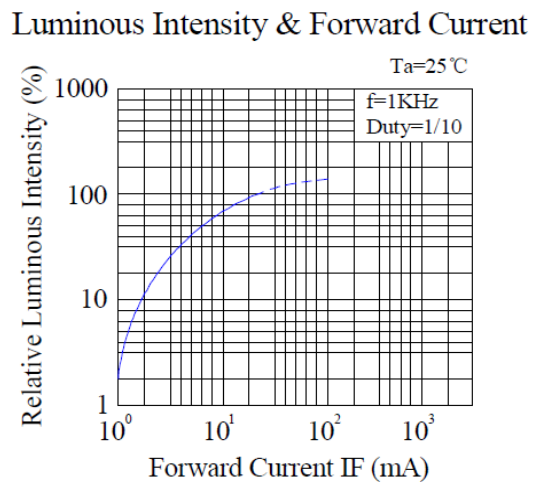
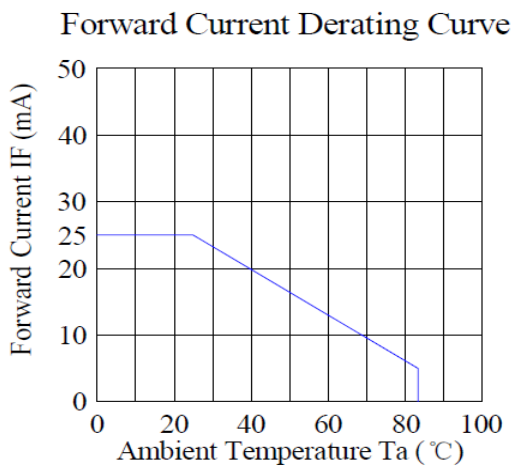
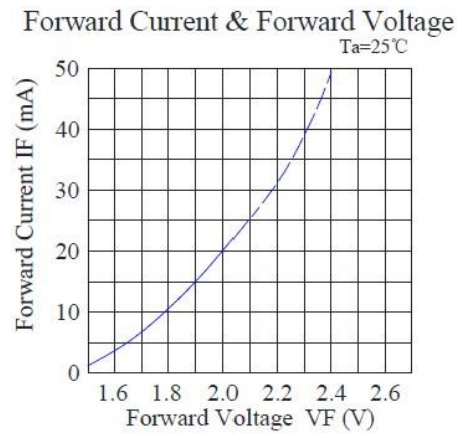
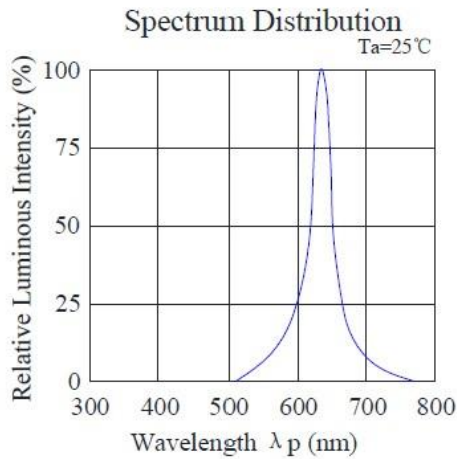
ATTENTION: Electrostatic Discharge (ESD) protection



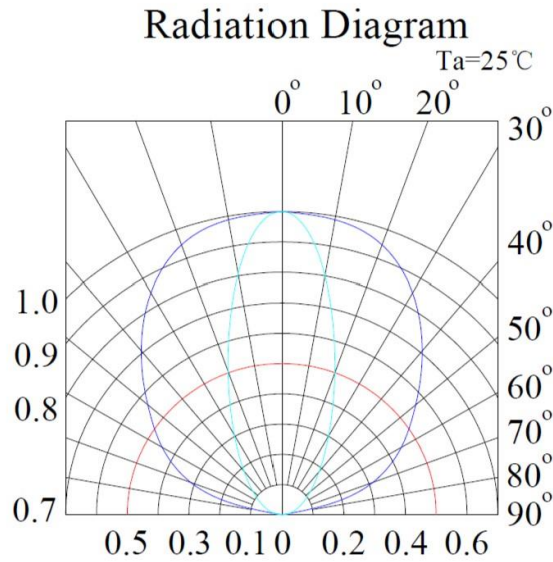
The symbol above denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are STATIC SENSITIVE devices. ESD precaution 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



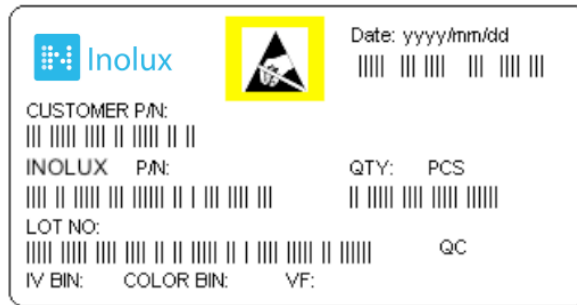
Typical Characteristic Curves – Radiation Pattern



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-4ARUR11040 | Red | AllnGaP | 20 | 2200 | 2.0 | INO-4ARUR11040 |

Label Specifications



Inolux P/N:

| | | | | | | | | | | | | | | | | | | |
|---------------------|---|---|---|---|-------------------------|------------|-------------------------------|---|---|---|-------------------------|---|---|---|---|---|---|---|
| I | N | O | - | 4 | A | R | U | R | 1 | 1 | 0 | 4 | 0 | - | X | X | X | X |
| Inolux Oval Lamp | | | | Material | Lens | Color | View Angle | | | | Customized Stamp-off | | | | | | | |
| | | | | 4A = 3.9 x 3.1mm 6.3mm height Oval | RU = Red Diffused | R = Red | 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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