



# 463UPC-5

Light Emitting Diode

## Description

- Size: 5mm round flat top (T-1 3/4).
- Emitting color: Ultra Purple-Pink.
- Lens color: Water clear.
- Lead type: Radial leads.

## Main Features

- Instant light less than 100ns turn on time.
- Superior resistance to moisture.
- Low drive current, recommend forward current: IF= 10- 20mA.
- PB Free
- Reliable and rugged.
- Cool beam, safe to touch.

## Absolute Maximum Rating TA=25°C

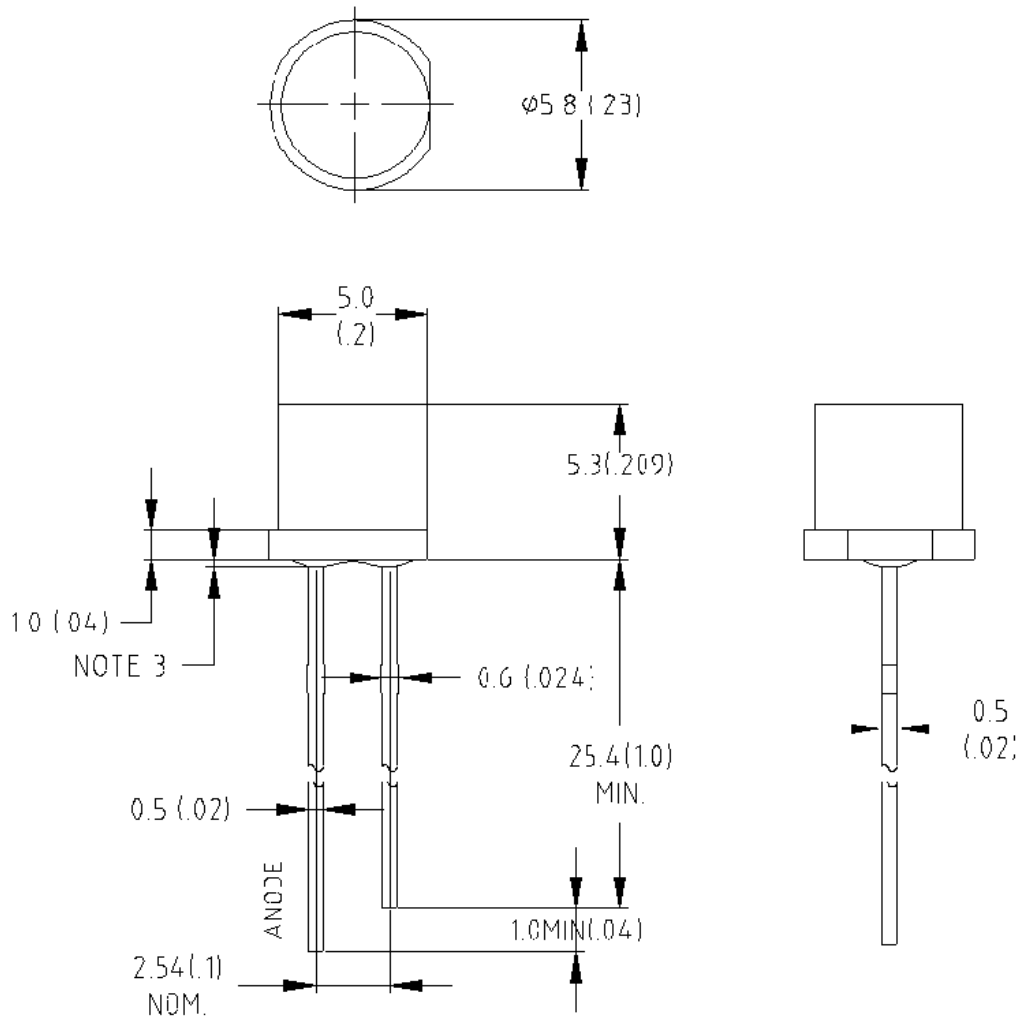
Parameter	Symbol	Rating	Unit	Notice
Power Dissipation	Pd	80	mW	IF = 20mA
DC Forward Current	IF	20	mA	
Pulse Forward Current	IF (PEAK)	100	mA	Duty 1/10 @ 1KHz
Derating Linear From 50°C		0.4	mA / °C	
Reverse Voltage	VR	5	V	Under 100uA
Electrostatic Discharge (ESD)		150	V	
Operating Temperature Range	T OPR	-20 to +80	°C	
Storage Temperature Range	T STG	-30 to +100	°C	Humidity should be under 50%
Lead Soldering Temperature	T SOL	260 +/-5	°C	4mm (0.157") from mold body Less then 5 Second

## Part Selection Electrical / Optical Characteristics And Curves At TA=25°C

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit.
Forward Voltage	VF	IF =20mA	---	3.50	4.00	V
Reverse Current	IR	VR =5V	—	—	100	uA
Luminous Intensity (Note 1)	Iv	IF =20mA	150	350	700	mcd
X,Y Coordinates	X	IF =20mA	0.20	0.25	0.30	---
	Y	IF =20mA	0.10	0.14	0.22	---

**Note 1:** Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.

## Package Dimensions

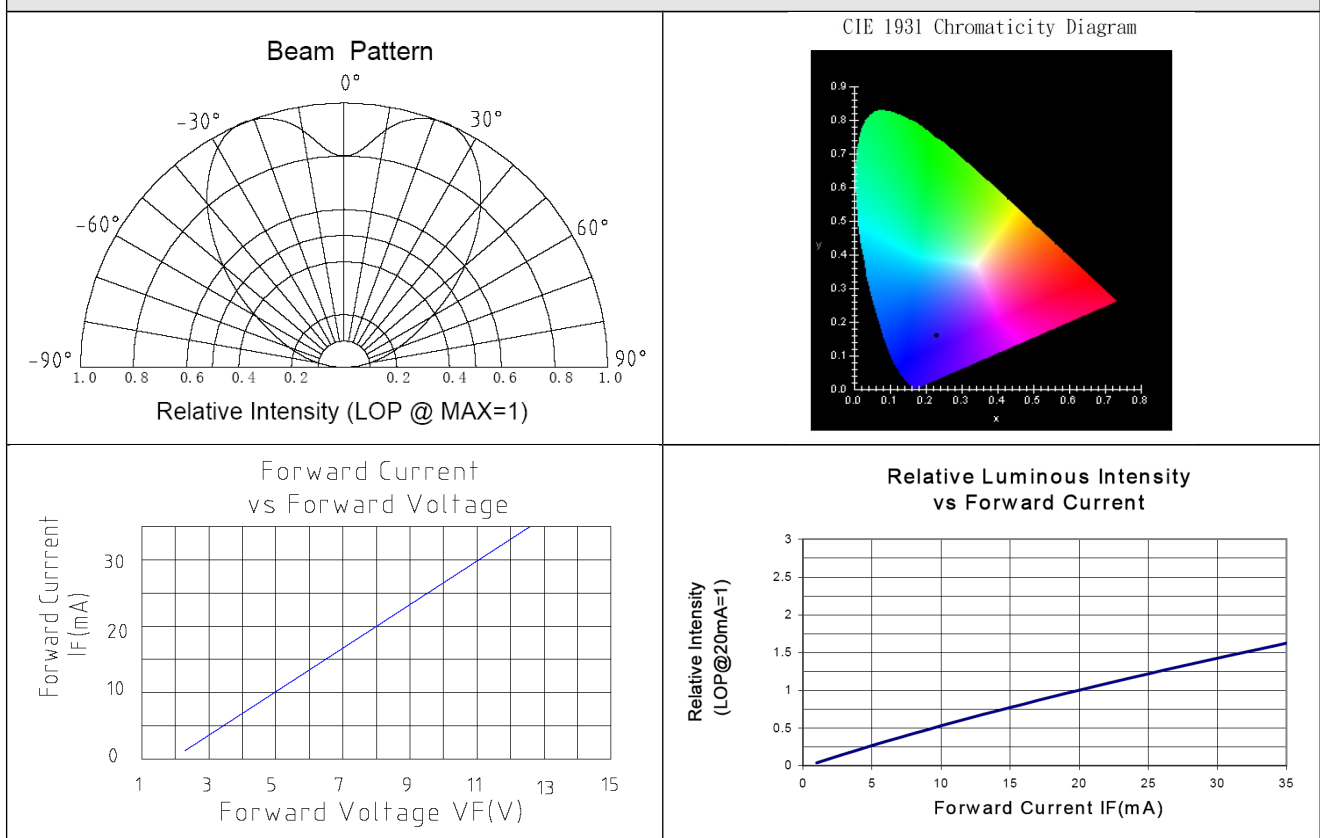


<b>Lens Color</b>	<b>Water Clear</b>	<b>Source Color</b>	<b>Purple-Pink</b>
		<b>Viewing Angle</b>	<b>110 +/-10 Deg.</b>

**NOTES:**

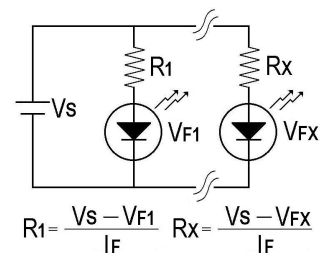
- All dimensions are in millimeters (inches).
- Tolerance is  $\pm 0.25$  mm (.010") unless otherwise noted.
- Protruded resin under flange is 1.0mm(.04") max
- Lead spacing is measured where the leads emerge from the package.
- Specifications are subject to change without notice.

### Typical Electrical / Optical Characteristic Curves At 25°C Ambient Temperature



**NOTE:**

- $\theta_{1/2}$  is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- Clean only in isopropanol, ethanol, Freon TF (or equivalent).
- When using this product, Please observe the absolute maximum rating and the instructions for use outlined from use of the product, which does not comply with the absolute maximum rating and the instructions included in these specification sheet.
- If forming is required, it must be done before soldering. Form pin leads by securing under 5mm from body and bedding with radio pliers or the equivalent to avoid pressure on resin. When the LED is mounted into a P.C.board, pitch spacing should be aligned to prevent cause any stress to the resin. Any unsuitable stress applied to resin may break bonding wire in LED, which will cause failure.
- Q.A Outgoing inspection standard:  
Major Defect 0.65 A.Q.L. Minor Defect 1.5 A.Q.L
- Check at a distance of 30cm from the LED to the eye defects.
- **Over-current-proof:**  
Customer must apply resistor for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).
- **Parallel connection:**  
Customer must apply series resistor in **EACH LED** under parallel connection. Otherwise  $V_F$  tolerance will cause LED array brightness uneven.

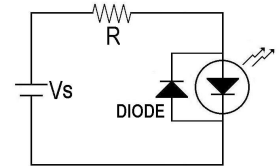


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### Precautions For Use

- **Reverse voltage protection diode:**

We recommend user put a reverse protective diode in parallel with LED, which is to prevent high reverse voltage caused the LED damage.



### LED handling for ESD protection

- Keep all common plastics such as Styrofoam molded containers, packaging “popcorn balls”, vinyl and teflon containers and plastic wrap away from LED components and PC board assemblies.
- Have all operators that handle LED components wear wrist ground straps, that are in fact touching their skin and securely grounded through a 250 K ohm resistor.
- Operators should wear only cotton clothing. Clothing made of synthetic fabrics, such as nylons, polyesters and acrylics, quickly build up a very large static charge with normal body movement.
- Use only tables and benches that are covered with ESD protective pads, having a surface insulation resistance of 10<sup>12</sup> ohms per square. The high surface resistance permits the static charge to bleed off very slowly at an energy level sufficiently low enough to prevent any damage to an LED component.
- Ground all metal work bench frames and other equipment through a 250 k ohm current limiting resistor to prevent the rapid bleed-off of electric charge.
- Store LED components and PC board assemblies only in ESD protective packaging and use that packaging for transporting from one location to another. Plastic ESD protective containers are made from surfactant impregnated resins, such as polyethylene. The impregnated surfactants maintain a microscopic film of moisture on the surface of the plastic which prevents the build up of any static charge.
- Never apply adhesive tape or an adhesive label to a PC board assembly for temporary identification through the assembly process. The turboelectric charge that is created, when it is removed prior to shipment may damage the LED components.
- Continually train and remind operators and other personnel of the rules and procedures to be followed to protect LED components and PC board assemblies from ESD damage.

