333UVC-2

Light Emitting Diode

Description

- Size: 5mm (T-1 3/4) round package.
- Emitting color: Ultra Violet.
- 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.
- **Fb-Free.**
- Cool beam, safe to touch.
- Reliable and rugged.

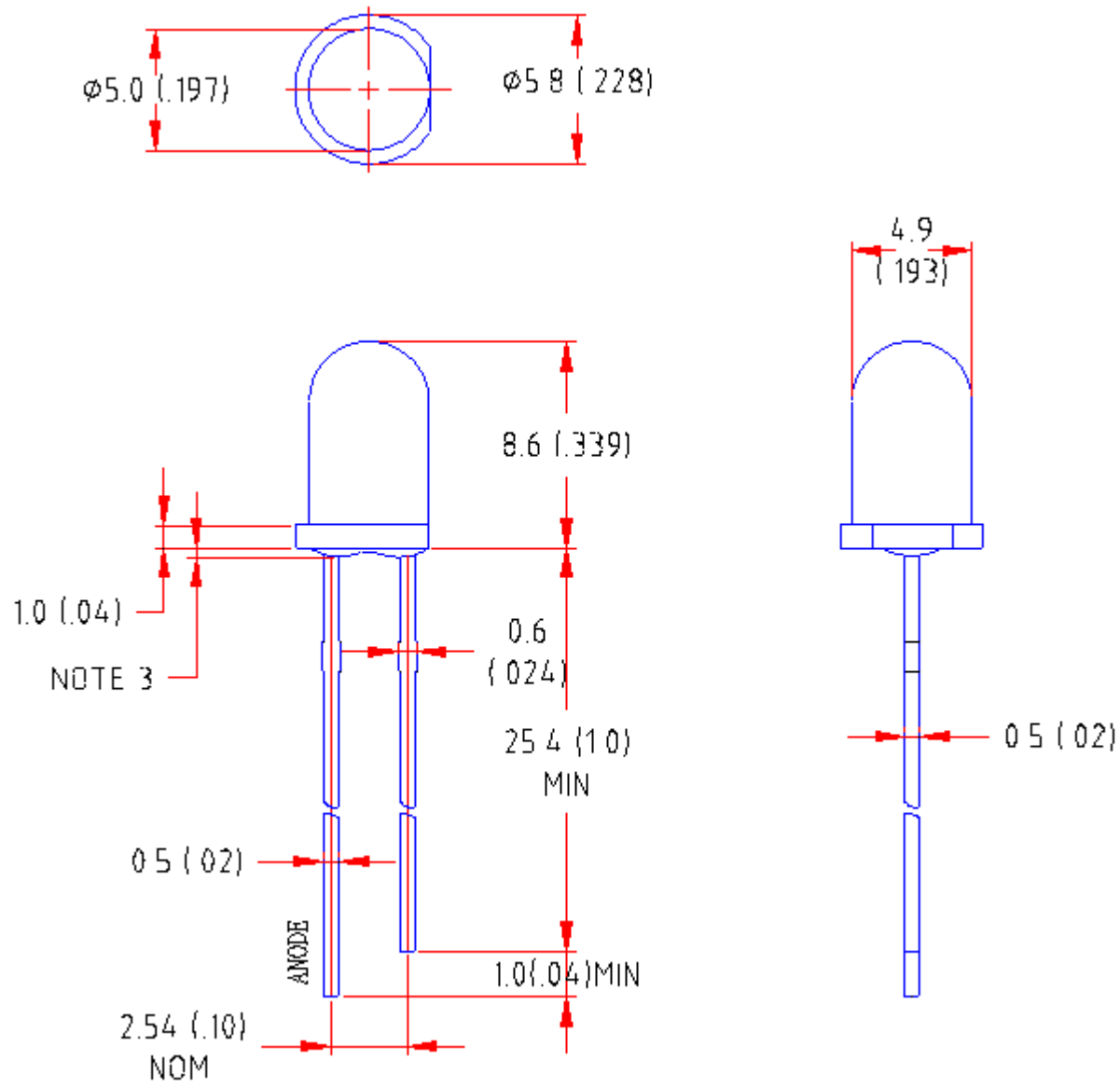
Absolute Maximum Rating TA=25°C				
Parameter	**Symbol**	**Rating**	**Unit**	**Notice**
Power Dissipation	Pd	115	mW	----
DC Forward Current	I_F	20	mA	----
Pulse Forward Current	$I_{F\ (PEAK)}$	90	mA	Duty 1/10 @ 1KHz
Derating Linear From 50°C	--	0.4	mA / °C	----
Reverse Voltage	V_R	5	V	Under 100uA
Operating Temperature Range	T_{OPR}	-20 to +80	°C	----
Storage Temperature Range	T_{STG}	-40 to +80	°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 At TA-25°C							
Characteristic	**Symbol**	**Test Condition**		**Min.**	**Typ.**	**Max.**	**Unit.**
Forward Voltage	V_F	I_F	=20mA	2.8	3.5	4.0	V
Reverse Current	I_R	V_R	=8V	—	—	100	uA
Luminous Intensity (Note 1)	I_V	I_F	=20mA	3	7	—	mW/Sr
Peak Emission Wavelength	λ_p	I_F	=20mA	400	405	410	nm
Spectral Line Half Width	$\Delta\lambda$	I_F	=20mA	40	45	50	nm
Dominant Wavelength (Note 2)	λ_d	I_F	=20mA	402	407	412	nm

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

Note 2 : The dominant wavelength (λd) is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.

Package Dimensions

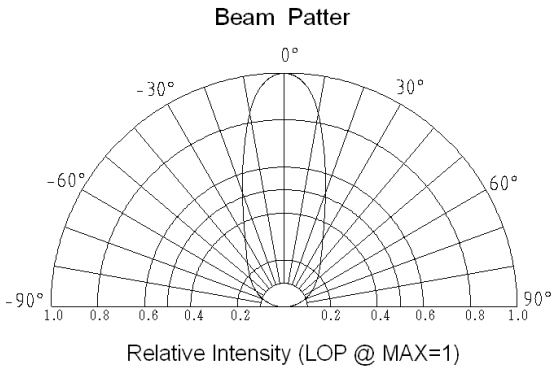


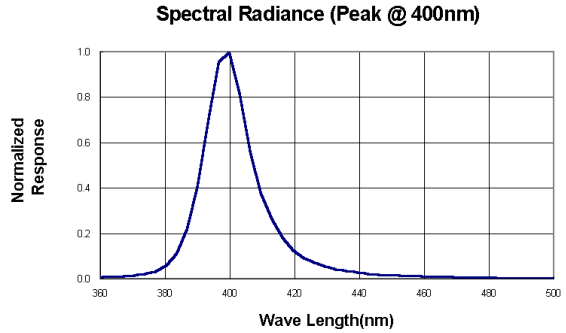
Lens Color	**Water Clear**	**Source Color**	**UV**
		Viewing Angle	**30 +/- 5 Deg.**

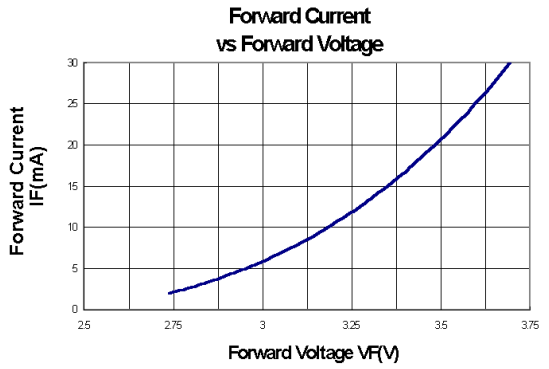
NOTES:

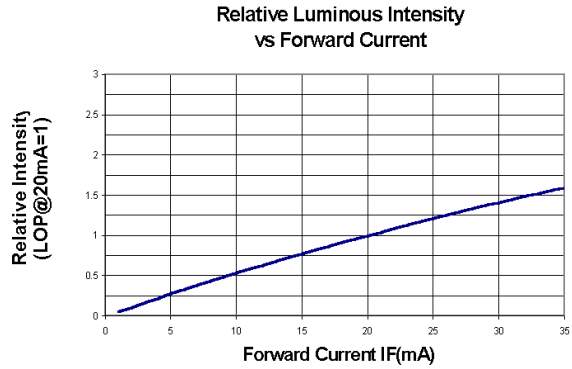
- All dimensions are in millimeters (inches).
- Tolerance is ±0.25 mm (.010”) unless otherwise noted.
- Protruded resin under flange is 1.0mm(.04”) max
- Lead spacing is measured where the leads emerge from the package.
- Specifications are subject to change without notice.

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









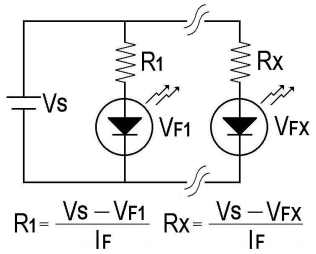
NOTE:

- $\theta_{1/2}$ 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:**

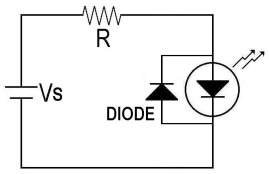
  Customer must apply series resistor in **EACH LED** under parallel connection. Otherwise VF tolerance will cause LED array brightness uneven.
- Specifications are subject to change without notice.



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.



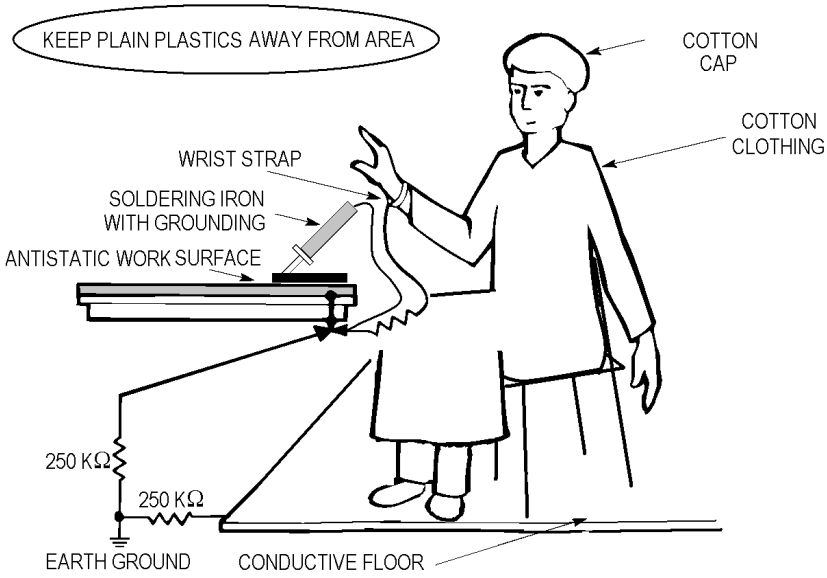
- **Recommend check all LED after assembled.**

  When inspecting the final products in which LED were assembled, it is recommended to check whether the assembled LED are damaged by static electricity or not. It is easy to find static-damaged LED by a light-on test or VF test at a lower current (blow 1mA is recommended). Damaged LED will show some unusual characteristics such as the leak current remarkably increase, the forward voltage becomes lower or the LED do not light at the low current.

  Criteria : (VF>2.0V at IF=0.5mA)

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 1012 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.