

Near UV LED – 340nm

**TO39 PKG series**

CUD49H1A



---

## Product Brief

### Description

- CUD49H1A is a near ultraviolet light emitting diode with peak emission wavelengths from 340nm to 350nm.
- It incorporates the hermetic seal technology

### Features and Benefits

- Near ultraviolet LED
- RoHS compliant

### Key Applications

- Blood Analysis
- Phototherapy
- Spectroscopy for Medical & Scientific application

# Table of Contents

## Index

- Product Brief
- Table of Contents
- Performance Characteristics
- Characteristics Graph
- Mechanical Dimensions
- Product Nomenclature (Labeling Information)
- Precaution for Use
- Company Information

## Performance Characteristics

**Table 1. Electro - Optical characteristic at 20mA**

(T<sub>a</sub>=25°C, RH=30%)

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Peak wavelength <sup>[1]</sup>	$\lambda_p$	340	343	350	nm
Radiant Flux <sup>[2]</sup>	$\Phi_e$ <sup>[3]</sup>	1.0	1.5	2.0	mW
Forward Voltage <sup>[4]</sup>	VF	3.2	3.8	4.5	V
Spectrum Half Width	$\Delta \lambda$	-	10.4	-	nm
View Angle	2 $\Theta$ 1/2	-	5.1	-	deg.

**Table 2. Absolute Maximum Rating**

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Forward Current	I <sub>F</sub>	-	20	60	mA
Power Dissipation	P <sub>D</sub>	-	200	-	mW
Operating Temperature	T <sub>opr</sub>	-30		60	°C
Storage Temperature	T <sub>stg</sub>	- 40	-	100	°C

**Notes :**

1. Peak Wavelength Measurement tolerance :  $\pm 3\text{nm}$
  2. Radiant Flux Measurement tolerance :  $\pm 10\%$
  3.  $\Phi_e$  is the Total Radiant Flux as measured with an integrated sphere.
  4. Forward Voltage Measurement tolerance :  $\pm 3\%$
- Calculated performance values are for reference only.
  - All measurements were made under the standardized environment of Seoul Viosys

## Characteristics Graph

Fig 1. Spectrum, IF=20mA , Ta=25°C

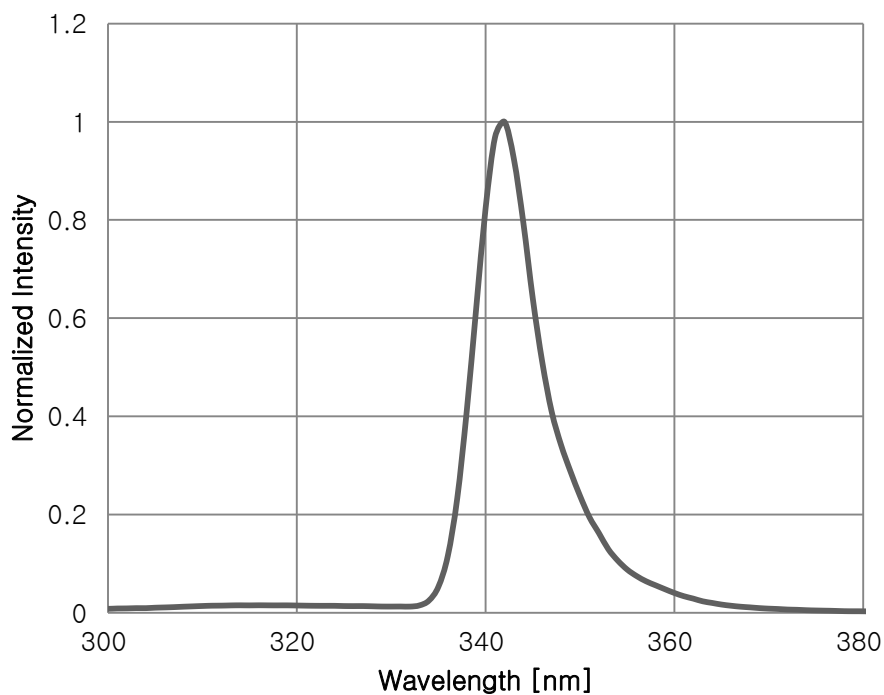
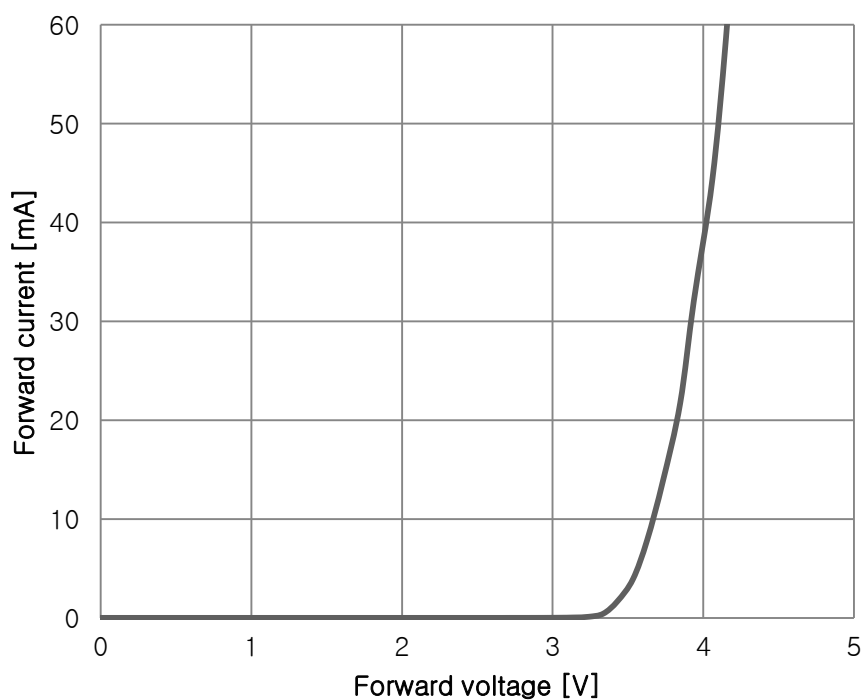
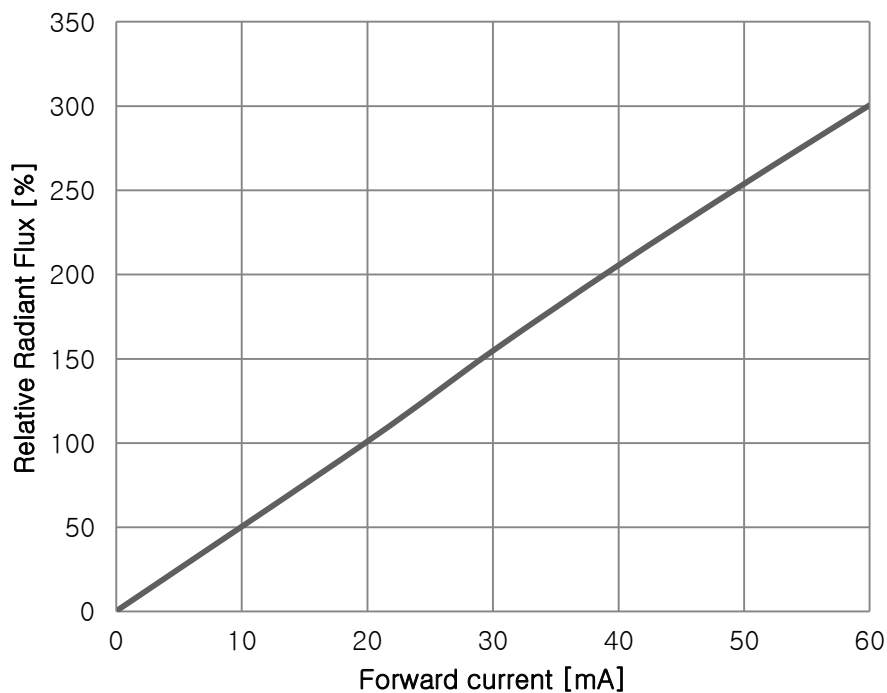


Fig 2. Forward Voltage vs.Forward Current, Ta=25°C

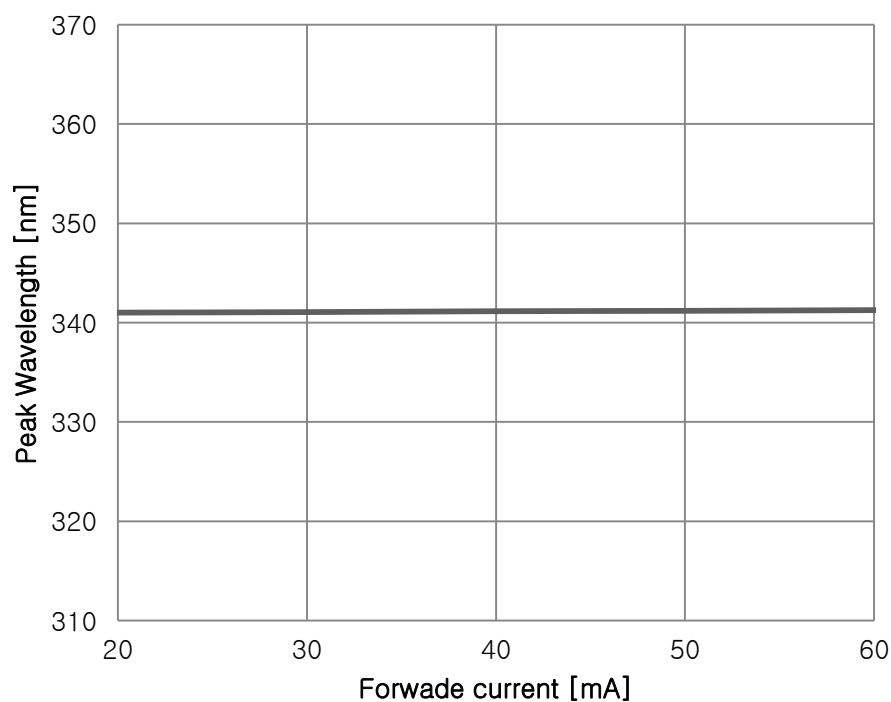


## Characteristics Graph

**Fig 3. Forward Current vs. Relative Radiant Flux,  $T_a=25^{\circ}\text{C}$**

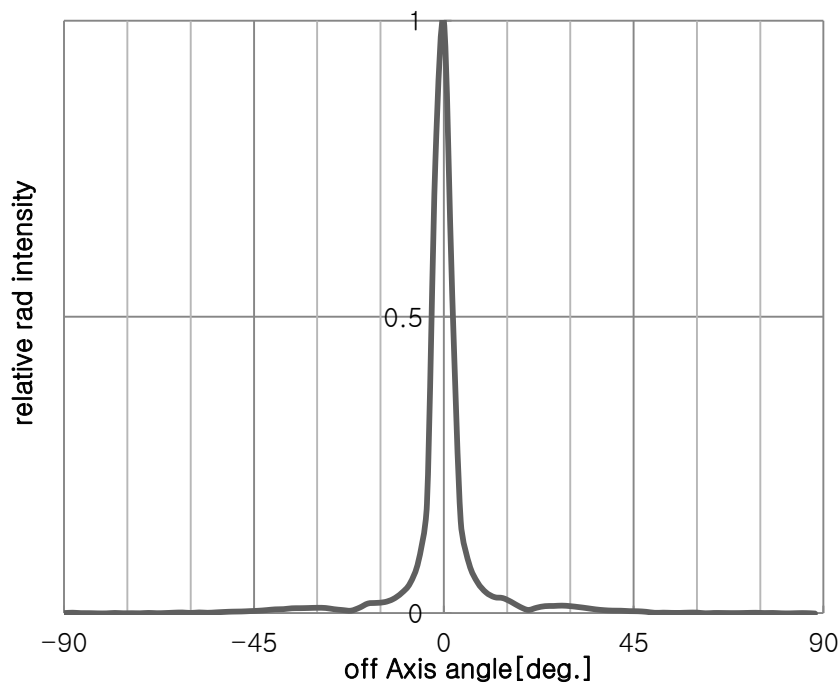


**Fig 4. Forward Current vs. Peak Wavelength,  $T_s=25^{\circ}\text{C}$**



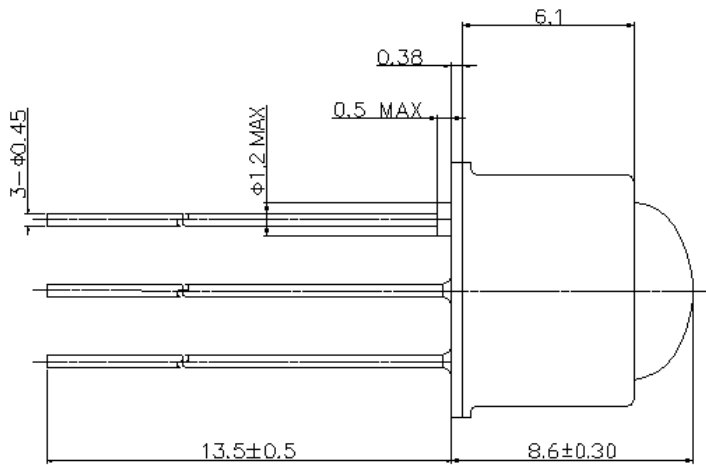
# Characteristics Graph

Fig 5. Typical Spatial Distribution, IF=20mA

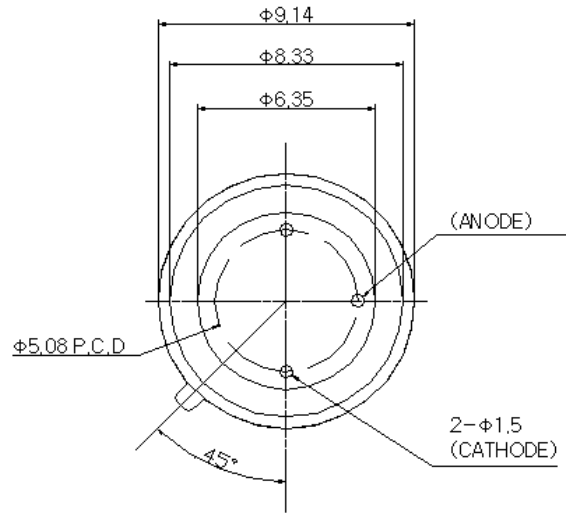


## Mechanical Dimensions

### < Package Outline >



Side View

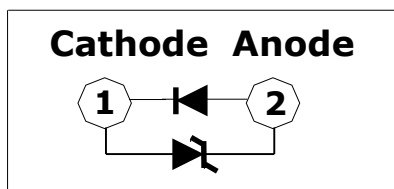


Top View

※ All parts are anode except cathode Pin.

Part Number	Glass	Cap	Lead
CUD49H1A	UV Glass	Ni Plating iron alloy	Au Plating iron alloy

### < Circuit Diagram >



- (1) All dimensions are in millimeters.
- (2) Scale : none
- (3) Undefined tolerance is ±0.2mm

## Product Nomenclature

[illegible]

### Table 5. Part Numbering System: $X_1X_2X_3X_4X_5X_6X_7X_8$

X1		X2		X3X4		X5		X6		X7		X8	
Company		Product Line		Wavelength		PKG Series		Lens Type		Chip Q'ty		Ver	
SVC	C	UV	U	Deep 340	D4	TO39	9	Hemi	H	1	1	ver0	A



## Precaution for Use

### 1) Storage

- To avoid moisture penetration, we recommend storing UV LEDs in a dry box with a desiccant. The recommended temperature and Relative humidity are between 5°C and 30°C and below 50% respectively.
- LEDs must be stored properly to maintain the device. If the LEDs are stored for 3 months or more after being shipped from SVC, a sealed container with a nitrogen atmosphere should be used for storage.
- Replace the remained LEDs into the moisture-proof bag and reseal the bag after work to avoid those LEDs being exposed to moisture. Prolonged exposure to moisture can adversely affect the proper functioning of the LEDs.
- If the package has been opened more than 4 eek(MSL\_2a) or the color of the desiccant changes, components should be dried for 10-12hr at 60±5°C
- The conditions of resealing are as follows
  - Temperature is 5 to 40°C and Relative humidity is less than 30%

### 2) Handling Precautions

- VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor them when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help prevent these issues.
- In case of attaching LEDs, do not use adhesives that outgas organic vapor.
- Soldering should be done as soon as possible after opening the moisture-proof bag.
- Do not rapidly cool device after soldering.
- Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering.
- Components should not be mounted on warped (non coplanar) portion of PCB.
- The optical window part of LED needs to be handled carefully as below
  - Avoid touching the optical window especially with sharp tools such as Pincettes (Tweezers)
  - Avoid leaving fingerprints on optical window parts.
  - Optical window will attract dust so use covered containers for storage.
  - When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that excessive mechanical pressure on the surface of optical window parts must be prevented.
  - It is not recommend to cover the optical window of the LEDs with other resin (epoxy, urethane, etc)

## Precaution for Use

### Safety for eyes and skin

The Products emit high intensity ultraviolet light which can make your eyes and skin harmful, So do not look directly into the UV light and wear protective equipment during operation.

### Cleaning

This device is not allowed to be used in any type of fluid such as water, oil, organic solvent , etc.



### Others

The appearance and specifications of the product may be modified for improvement without notice.

When the LEDs are in operation the maximum current should be decided after measuring the package temperature.

The driving circuit must be designed to allow forward voltage only when it is ON or OFF. If the reverse voltage is applied to LED, migration can be generated resulting in LED damage.

Do not handle this product with acid or sulfur material in sealed space.

	 <b>CAUTION</b>
	<ul style="list-style-type: none"> <li>•UV LEDs emit high intensity UV light.</li> <li>•Do not look directly into the UV light during operation.</li> <li>•This can be harmful to your eyes and skin.</li> <li>•Wear protective eyewear to avoid exposure to UV light.</li> <li>•Attach caution labels to your products which contain UV LEDs.</li> </ul> <p><b>Avoid direct eye and skin exposure to UV light.</b>  <b>Keep out of reach of children.</b></p>

## Company Information

### Published by

Seoul Viosys © 2013 All Rights Reserved.

### Company Information



Seoul Viosys ([www.seoulviosys.com](http://www.seoulviosys.com)) manufactures light emitting diodes (LEDs) with a full range of UV wavelengths from UVC to UVA (under 400nm) for Industrial Curing, Air/Water Purification, Disinfection and Home appliance.

The company is one of the world leading UV LED supplier, holding more than 4,000 patents globally, while offering various kinds of LED technologies and application-solutions in High power UV LED, UV sensor, UV LED Lamp and variety of UV LED sourced Applications.

The company's broad product portfolio includes hybrid modules for unique applications such as UV disinfection, deodorization, UV purification as well as customized modules for your Application.

### Legal Disclaimer

Information in this document is provided in connection with Seoul Viosys products. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Seoul Viosys hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party. The appearance and specifications of the product can be changed to improve the quality and/or performance without notice.

	 <b>CAUTION</b>
	<ul style="list-style-type: none"><li>•UV LEDs emit high intensity UV light.</li><li>•Do not look directly into the UV light during operation. This can be harmful to your eyes and skin.</li><li>•Wear protective eyewear to avoid exposure to UV light.</li><li>•Attach caution labels to your products which contain UV LEDs.</li></ul> <p><b>Avoid direct eye and skin exposure to UV light. Keep out of reach of children.</b></p>