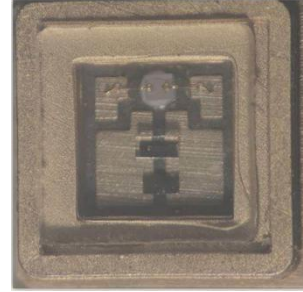


ULTRA VOILET LED

GNL- 3535UV



Product Brief

Description

- The product is UVA+UVC - LED.
- Package Size :3.5x3.5x1.47mm.
- Quartz Glass package .
- WP:UVA:390-405nm UVC: 265-285nm
- The package design coupled with careful selection of component materials allow these products to perform with high reliability

Features and Benefits

- High optical output power
- Long life and low light attenuation
- Environmental protection, energy saving and high reliability
- Durable, shock-proof, easy to design, suitable for multi-field applications
- Built-in UVA + UVC dual-wavelength chip, unique design and application more widely
- Long operating life

Key Applications

- Fluorescent spectroscopy
- Sensors and monitors
- Currency detector
- Phototherapy
- Bio-Analysis / Detection

Table of Contents

Index	
•Product Brief	
•Table of Contents	
•Performance Characteristics	
•Characteristics Graph	
•Mechanical Dimensions	
•Emitter Tape & Reel Packaging	
• Soldering Conditions	
•CAUTIONS	

Performance Characteristics

Table 1. Product Selection Guide, $I_F=20\text{mA}$, $T_j= 25^\circ\text{C}$, RH30%

Part Number	RANK	Forward Voltage ^[1]		RANK	Radiant Flux		RANK	Wavelength ^[2]		RANK	Material
		VF(V)			Φ e(mW)			WP(nm)			
		Min	Max		Min	Max		Min	Max		
UVC	V1	5.0	5.5	E1	1.0	2.0	B1	265	270	A1	AlN
	V2	5.5	6.0	E2	2.0	3.0	B2	270	275	A2	Al ₂ O ₃
	V3	6.0	6.5	E3	3.0	4.0	B3	275	280	A3	Copper bracket
	V4	6.5	7.0	E4	4.0	5.0	B4	280	285	/	/

Notes :

(1) LW maintains a tolerance of ± 0.1 on Forward Voltage measurements.

Performance Characteristics

Table 2. Characteristics, $I_F=20\text{mA}$, $T_j= 25^\circ\text{C}$, RH30%

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
Forward Current	I_F	-	20	40	mA
Forward Voltage (UVC) ^[1]	V_F	-	5.5	-	V
Peak Wavelength (UVC) ^[1]	λ_p	265	-	285	nm
Peak Wavelength (UVA) ^[1]	λ_p	390	-	405	nm
Viewing Angle ^[2]	$2\Theta_{1/2}$	-	120	-	Deg.
Thermal resistance (J to S) ^[3]	$R\theta_{J-S}$	-	10	-	$^\circ\text{C/W}$
ESD Sensitivity(HBM)	-	Class 3A JESD22-A114-E			

Table 3. Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Forward Current	I_F	40	mA
Junction Temperature	T_j	125	$^\circ\text{C}$
Operating Temperature	T_{opr}	-30~ + 60	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30 ~ + 100	$^\circ\text{C}$

Notes :

(1) Tolerance : $V_F : \pm 0.1\text{V}$, $I_V : \pm 5\%$, $\lambda_p : \pm 3\text{nm}$.

(2) $2\Theta_{1/2}$ is the off-axis where the luminous intensity is 1/2 of the peak intensity.

(3) Thermal resistance : $R\theta_{J-S}$ (Junction / solder).

- LED's properties might be different from suggested values like above and below tables if operation condition will be exceeded our parameter range. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.
- Thermal resistance can be increased substantially depending on the heat sink design/operating condition, and the maximum possible driving current will decrease accordingly.

Characteristics Graph

Fig 1. Relative Spectrum Power Distribution, $T_j = 25^{\circ}\text{C}$

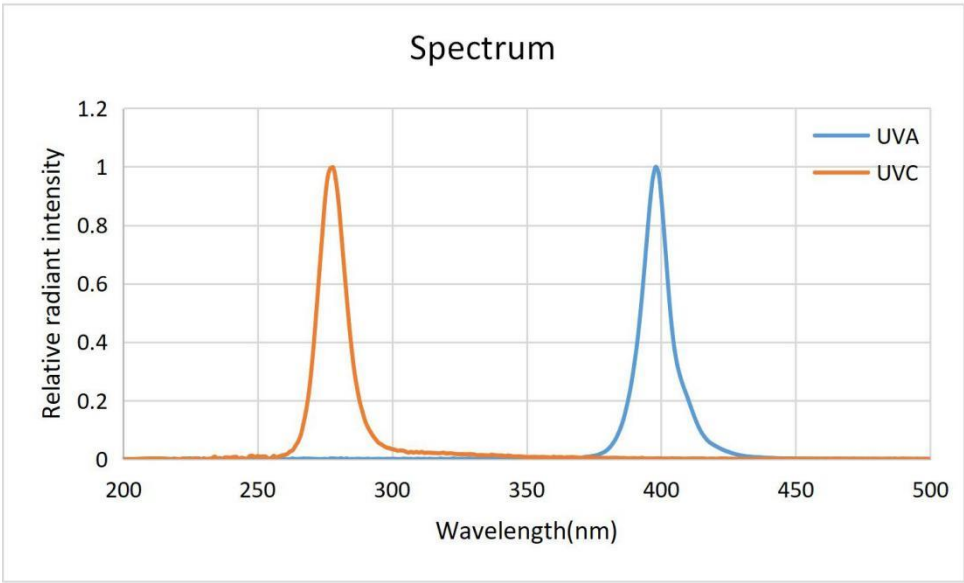
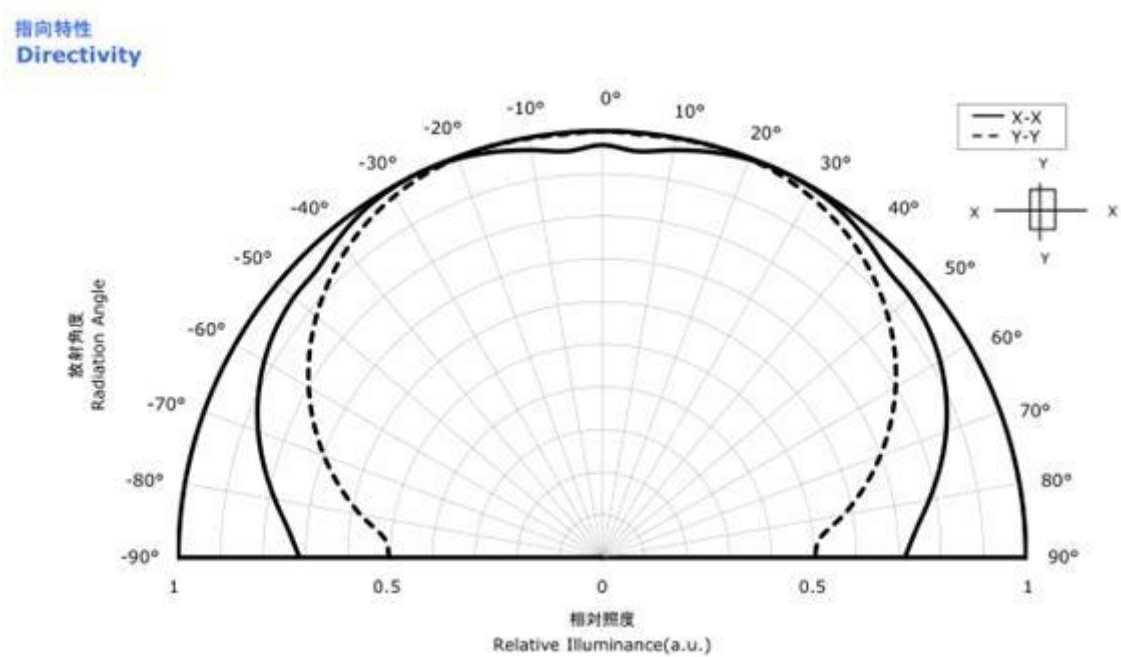


Fig 2. Radiation diagram, $T_j = 25^{\circ}\text{C}$



Characteristics Graph

Fig 3. UVC Forward Voltage vs. Forward Current, $T_j = 25^\circ\text{C}$

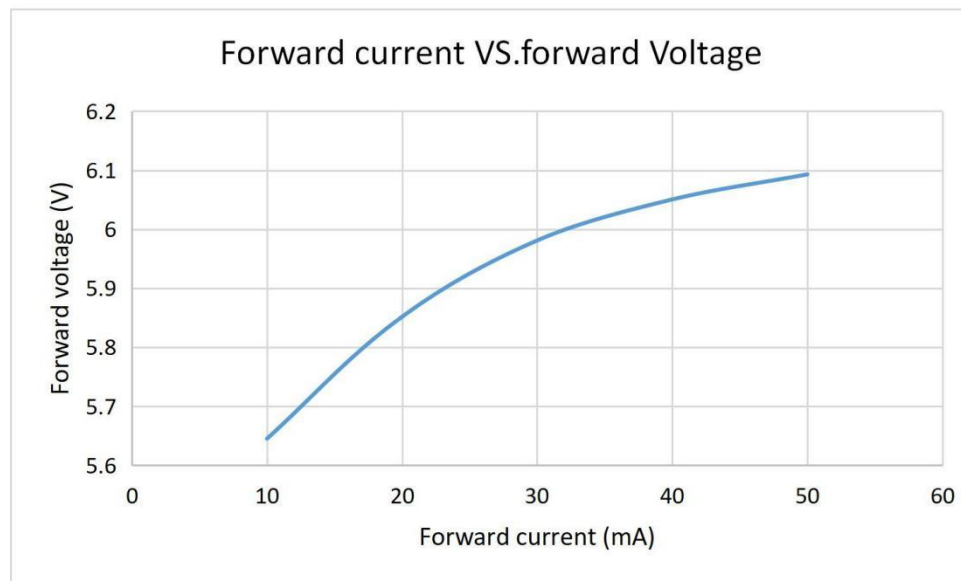
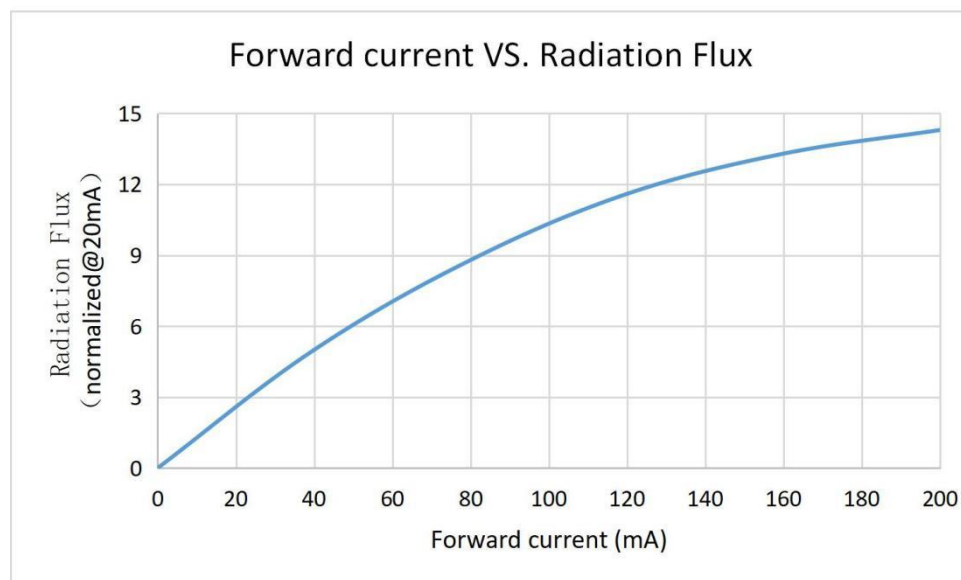
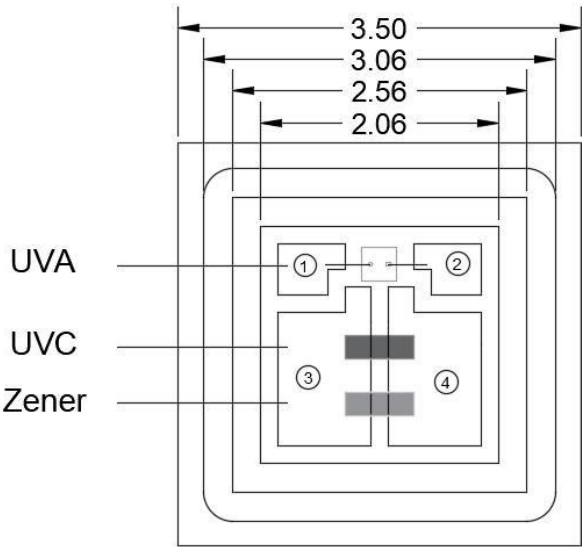


Fig 4. Forward Current vs. Radiation Flux, $T_j = 25^\circ\text{C}$

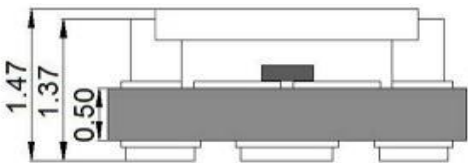
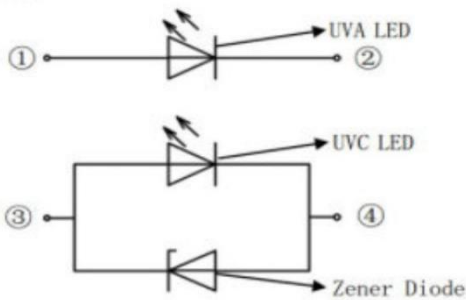
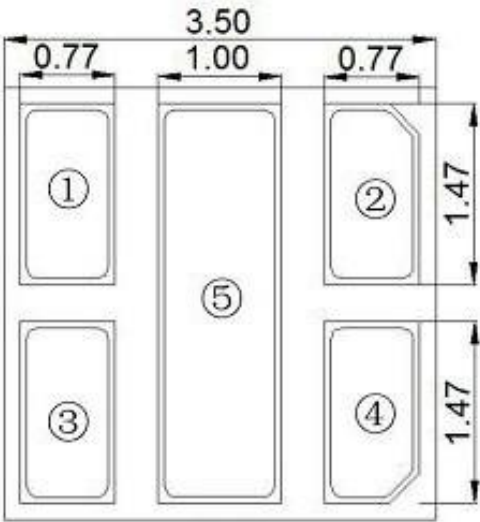


Mechanical Dimensions

Top View

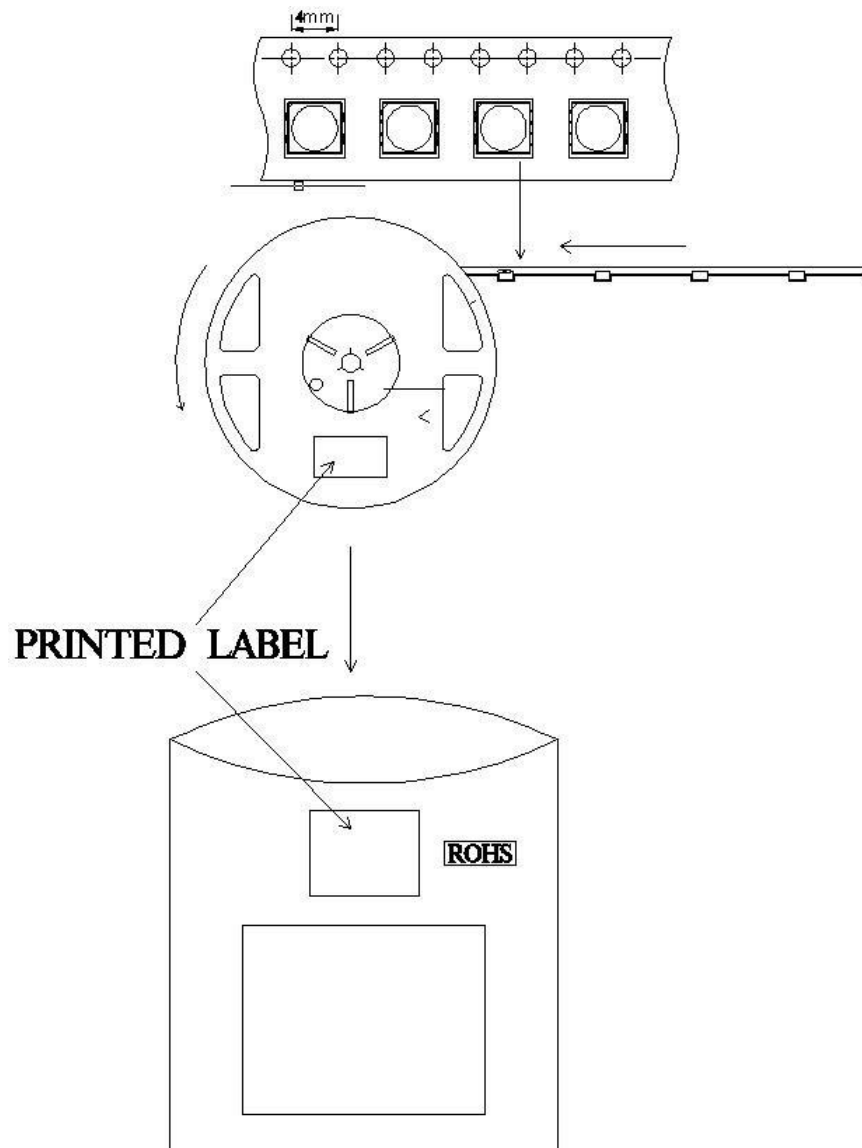


Bottom View



- *Notes :
- (1) All dimensions are in millimeters.
 - (2) Undefined tolerance is $\pm 0.2\text{mm}$

Emitter Tape & Reel Packaging

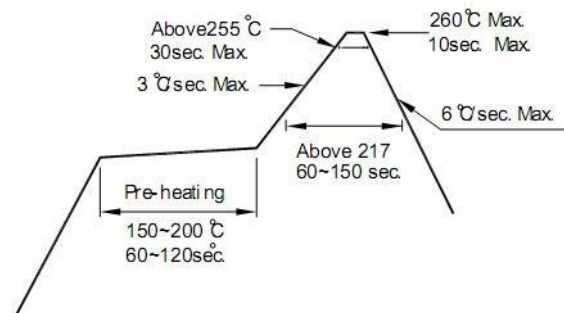


Notes :

- (1) Loaded Quantity 500pcs per reel
- (2) Empty component pockets are sealed with top cover tape
- (3) The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications

Soldering Conditions

Reflow Soldering Conditions (Pb Free)



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T _{smax} to T _p)	3° C/second max.	3° C/second max.
- Temperature Min (T _{smin})	100 °C	150 °C
- Temperature Max (T _{smax})	150 °C	200 °C
- Time (T _{smin} to T _{smax}) (ts)	60-120 seconds	60-120 seconds
Time maintained above:		
- Temperature (T _L)	183 °C	217 °C
- Time (t _L)	60-150 seconds	60-150 seconds
Peak Temperature (T _p)	215°C	260°C
Time within 5°C of actual Peak Temperature (tp)2	10-30 seconds	20-40 seconds
Ramp-down Rate	6 °C/second max.	6 °C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

Notes:

- (1) Reflow soldering should not be done more than two times.
- (2) When soldering, do not put stress on the LEDs during heating.
- (3) When hand soldering, the temperature of the iron must less than 260 °C for 3 seconds.
- (4) The hand solder should be done only one times
- (5) Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.
- (6) Die slug is to be soldered.
- (7) When soldering, do not put stress on the LEDs during heating.
- (8) After soldering, do not warp the circuit board.

CAUTIONS

1. Handling Precautions

- Do not handle the LEDs with bare hands as it will contaminate the LENS surface and may affect the optical characteristics.
- When handling the product with tweezers, be careful not to apply excessive force to glass LENS as it may cause the surface scratch.
- Dropping the product may cause damage.

2. Electrostatic Discharge (ESD)

- The product are sensitive to static electricity or surge voltage. ESD can damage a die and its reliability. When handling the products, the following measure against electrostatic discharge are strongly recommended:
 - Eliminating wrist strap, ESD footwear, clothes, and floors
 - Grounded workstation equipment and tools
 - ESD table/shelf mat made of conductive materials
- Ensure that tools, jigs and machines that are being used are properly grounded and that proper grounding techniques are used in work areas. For devices/equipment that mount the LEDs, protection against surge voltages should also be used.
- The customer is advised to check if the LEDs are damage by ESD When performing the characteristics inspection of the LEDs in the application.
Damage can be detected with a forward voltage measurement at low current($\leq 1\text{mA}$).

3. Eye Safety

- Please proceed with caution when handling any UVLEDs driven at low or high current. Since UV light can be harmful to eyes, do Not look directly into the UV light, even through an optical instrument.
- UV protective glasses are required to use in order to avoid damage by UV light in case of viewing UV light directly.