



VL440-5-15

TECHNICAL DATA



UV LED, 5 mm

InGaN

Features

- Zener diode is built in the protective circuit against static electricity
- Low Voltage DC Operated
- High Power Intensity
- Complies with RoHS Directive



Specifications (25°C)

Item	Symbol	Value	Unit
Absolute Maximum Ratings			
DC Forward Current	I_F	20	mA
Peak Pulse Forward Current *	I_{FP}	100	mA
Allowable Reverse Current	I_R	50	mA
Power Dissipation	P_D	80	mW
Operating Temperature	T_{OP}	-40 ... +85	°C
Storage Temperature	T_{STG}	-40 ... +100	°C
Soldering Temperature (for 5 sec.)	T_{SOL}	260 ± 5	°C

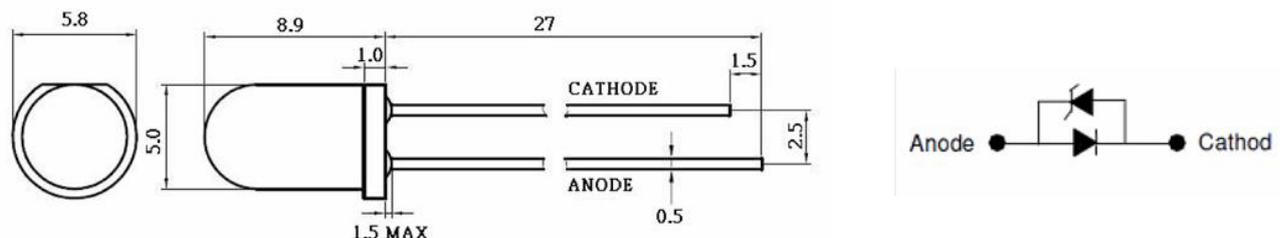
* Note: 1/10 duty cycle, 0.1 ms pulse width

Item	Symbol	Min.	Typ.	Max.	Unit
Optical Specifications					
CW Output Power *1	P_O	10.0	-	16.0	mW
Peak Wavelength *2	λ_P	435	440	445	nm
Viewing Angle	φ		15		deg.
Electrical Specifications					
Forward Current	I_F	-	20	-	mA
Forward Voltage *3	V_F	3.2	-	4.2	V

* Note:

1. Peak wavelength measurement allowance is ± 2 nm
2. Optical output measurement allowance is ± 10%
3. Forward voltage measurement allowance is ± 0.2 V

Outline Dimensions



* Note:

1. Unit: mm
2. Tolerance: ± 0.15 mm



Device Materials

Item	Material
Chip Die	InGaN based
Zener Diode	Si
Lead Frame	Ag Plating, Iron Alloy
Bonding wire	Au
Encapsulation	UV-resistant Epoxy Resin (Water Clear)



Precaution for Use

1. Cautions

- This device is a UV LED, which radiates UV light during operation.
- DO NOT look directly into the UV light or look through the optical system. To prevent in adequate exposure of UV radiation, wear UV protective glasses.

2. Lead Forming

- When forming leads, the leads should be bent at a point at least 3 mm from the base of the lead. DO NOT use the base of the leadframe as a fulcrum during lead forming.
- Lead forming should be done before soldering.
- DO NOT apply any bending stress to the base of the lead. The stress to the base may damage the LED's characteristics or it may break the LEDs.
- When mounted the LEDs onto the printed circuit board, the holes on the circuit board should be exactly aligned with the leads of LEDs. If the LEDs are mounted with stress at the leads, it causes deterioration of the lead and it will degrade the LEDs.

3. Soldering Conditions

- Solder the LEDs no closer than 3 mm from the base of the lead.
- Recommended soldering conditions:

Dip Soldering	
Pre-Heat	120 °C Max.
Pre-Heat Time	60 Seconds Max.
Solder Bath Temperature	260 °C Max.
Dipping Time	5 Seconds Max.
Dipping Position	No lower than 3 mm from the base of the epoxy bulb

- DO NOT apply any stress to the lead particularly when heat.
- The LEDs must not be reposition after soldering.
- After soldering the LEDs, the lead should be protected from mechanical shock or vibration until the LEDs return to room temperature.
- When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.
- Cut the LED leads at room temperature. Cutting the leads at high temperature may cause the failure of the LEDs.

4. Static Electricity

- The LEDs are very sensitive to Static Electricity and surge voltage. So it is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the LEDs.

5. Heat Generation

- The powered LEDs generate heat. Heat dissipation should be considered in the application design to avoid the environmental conditions for operation in excess of the absolute maximum ratings.