



VL440-EMITTER

- UV High Power LED
- 440 nm, 400-500 mW
- Emitter Package, containing Zener diode
- Viewing Angle: 140°



Description

VL440-EMITTER is a InGaN based, High Power UV single chip LED with a typical peak wavelength of **440 nm** and radiation of **400-500 mW**. It comes in standard emitter package, containing SI Zener diode for ESD protection, with Au soldering pins, Au plating copper heat sink, and molded with silicone resin.

Maximum Ratings ($T_{CASE}=25^{\circ}C$)

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation	P_D		1300	mW
Forward Current	I_F		350	mA
Pulse Forward Current * ¹	I_{FP}		500	mA
Reverse Voltage	V_F		5	V
Junction Temperature	T_J		125	°C
Operating Temperature	T_{CASE}	- 40	+ 105	°C
Storage Temperature	T_{STG}	- 40	+ 120	°C
Lead Solder Temperature * ²	T_{SLD}		+ 260	°C

*¹ duty=1%, pulse width = 10 μ s

*² must be completed within 5 seconds

Electro-Optical Characteristics ($T_{CASE}=25^{\circ}C$)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength * ¹	λ_P	$I_F=350mA$	435		445	nm
Forward Voltage * ²	V_F	$I_F=350mA$	3.0		4.0	V
Radiated Power * ³	P_O	$I_F=350mA$	400		500	mW
Viewing Angle	φ	$I_F=100mA$		140		deg.

*¹ measurement allowance: ± 1 nm

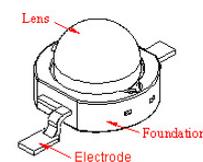
*² measurement allowance: $\pm 10\%$

*³ measurement allowance: ± 0.1 V

Device Materials

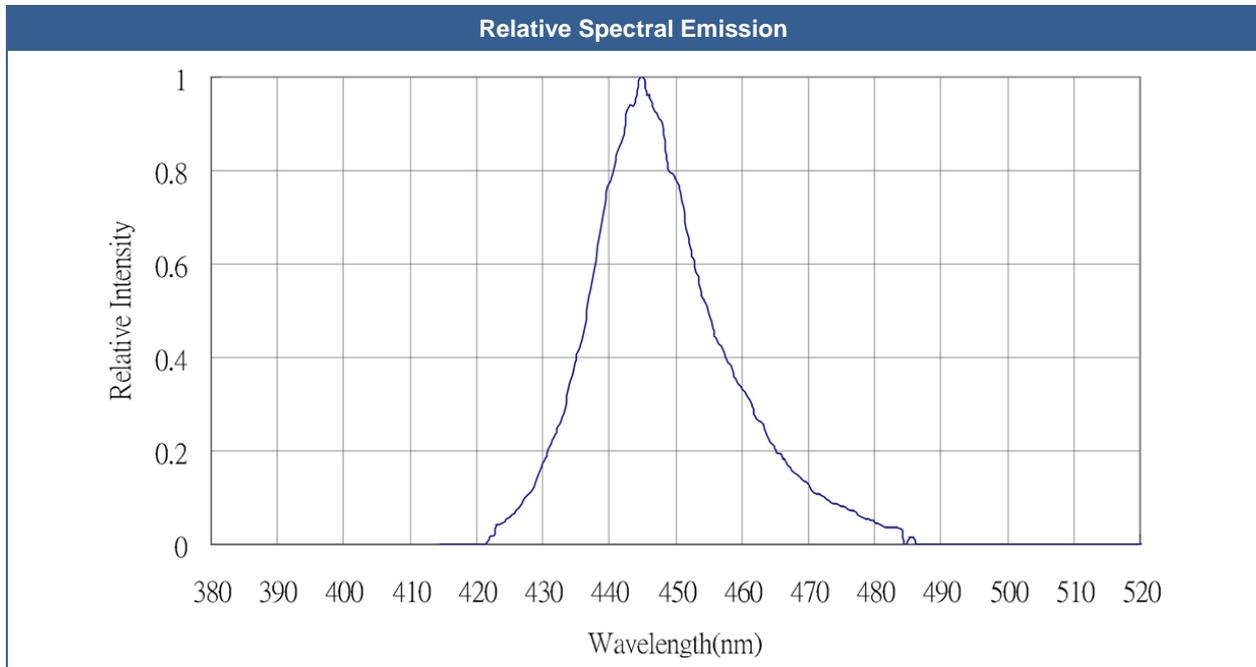
Item	Material
Foundation	Plastic
Lens	Silicone Resin
Electrodes	Au
Lead Frame *	Au Plating Copper Alloy

* may be connected to Anode or Cathode

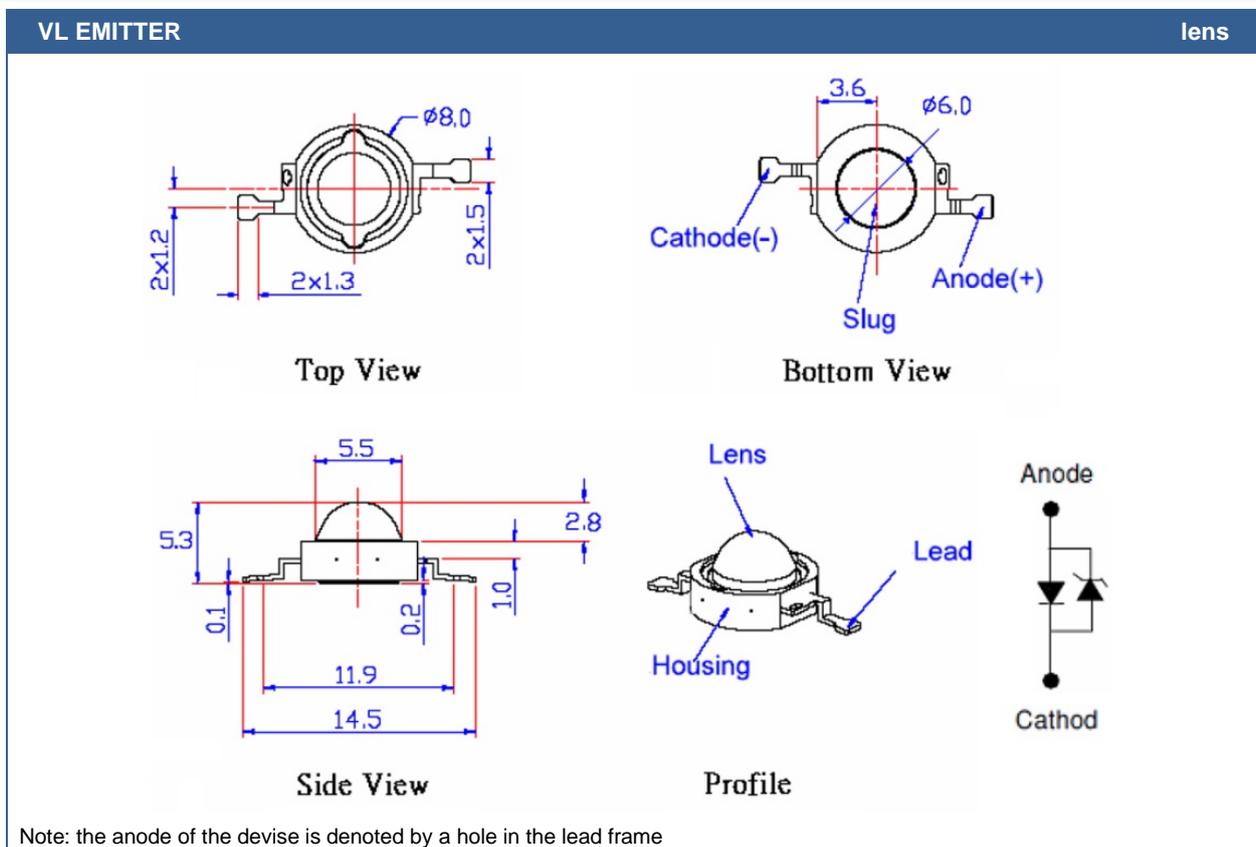




Typical Performance Curves



Outline Dimensions



Note: the anode of the devise is denoted by a hole in the lead frame

All Dimensions in mm; Tolerance: ± 0.2 mm



Precautions

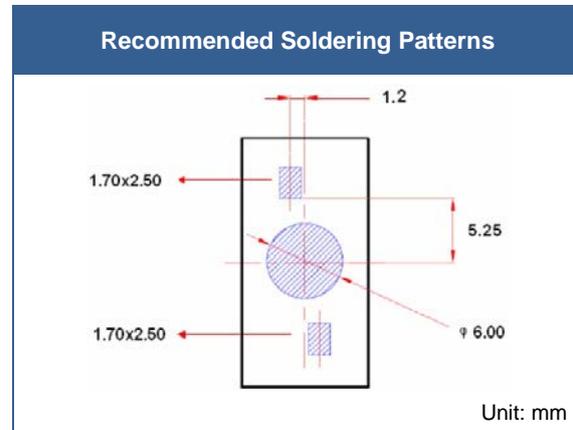
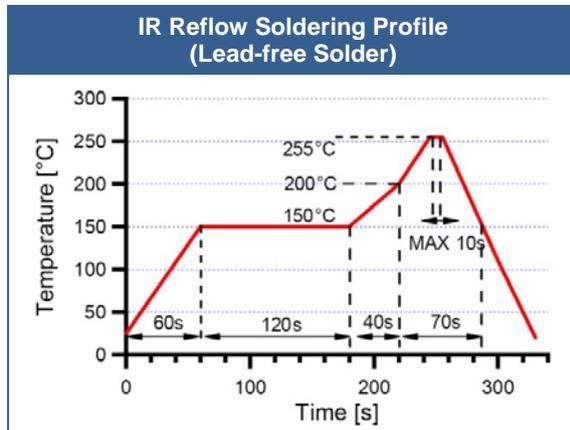
Soldering:

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering

Recommended soldering conditions:

This LED is designed to be reflow soldered on to a PCB. If dip soldered or hand soldered, its reliability cannot be guaranteed.

Nitrogen reflow soldering is recommended. Air flow soldering conditions can cause optical degradation, caused by heat and/or atmosphere.



Above table specifies the maximum allowed duration and temperature during soldering. It is strongly advised to perform soldering at the shortest time and lowest temperature possible.

Cleaning:

Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended

DO NOT USE acetone, chloroform, trichloroethylene, or MKS

DO NOT USE ultrasonic cleaners

Static Electricity:

LEDs are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

Radiation:

During operation these LEDs do emit **high intensity UV light**, which is hazardous to skin and eyes, and may cause cancer. Do avoid exposure to the emitted light. **Protective glasses are recommended.** It is further advised to attach a warning label on products/systems.

Operation:

Do only operate LEDs with a current source.

Running these LEDs from a voltage source will result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.