



## VL380-EMITTER

- UV High Power LED
- 380 nm, 200-300 mW
- Emitter Package, containing Zener diode
- Viewing Angle: 140°



### Description

**VL380-EMITTER** is a InGaN based, High Power UV single chip LED with a typical peak wavelength of **380 nm** and radiation of **200-300 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 * <sup>1</sup>   | $I_{FP}$   |        | 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 * <sup>2</sup> | $T_{SLD}$  |        | + 260 | °C   |

\*<sup>1</sup> duty=1%, pulse width = 10  $\mu$ s

\*<sup>2</sup> must be completed within 5 seconds

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

| Parameter                      | Symbol      | Conditions  | Values |      |      | Unit |
|--------------------------------|-------------|-------------|--------|------|------|------|
|                                |             |             | Min.   | Typ. | Max. |      |
| Peak Wavelength * <sup>1</sup> | $\lambda_P$ | $I_F=350mA$ | 375    |      | 385  | nm   |
| Forward Voltage * <sup>2</sup> | $V_F$       | $I_F=350mA$ | 3.0    |      | 4.0  | V    |
| Radiated Power * <sup>3</sup>  | $P_O$       | $I_F=350mA$ | 200    |      | 300  | mW   |
| Viewing Angle                  | $\varphi$   | $I_F=100mA$ |        | 140  |      | deg. |

\*<sup>1</sup> measurement allowance:  $\pm 1$  nm

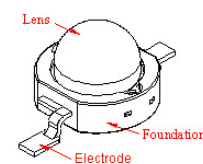
\*<sup>2</sup> measurement allowance:  $\pm 10\%$

\*<sup>3</sup> measurement allowance:  $\pm 0.1$  V

### Device Materials

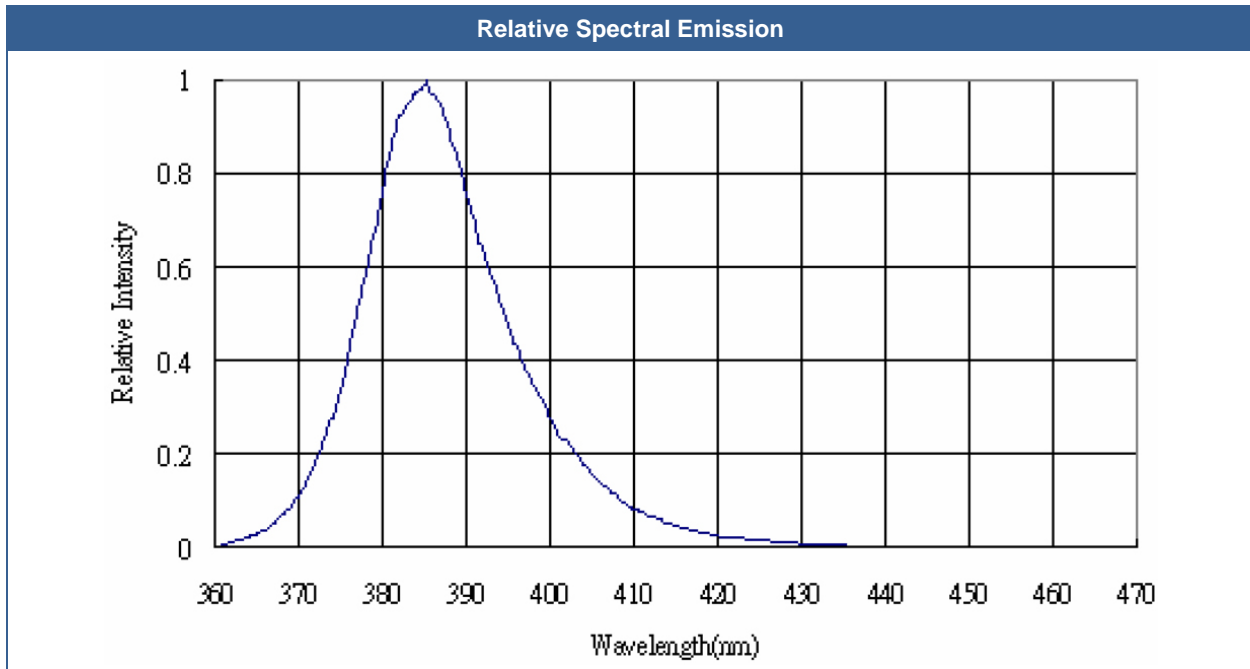
| Item         | Material                |
|--------------|-------------------------|
| Foundation   | Plastic                 |
| Lens         | Silicone Resin          |
| Electrodes   | Au                      |
| Lead Frame * | Au Plating Copper Alloy |

\* may be connected to Anode or Cathode

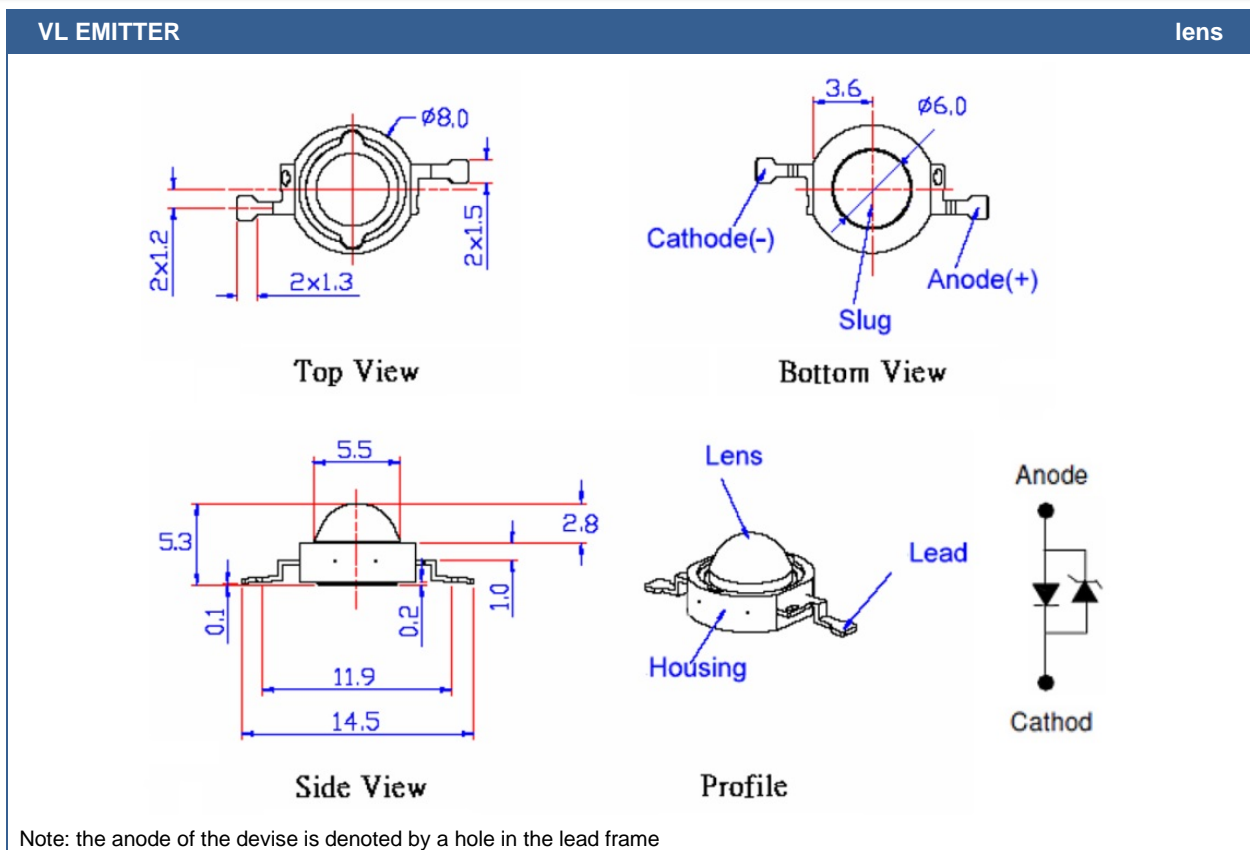




## Typical Performance Curves



## Outline Dimensions



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

All Dimensions in mm; Tolerance:  $\pm 0.2$  mm



## Precautions

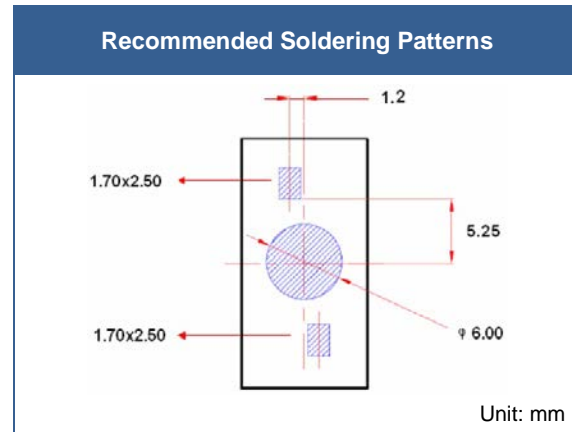
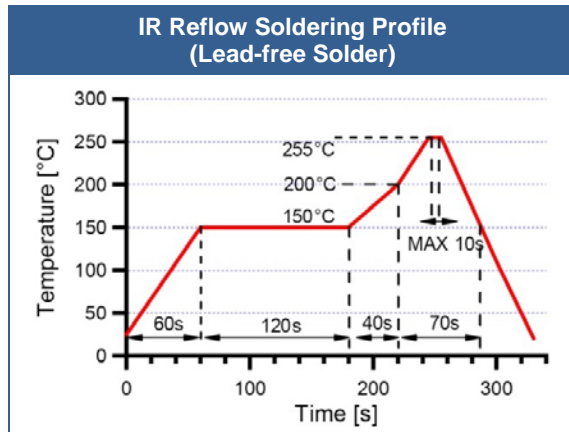
### Soldering:

- 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.