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## UVLED-385-NV1

- Ultraviolet Light Emission Source
- 385 nm, 1.3 W
- 3535 Ceramic with Silicone Resin Lens
- ESD Protection Device



### Description

**UVLED-385-NV1** is an ultraviolet light emission source, typically emitting at **385 nm** with an optical output power of **1.3 W** and narrow bandwidth. The hermetically sealed ceramic SMD package features a silicone resin lens and integrated ESD protection device.

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

| Parameter              | Symbol    | Values |       | Unit        |
|------------------------|-----------|--------|-------|-------------|
|                        |           | Min.   | Max.  |             |
| Power Dissipation      | $P_D$     |        | 5     | W           |
| Forward Current        | $I_F$     |        | 1.4   | A           |
| Pulse Forward Current* | $I_{FP}$  |        | 2.0   | A           |
| Reverse Current        | $I_R$     |        | 85    | mA          |
| Junction Temperature   | $T_J$     |        | + 125 | $^{\circ}C$ |
| Operation Temperature  | $T_{OPR}$ | - 10   | + 85  | $^{\circ}C$ |
| Storage Temperature    | $T_{STG}$ | - 40   | + 100 | $^{\circ}C$ |

\*  $I_{FP}$  conditions with pulse width  $\leq 10ms$  and duty cycle  $\leq 10\%$

### Electro-Optical Characteristics ( $T_{CASE} = 25^{\circ}C$ , $I_F = 700 mA$ )

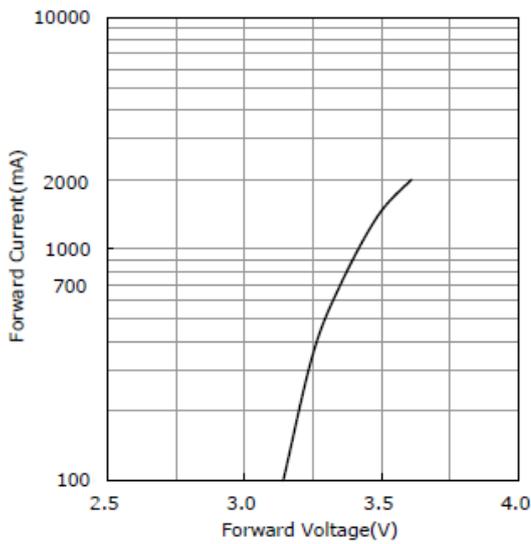
| Parameter             | Symbol          | Values |            |      | Unit          |
|-----------------------|-----------------|--------|------------|------|---------------|
|                       |                 | Min.   | Typ.       | Max. |               |
| Peak Wavelength       | $\lambda_P$     | 380    | <b>385</b> | 390  | nm            |
| Radiated Power        | $P_O$           | 2.8    | 3.4        | 3.8  | W             |
| Spectral Width (FWHM) | $\Delta\lambda$ |        | 11         |      | nm            |
| Forward Voltage       | $V_F$           |        | 3.85       |      | V             |
| Beam Angle            | $2\theta_{1/2}$ |        | 130        |      | deg.          |
| Thermal Resistance    | $R_{th}$        |        | 2.6        | 3.1  | $^{\circ}C/W$ |



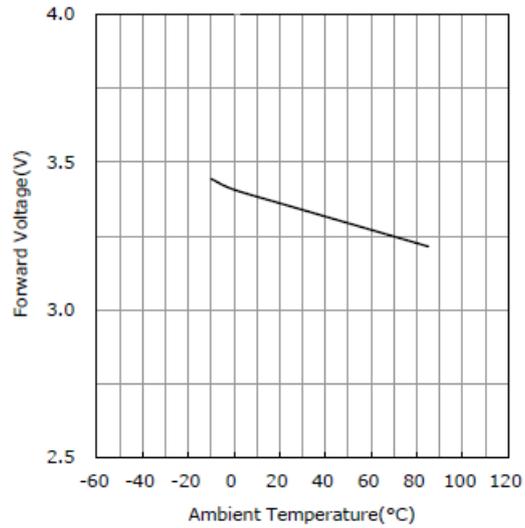


## Performance Characteristics ( $T_{CASE} = 25^{\circ}C$ )

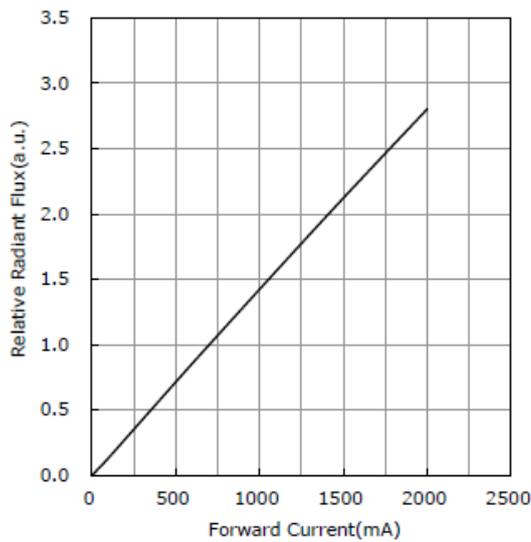
### Forward Current vs. Forward Voltage



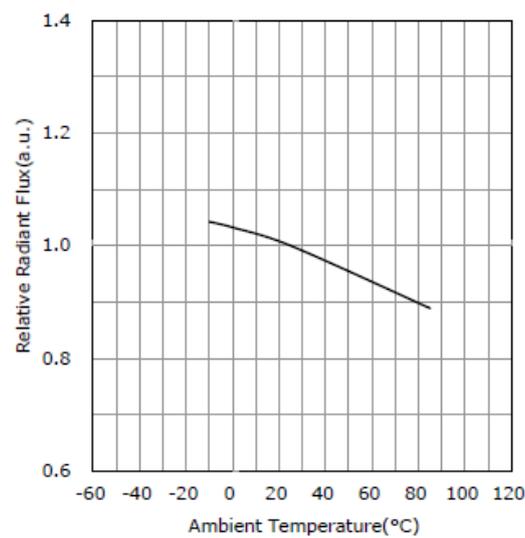
### Forward Voltage vs. Ambient Temperature



### Forward Current vs. Radiant Flux



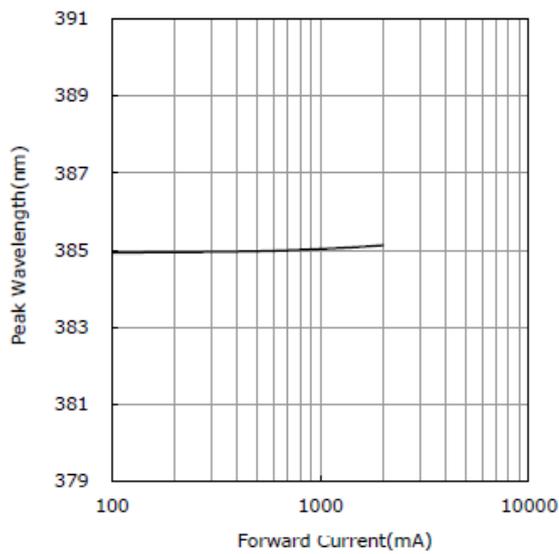
### Ambient Temp. vs. Radiant Flux



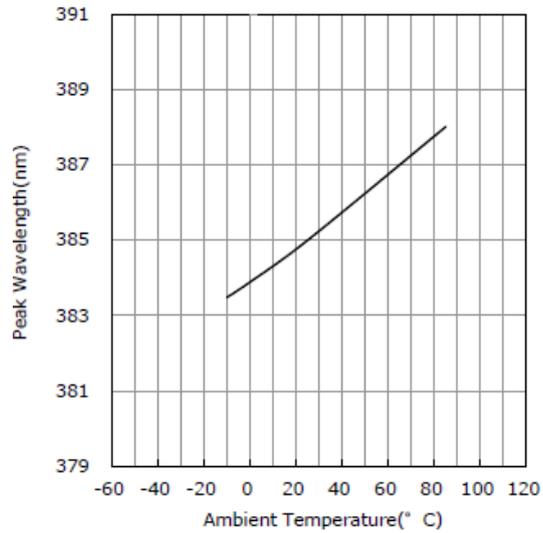


## Performance Characteristics ( $T_{CASE} = 25^{\circ}C$ )

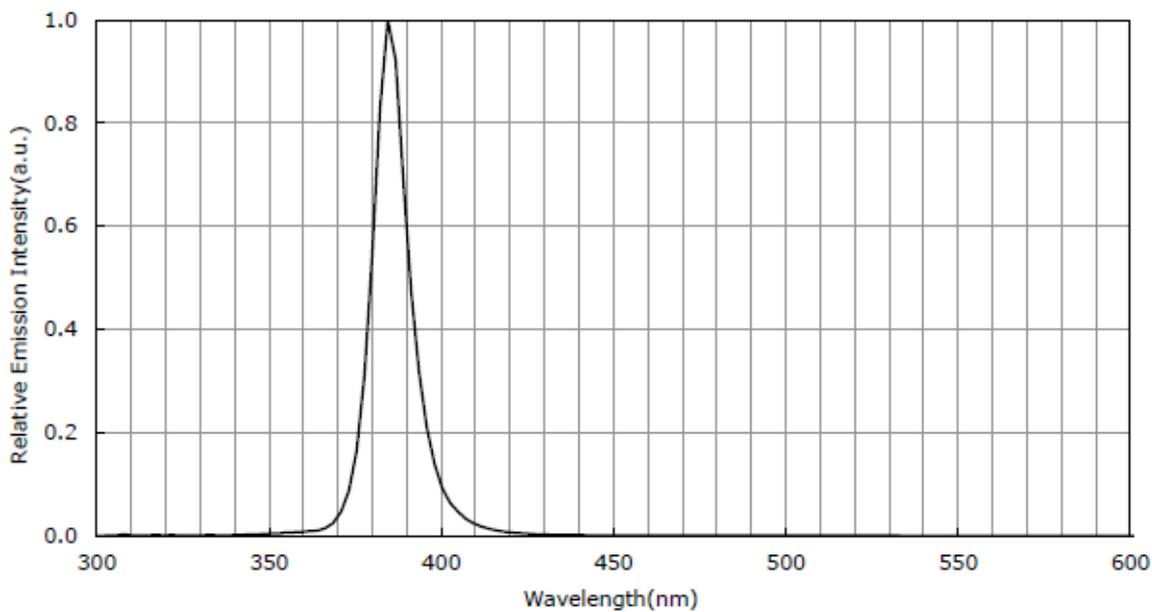
### Forward Current vs. Peak Wavelength



### Ambient Temp. vs. Peak Wavelength

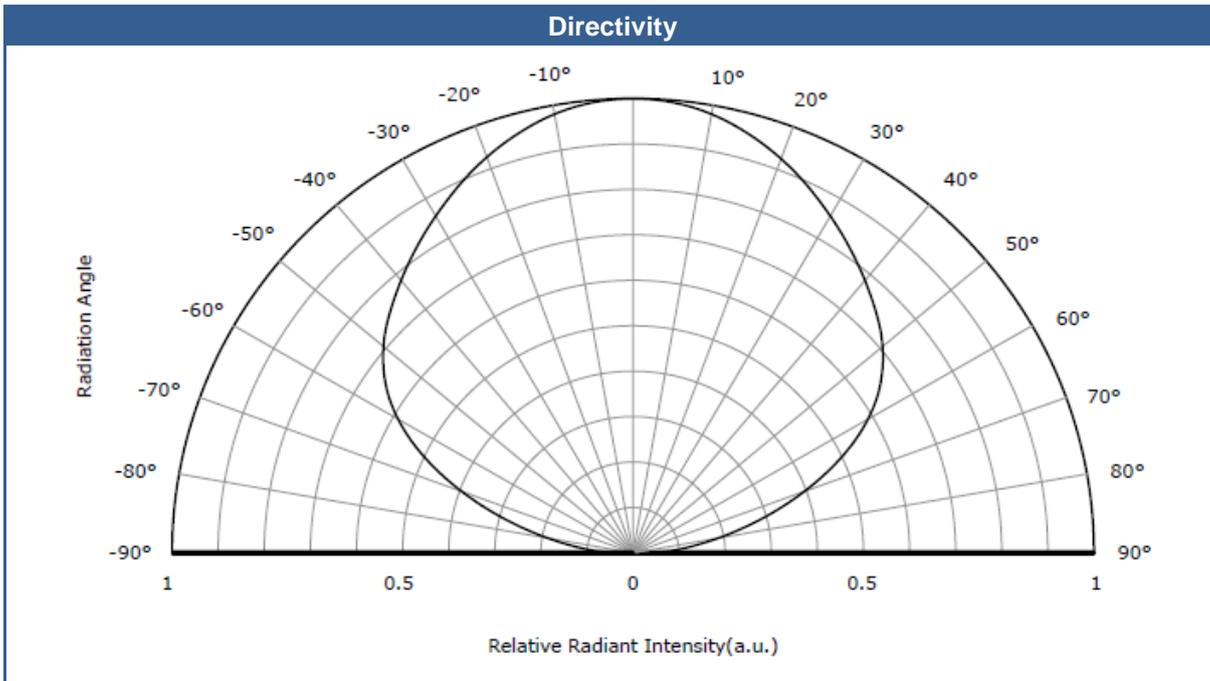


### Spectrum



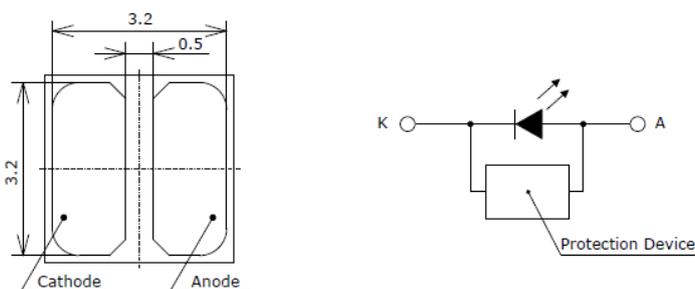
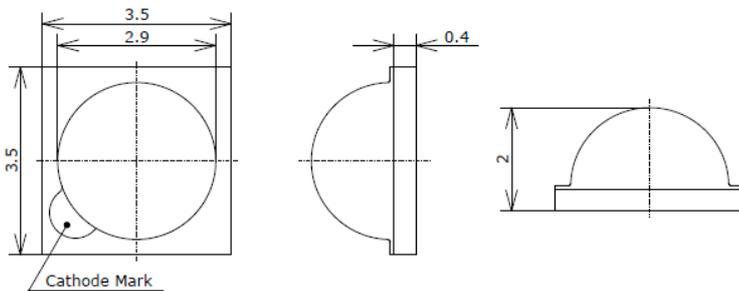


## Performance Characteristics ( $T_{CASE} = 25^{\circ}C$ )



## Outline Dimensions

### 3535 SMD package



All dimensions in mm [in]



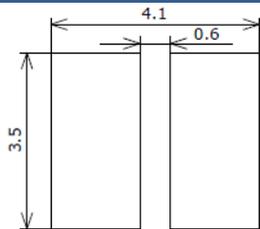
## Device Materials

| Pin #      | Material       |
|------------|----------------|
| Package    | Ceramics       |
| Lens       | Silicone Resin |
| Electrodes | Au-plated      |
| Adhesive   | Silicone Resin |



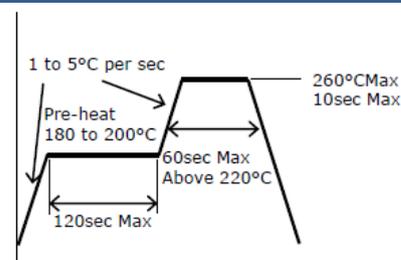
## Soldering Information

### Recommended Solder Pad Layout



- all dimensions in mm
- drawing not to scale

### Recommended Reflow Soldering Profile



- IPC/JDEC J-STD-020C

## Precautions for Use

### 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.

### UV-Radiation:

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



### Operation:

- **Do only operate these LEDs with a current source.**  
Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.
- Compliance to the maximum electrical specifications is paramount.

### Storage:

- **Recommended storage temperature:  $\leq 30\text{ }^{\circ}\text{C}$**
- **Recommended storage relative humidity:  $\leq 70\text{ }%$**