



UVLED-405-NV1

- Ultraviolet Light Emission Source
- 405 nm, 1.42 W
- 3535 Ceramic with Silicone Resin Lens
- ESD Protection Device



Description

UVLED-405-NV1 is an ultraviolet light emission source, typically emitting at **405 nm** with an optical output power of **1.42 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		5.04	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		+ 130	$^{\circ}C$
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 ($T_{CASE} = 25^{\circ}C$, $I_F = 700 mA$)

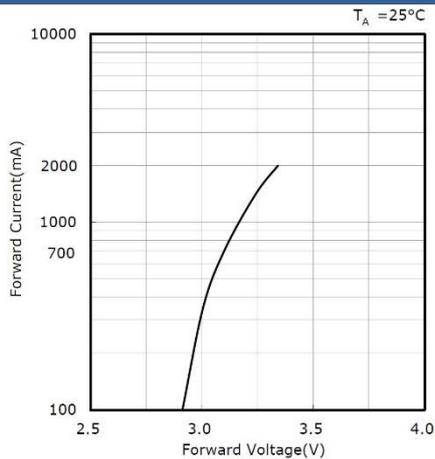
Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Peak Wavelength	λ_P		405		nm
Radiated Power	P_O		1.42		W
Spectral Width (FWHM)	$\Delta\lambda$		12		nm
Forward Voltage	V_F		3.1		V
Beam Angle	$2\theta_{1/2}$		130		deg.
Thermal Resistance	R_{th}		2.4	3.1	$^{\circ}C/W$



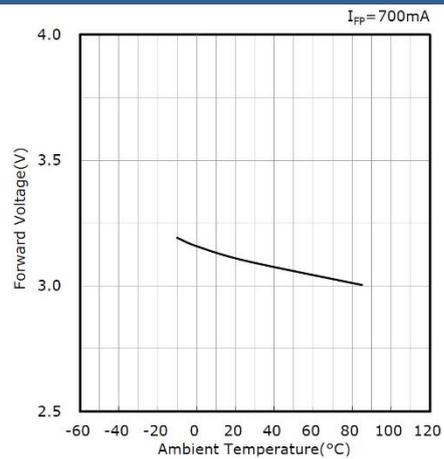


Performance Characteristics ($T_{CASE} = 25^{\circ}C$)

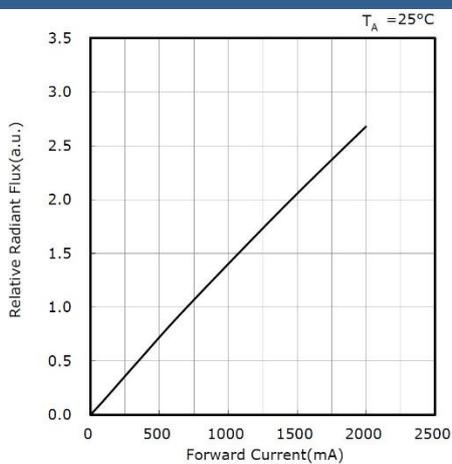
Forward Current vs. Forward Voltage



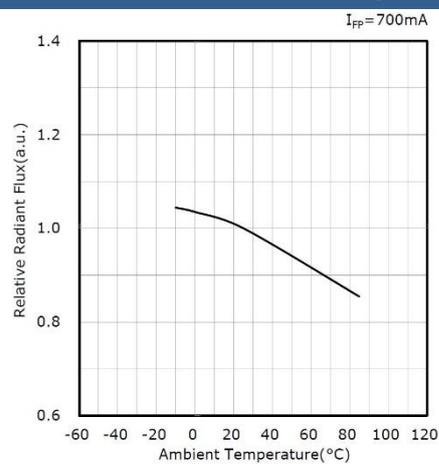
Forward Voltage vs. Ambient Temperature



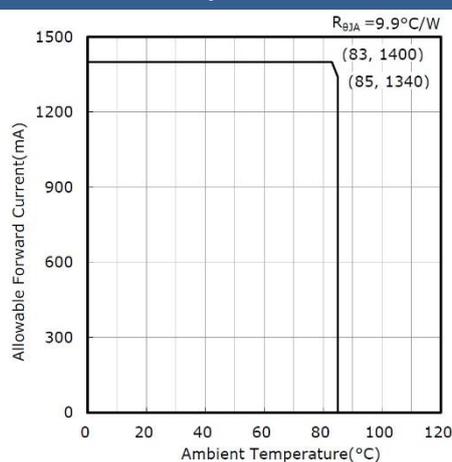
Rel. Radiant Flux vs. Forward Current



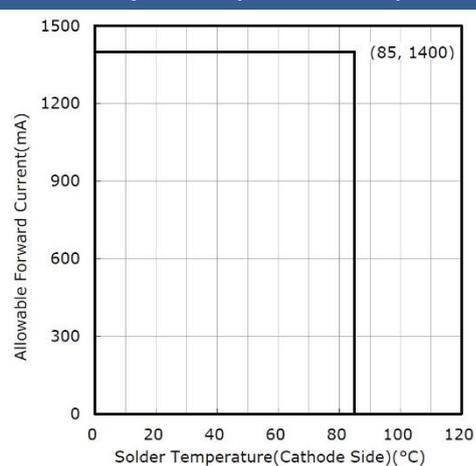
Rel. Radiant Flux vs. Ambient Temperature



Allowed Forward Current vs. Ambient Temperature

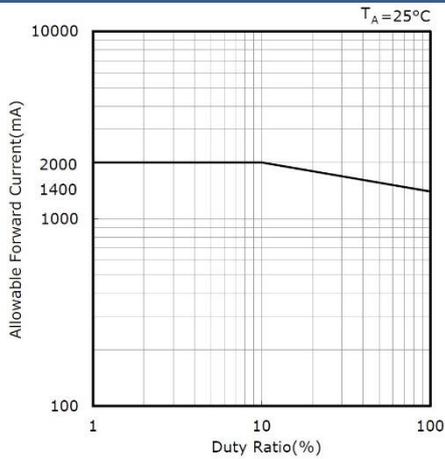


Allowed Forward Current vs. Solder Temperature (Cathode Side)

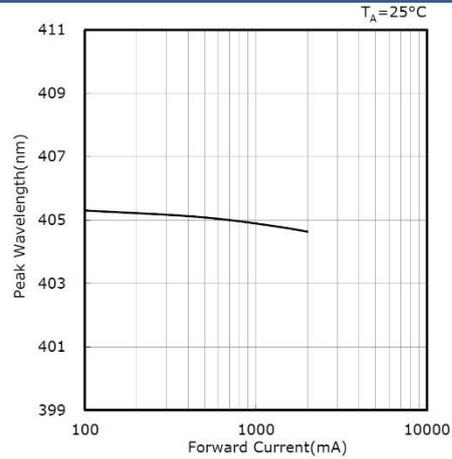




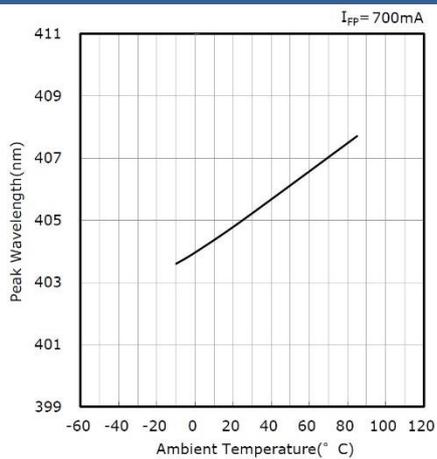
Allowed Forward Current vs. Duty Ratio



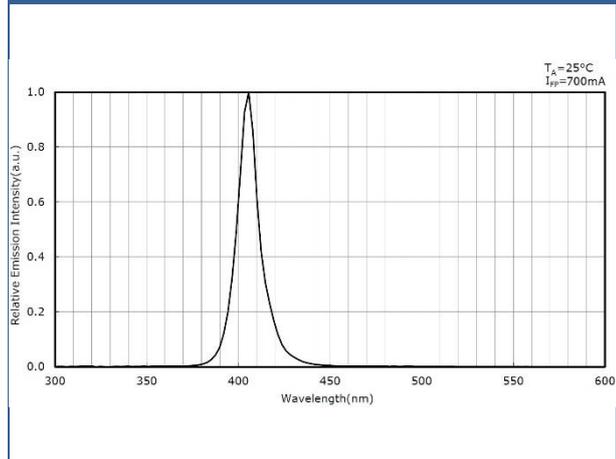
Peak Wavelength vs. Ambient Temperature



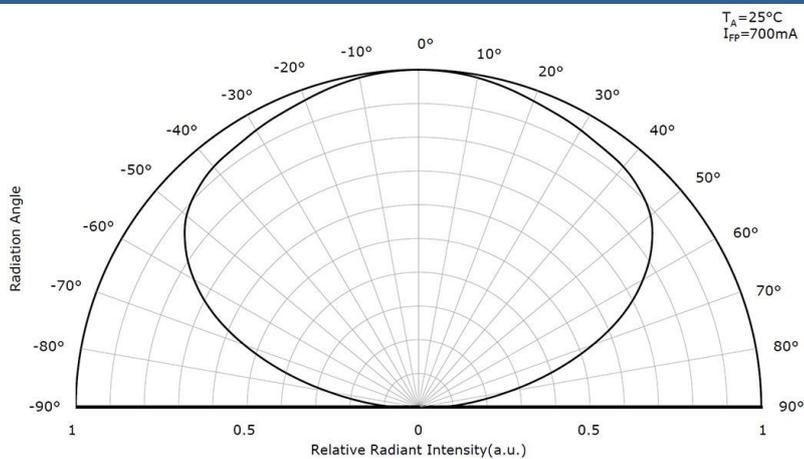
Peak Wavelength vs. Forward Current



Relative Spectral Emission



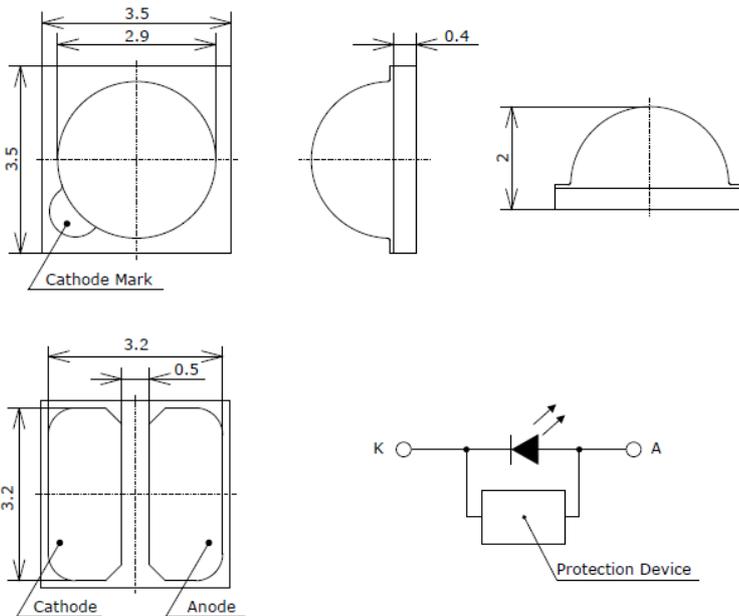
Directivity





Outline Dimensions

3535 SMD package



All dimensions in mm [in]

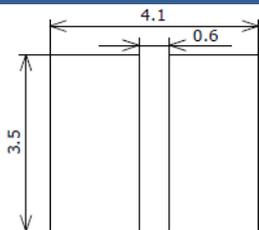
Device Materials

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



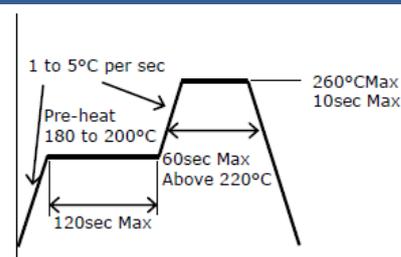
Soldering Information

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: $\leq 70\text{ }\%$**