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RLCU-390

- **UV SMD LED**
- **390 nm, 16 mW**
- **3020 Ceramic SMD package**
- **Beam Angle: ± 65°**

Description

RLCU-390 is an ultraviolet surface mount LED, utilizing a AlInGaN based chip with a typical peak wavelength of 390 nm and optical output power of typically 16 mW. **RLCU-390** comes in 3020 ceramic SMD package with flat silicone resin mold.

Maximum Ratings*

Parameter	Symbol	Values Min.	Values Max.	Unit
Forward Current	I_F		30	mA
Pulse Forward Current (T_P=<100 µs, D=10%)	I_{FP}		50	mA
Reverse Voltage (I_R = - µA)	U_R	**not designed for reverse operation**		
Thermal Resistance	R_{THJA}		60	K/W
Operating Temperature	T_{CASE}	- 40	+ 85	°C
Storage Temperature	T_{STG}	- 40	+ 85	°C
Soldering Temperature (t_{max}. 10s)	T_{SLD}		+ 250	°C

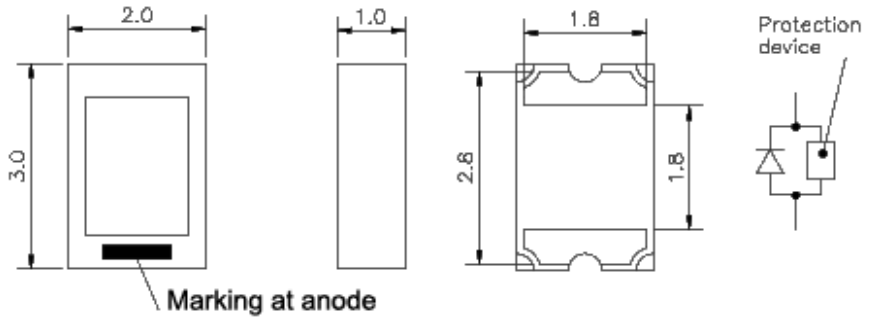
***** Operating close to or exceeding these parameters may damage the device

Electro-Optical Characteristics (T_{CASE} = 25°C)

Parameter	Symbol	Conditions	Values Min.	Values Typ.	Values Max.	Unit
Peak Wavelength	λ_P	I_F=20 mA	390		395	nm
Half Width	λ_Δ	I_F=20 mA		14		nm
Forward Voltage	U_F	I_F=20 mA		3.2	3.6	V
Output Power	P_O	I_F=20 mA	10	16		mW
Beam Angle	$2\theta_{1/2}$	I_F=20 mA		130		deg.

Outline Dimensions

3020 SMD



all dimensions in mm

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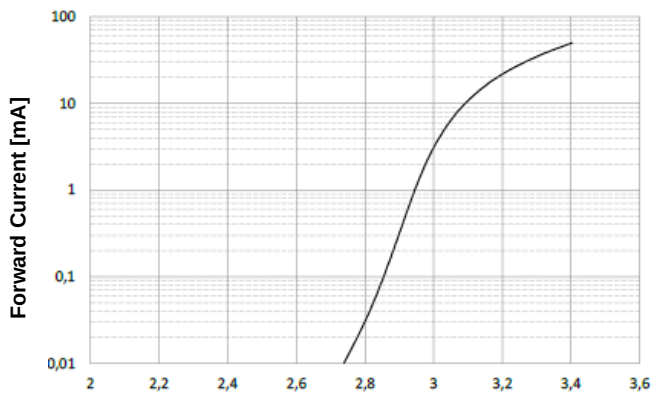
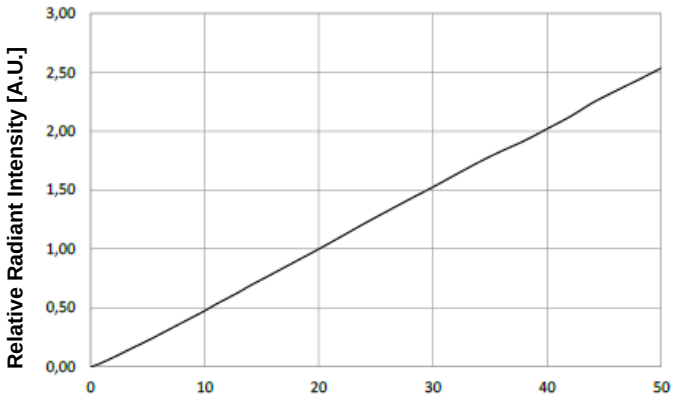
Typical Performance Curves

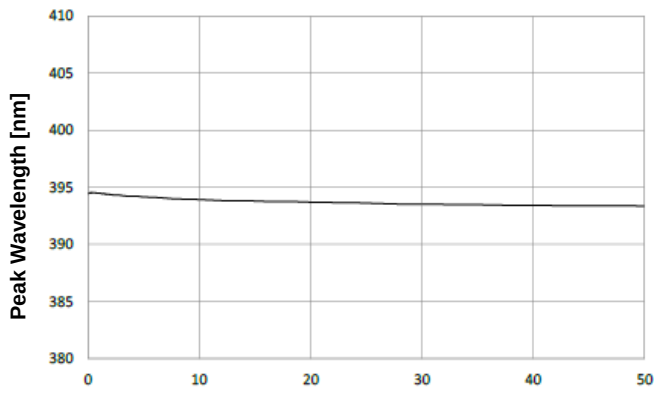
Forward Current vs. Forward Voltage



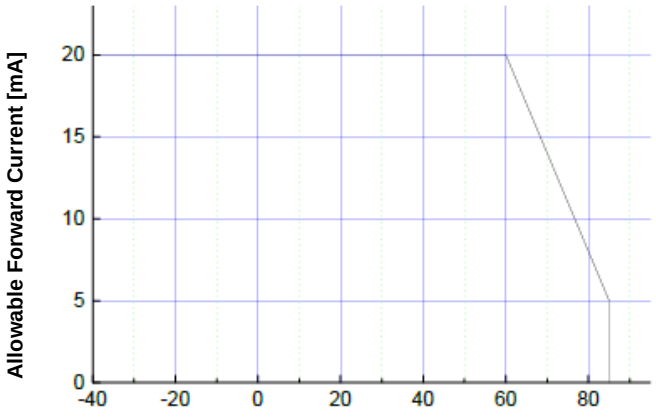
Relative Radiant Intensity vs. Forward Current



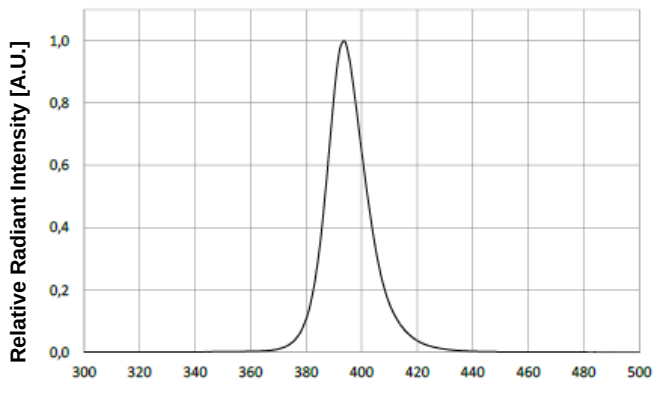
Peak Wavelength vs. Forward Current



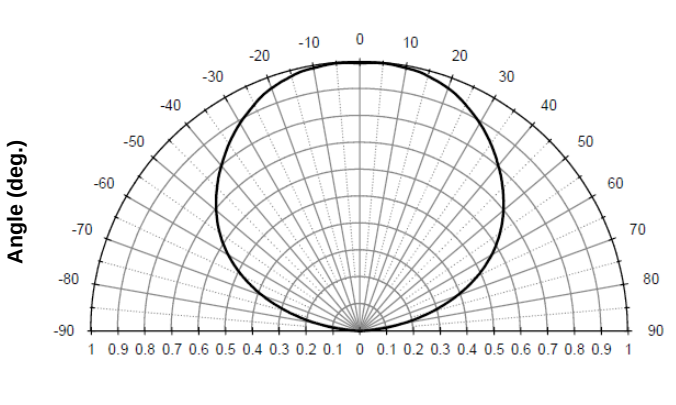
Allowed Forward Current vs. Amb. Temperature



Relative Spectral Emission



Radiation Characteristics



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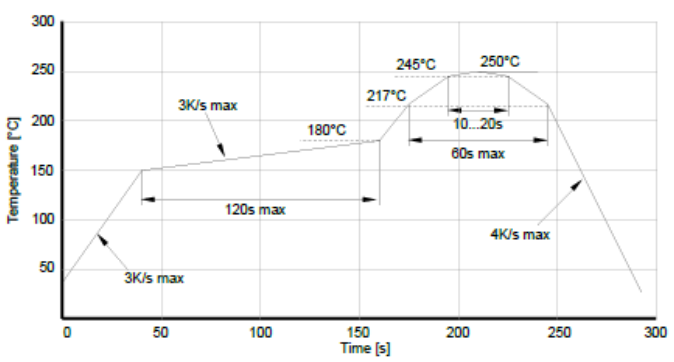
General Notes

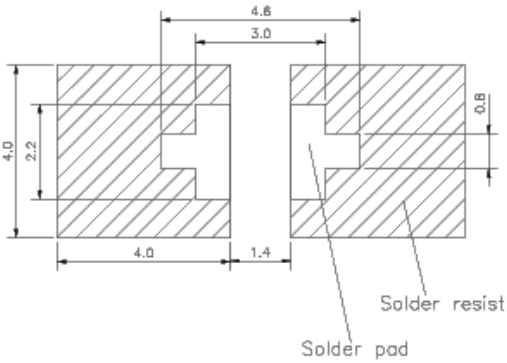
Soldering

- 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 lead free soldering conditions



Recommended soldering patterns



Unit: mm

Cleaning

- **Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended**
- DO NOT USE acetone, chloroseen, 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 LED.

Radiation

- During operation these LEDs do emit light, which **could be hazardous to skin and eyes**, and **may cause cancer**.
- Do avoid exposure to the emitted light. Protective glasses if needed
- 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.

Storage

- The **maximum shelf life** of LEDs in the originally sealed aluminum bag is **12 months**.
- Before opening the aluminum bag, please store it at **<30 ºC, <60 % RH**.
- After opening the aluminum bag, please solder the LEDs within **72 hours (floor life)** at **5 – 30 ºC, <50 % RH**.
- Put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.