ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
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Rev. 09/2019

RLCU-440-1020

- High Power Infrared LED
- 1020 nm, 60 mW
- Ceramic SMD, 3.8 x 3.8 x 1.0 mm
- Viewing angle: 120°

RoHS COMPLIANT Pb-Free

Description

RLCU-440-1020 is a **InGaN** based surface mount infrared High Power LED with a typical peak wavelength of **1020 nm** and radiant flux of typ. **60 mW**. It comes in ceramic SMD package with silver plated soldering pads (lead free solderable) and taped in 16 mm blister tape (cathode to transporting perforation).

Maximum Ratings

Parameter	Symbol	Values		Unit
		Min.	Max.	
Forward Current	I_F		1000	mA
Forward Current, pulsed ($t_p \leq 100\mu s$, T = 1:10)	I_{FP}		1200	mA
Reverse Voltage	V_R		5	V
Reverse Current	I_R		100	µA
Thermal Resistance	R_{θ_JC}		10	K/W
Operating Temperature	T_{OP}	-40	+85	°C
Storage Temperature	T_{STR}	-40	+85	°C
Soldering Temperature (max. 3s)	T_{SOL}		+300	°C

Electro-Optical Characteristics (T_{CASE} = 25°C, I_F = 350mA)

Parameter	Symbol	Values			Unit
		Min.	Typ.	Max.	
Peak Wavelength	λ_P	1005	1020	1035	nm
Half Width (FWHM)	$\Delta\lambda$		40		nm
Forward Voltage	V_F		1.2	1.5	V
Radiant Intensity	I_E	11.2	20.0		mW/sr
Radiant Flux	ϕ_E		60		mW

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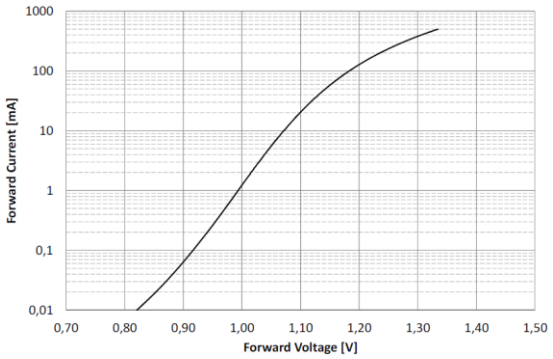
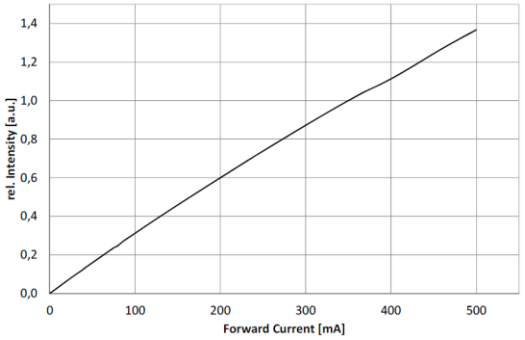
Performance Characteristics

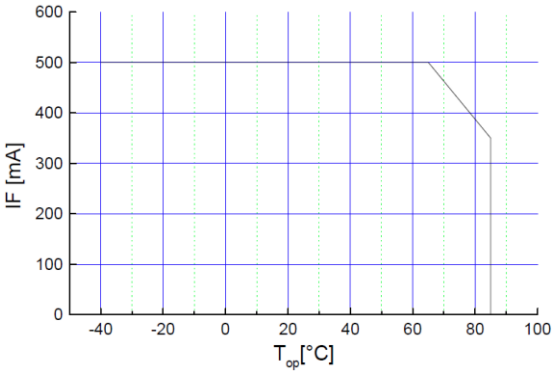
Forward Current vs. Forward Voltage



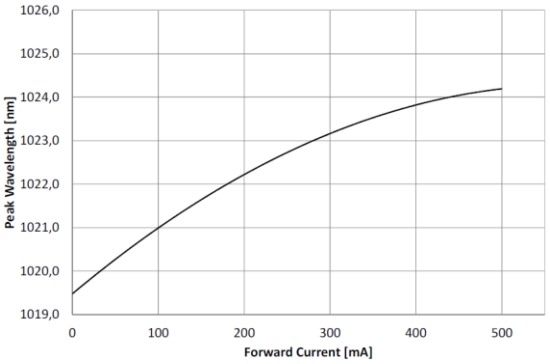
Intensity vs. Forward Current



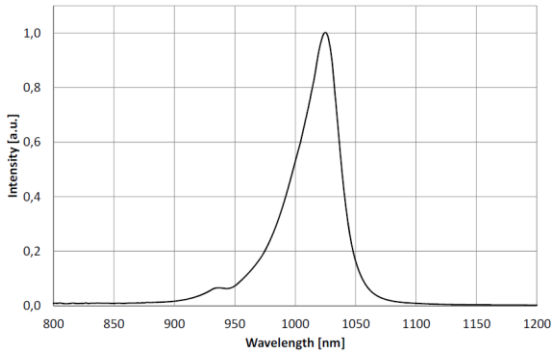
Max. Forward Current (DC) vs. Temperature



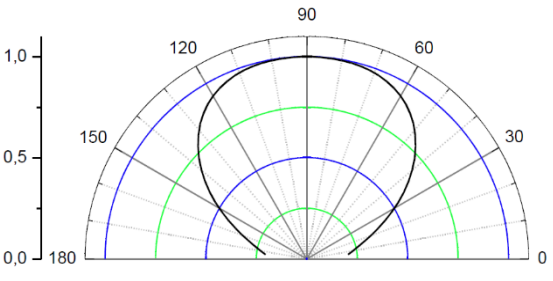
Forward Current vs. Shift Peak Wavelength



Spectrum



Viewing Angle



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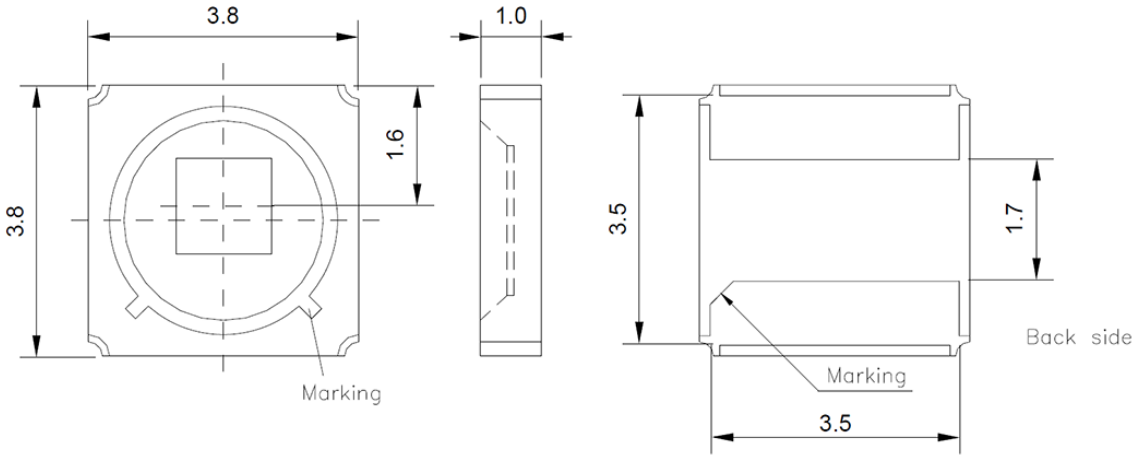
Outline Dimensions

RLCU-440

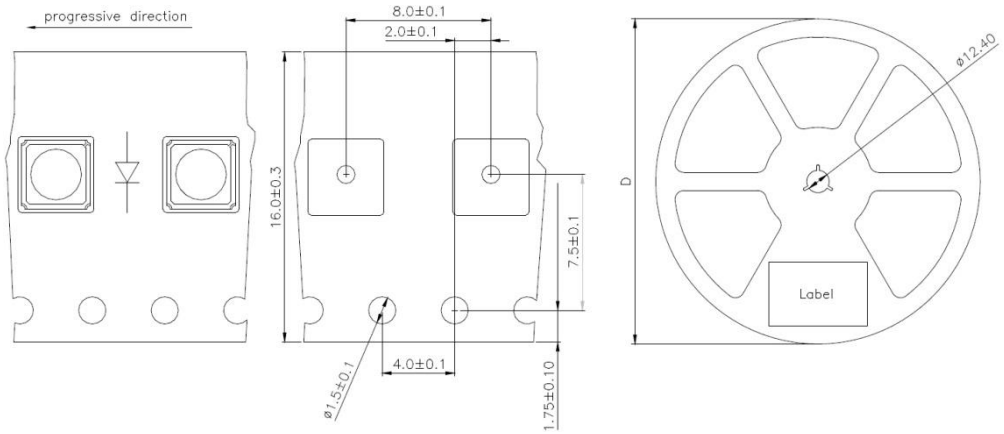


Marking at anode

Tolerance: ±0.1

All dimensions in mm

Tabe And Reel Packing



D	Parts/reel
180 mm	500
330 mm	2000

All dimensions in mm

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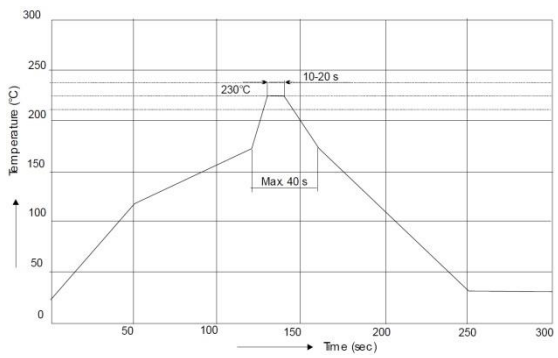
Precautions

Soldering:

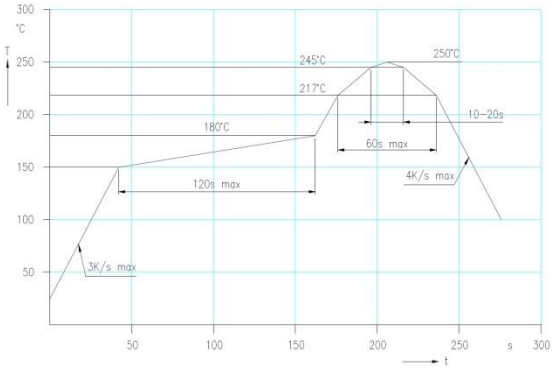
- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux.
- Do not apply current to the LED until it has cooled down to room temperature after soldering

Recommended soldering conditions:

IR Reflow Soldering Profile

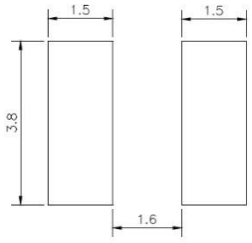


IR Reflow Soldering Profile for Lead Free Soldering



Manuel Soldering	
soldering time	max. 3 s
soldering temperature	max. 300 °C
power of iron	max. 25 W

Recommended Soldering Patterns



recommended max. thermal resistance device-ambient: 20 K/W

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, 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 device.

Radiation:

During operation these LEDs do emit **high intensity light**, which is hazardous to skin and eyes, and may cause cancer. Do avoid exposure to the emitted light. **Protective glasses are recommended**.

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.

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