ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
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Rev. A1

LED405-06

- UV LED
- 405 nm, 15 mW
- Chip: InGaN, 350 x 350 µm, 1 pc.
- 5 mm Clear Molding, Epoxy Resin
- Viewing Angle: 8°

Description

LED405-06 contains one InGaN LED chip die with a typical peak wavelength of **405 nm** and radiation power of **15 mW**. It comes in Ø5 mm clear molding package with soldered lead frame (lead free) and lens molded with epoxy resin.

Maximum Ratings (T_{CASE}=25°C)

Parameter	Symbol	Values Min.	Values Max.	Unit
Power Dissipation	P_D		200	mW
Forward Current	I_F		50	mA
Reverse Voltage	V_F		5	V
Operating Temperature	T_{CASE}	- 30	+ 85	°C
Storage Temperature	T_{STG}	- 20	+ 100	°C
Lead Solder Temperature *2	T_{SLD}		+ 265	°C

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

Parameter	Symbol	Conditions	Values Min.	Values Typ.	Values Max.	Unit
Peak Wavelength	λ_P	I_F=20mA	400		410	nm
Half Width	$\Delta\lambda$	I_F=20mA		15		nm
Forward Voltage	V_F	I_F=20mA		3.5	4.0	V
Radiated Power *1	P_O	I_F=20mA		15		mW
Radiant Intensity *2	I_E	I_F=20mA		40		mW/sr
Viewing Angle	$2\theta_{1/2}$	I_F=20mA		8		deg.
Rise Time	t_R	I_F=20mA				ns
Fall Time	t_F	I_F=20mA				ns

*1 *measured by S3584-08*
*2 *measured by Ando Optical Multi Meter AQ2140 & AQ2741*

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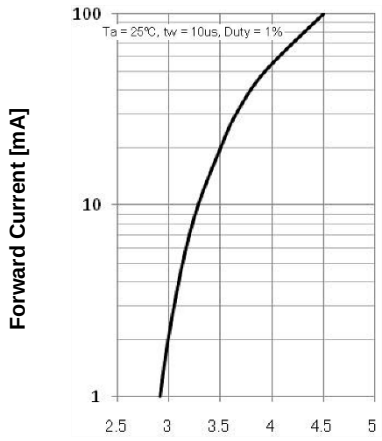
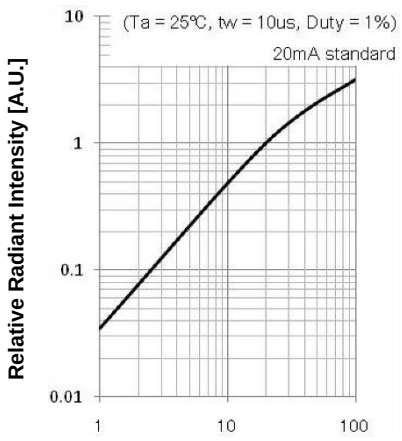
Typical Performance Curves

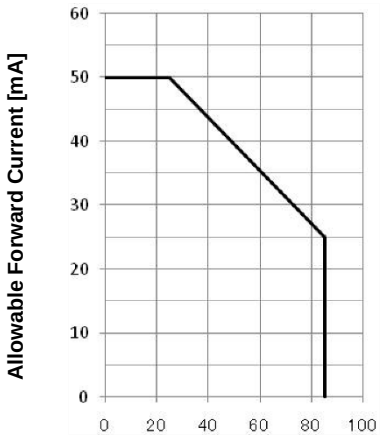
Forward Current vs. Forward Voltage



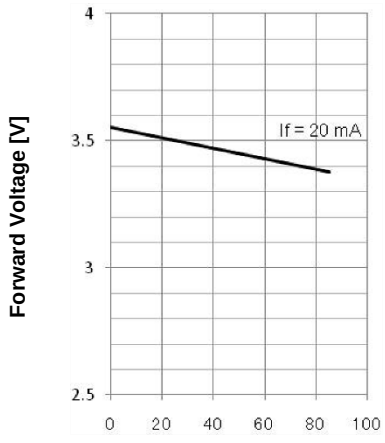
Rel. Radiant Intensity vs. Forward Current



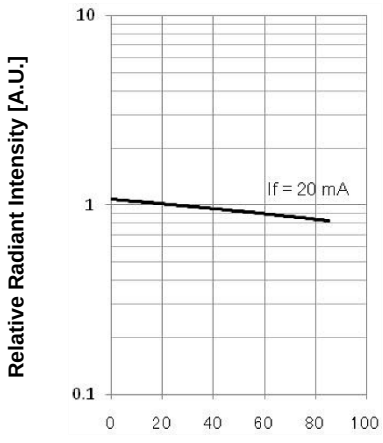
Allowed Forward Current vs. Ambient Temperature



Forward Voltage vs. Ambient Temperature



Rel. Radiant Intensity vs. Ambient Temperature



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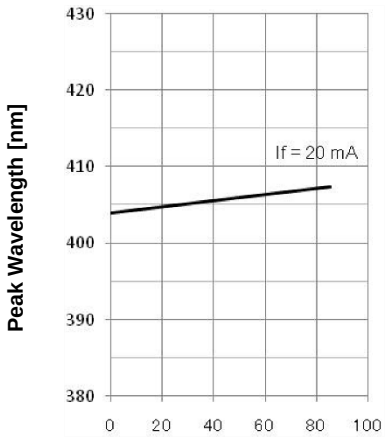
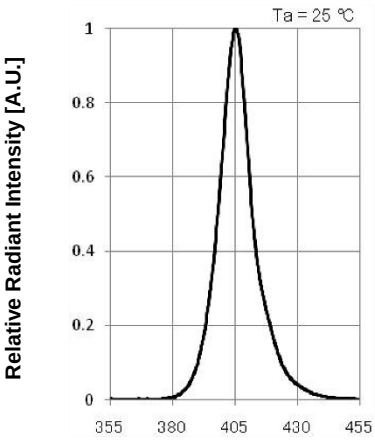
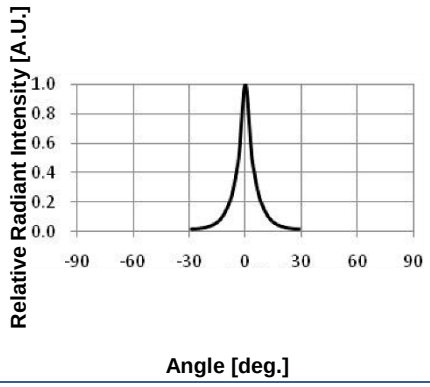
Peak Wavelength vs. Ambient Temperature



Relative Spectral Emission

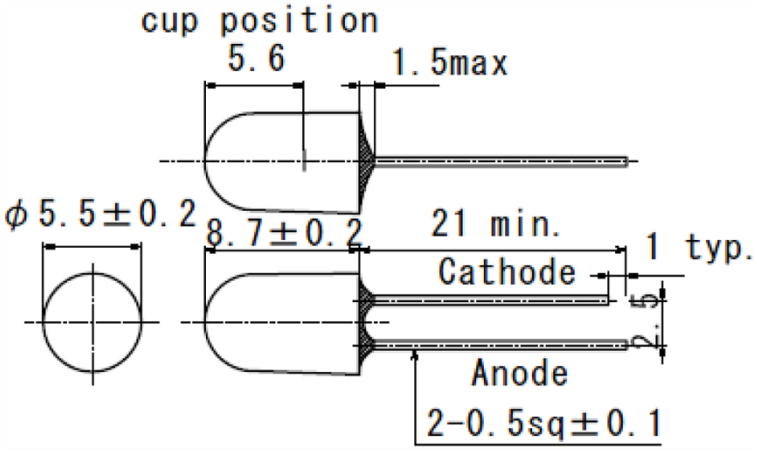


Radiation Characteristics



Outline Dimensions

LED405-06 — **5 mm**



Lead	Description
Short Pin	LED Cathode
Long Pin	LED Anode

All Dimensions in mm

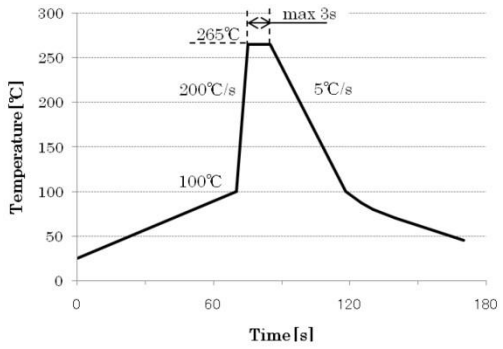
Precautions

Soldering:

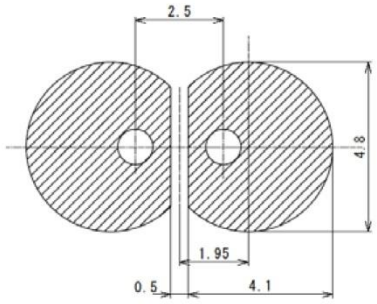
- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering

Recommended soldering conditions:

Soldering Conditions



Recommended Soldering Patterns



Unit: mm

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 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.

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Revisions History

Rel.	Rel. Date	Chapter	Modification	Page
A1	*2008-12-09*	-	Initial release	-