ROITHNER LASERTECHNIK GmbH
WIEDNER HAUPTSTRASSE 76 1040 VIENNA AUSTRIA
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LED610-03

- **Red Through Hole LED**
- **610 nm, 8 mW**
- **AlGaInP chip, 350 x 350 µm**
- **5 mm Epoxy Resin Package**
- **Beam Angle: ±15°**

Description

LED610-03 is an AlGaInP based red LED, emitting at a peak wavelength of typically 610 nm and optical output power of 8 mW @ 20 mA. It comes in a **5 mm through hole** clear epoxy resin mold package with a beam angle of ±15°. Different beam angle variants are available on request.

Maximum Ratings*

Parameter	Symbol	Values Min.	Values Max.	Unit
Power Dissipation	P_D		120	mW
Forward Current	I_F		50	mA
Pulse Forward Current **	I_{FP}		100	mA
Reverse Voltage	V_F		5	V
Thermal Resistance	R_{THJA}		270	K/W
Junction Temperature	T_J		120	°C
Operating Temperature	T_{CASE}	- 40	+ 100	°C
Storage Temperature	T_{STG}	- 40	+ 100	°C
Lead Solder Temperature ($t_{max.}$ 3s)	T_{SLD}		+ 265	°C

***** Operating close to or exceeding these parameters may damage the device
** duty cycle = 1 %, pulse width = 10 µs

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

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Peak Wavelength	λ_P	I_F=20 mA	600		620	nm
Dominant Wavelength	λ_D	I_F=20 mA		604		
Half Width	λ_Δ	I_F =20 mA		15		nm
Forward Voltage	V_F	I_F =20 mA		2.0	2.3	V
	V_{FP}	I_{FP}=100 mA*		2.3		
Total Radiated Power	P_O	I_F =20 mA		8		mW
		I_{FP}=100 mA*		39		
Radiant Intensity	I_E	I_F =20 mA		29		mW/sr
		I_{FP}=100 mA*		140		
Beam Angle	$2\theta_{1/2}$	I_F=20 mA		30		deg.
Rise Time	t_r	I_F =20 mA		20		ns
Fall Time	t_f	I_F =20 mA		20		ns

* duty cycle = 1 %, pulse width = 10 µs

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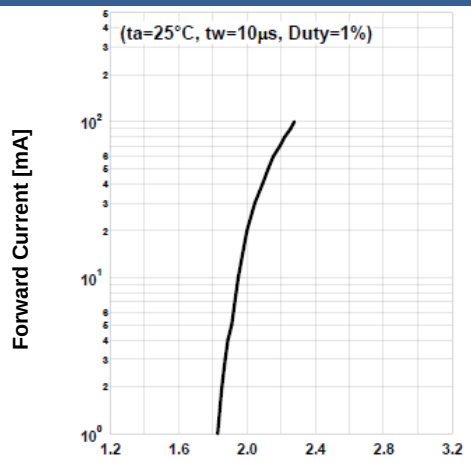
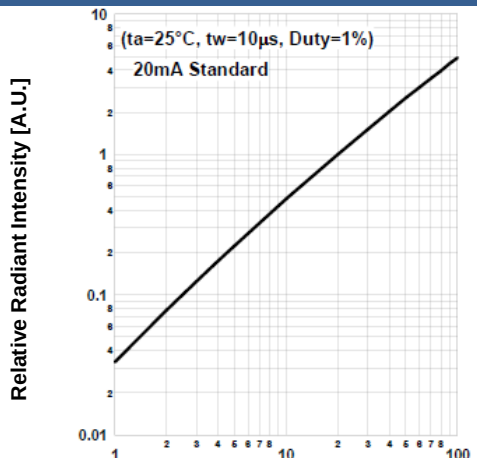
Typical Performance Curves

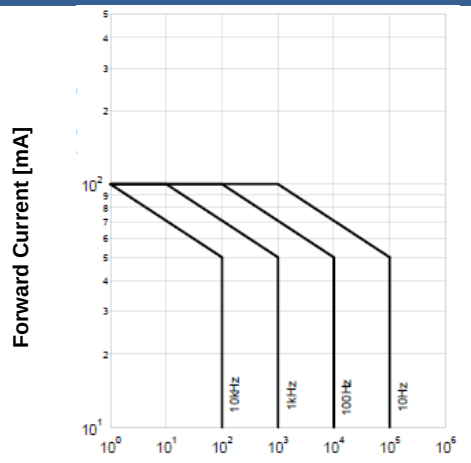
Forward Current vs. Forward Voltage



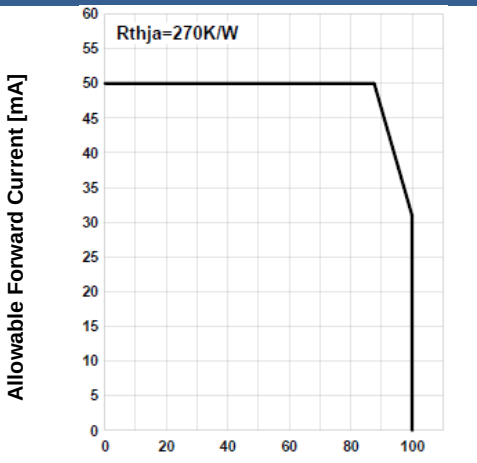
Relative Radiant Intensity vs. Forward Current



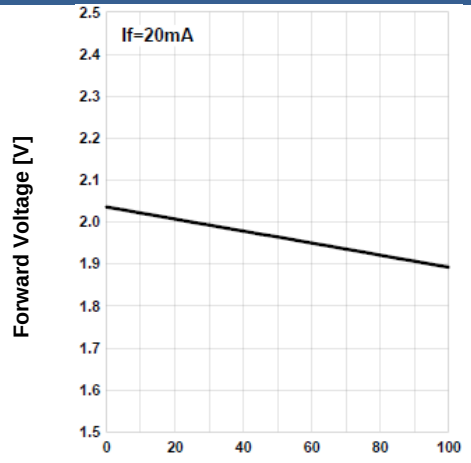
Forward Current vs. Pulse Duration



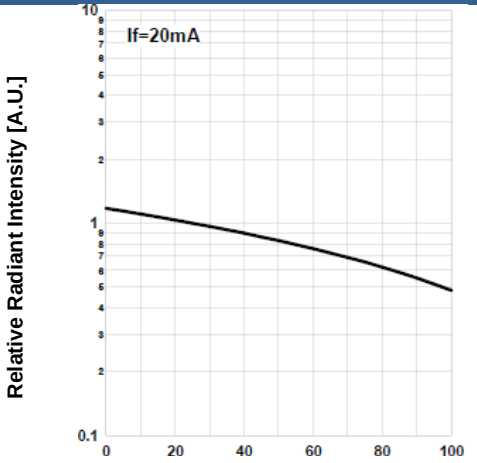
Allowed Forward Current vs. Amb. Temperature



Forward Voltage vs. Ambient Temperature



Rel. Radiant Intensity vs. Ambient Temperature



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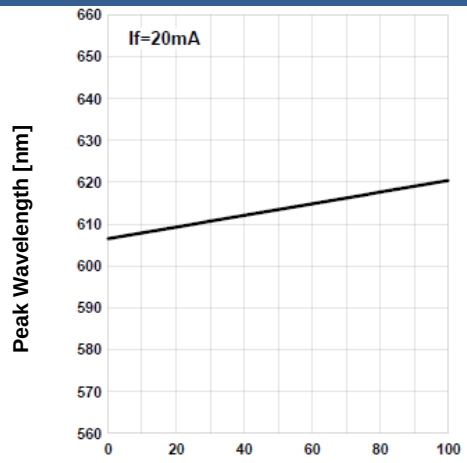
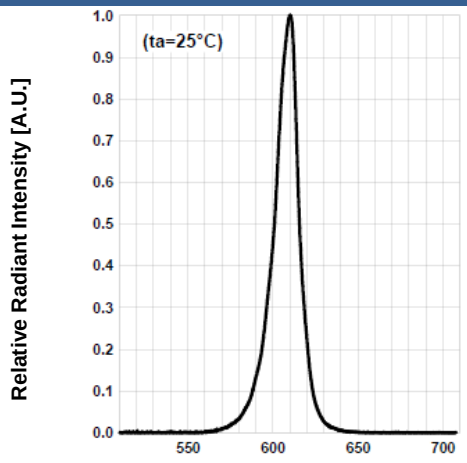
Typical Performance Curves

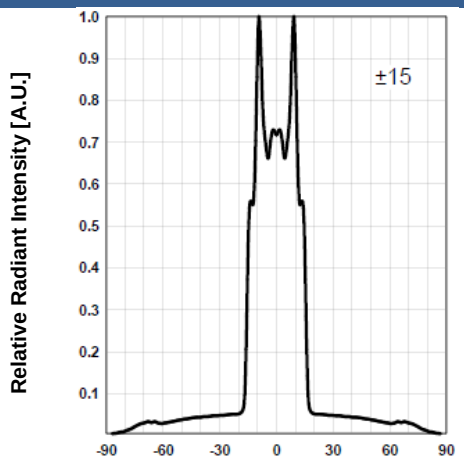
Peak Wavelength vs. Amb. Temp.



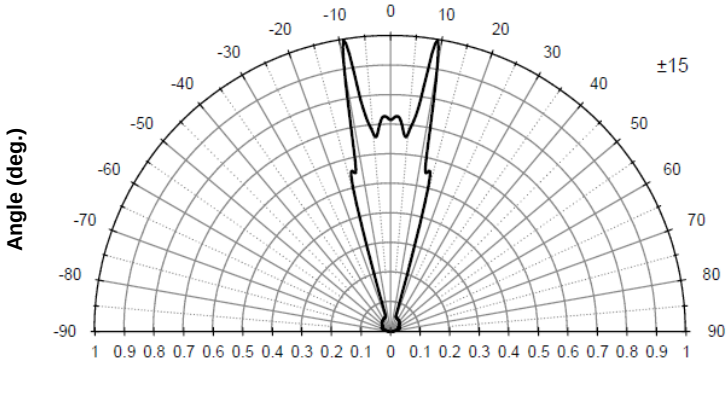
Relative Spectral Emission



Radiation Characteristics

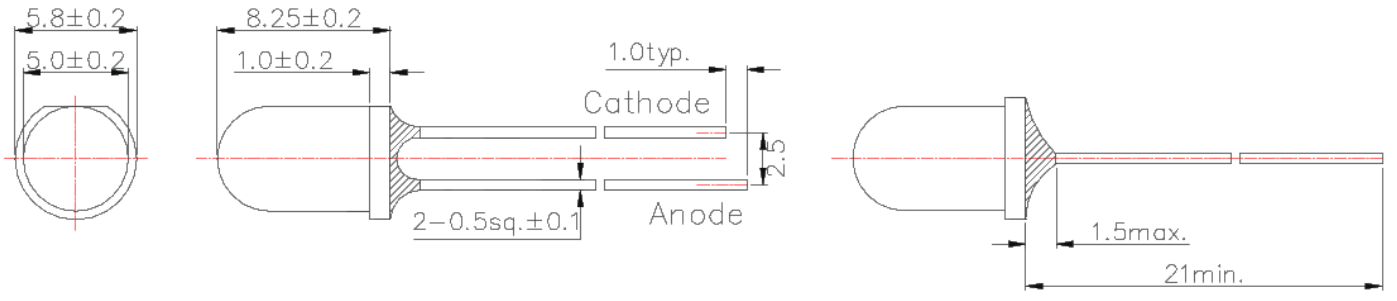


Radiation Characteristics



Outline Dimensions

5 mm Through Hole



all dimensions in mm

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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

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.