



PRELIMINARY

Rev. 2.1, 25.10.2019

LED1550-66-60

- Infrared High Power LED Array
- 1550 nm, 40 mW
- Chip: 300x300 μm , 60 pcs., InGaAsP
- TO-66 Package, Silicone and/or Epoxy Resin
- Viewing Angle: 130°



Description



LED1550-66-60 is a wide viewing and extremely high output power illuminator containing an array of 60 pcs. InGaAsP chip dies, mounted on a metal stem TO-66 and covered with a silicone and/or epoxy resin.

On forward bias a power radiation of typical 40 mW is given at a peak wavelength of 1550 nm.

Maximum Ratings $(T_{CASE}=25^{\circ}\text{C})$

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation	P_D		7.8	W
Forward Current	I_F		1.2	A
Reverse Voltage	V_F		25	V
Thermal Resistance	R_{THJA}		2	K/W
Junction Temperature	T_J		120	$^{\circ}\text{C}$
Operating Temperature	T_{CASE}	- 40	+ 85	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	- 40	+ 100	$^{\circ}\text{C}$
Lead Solder Temperature *	T_{SLD}		+ 265	$^{\circ}\text{C}$

* must be completed within 3 seconds

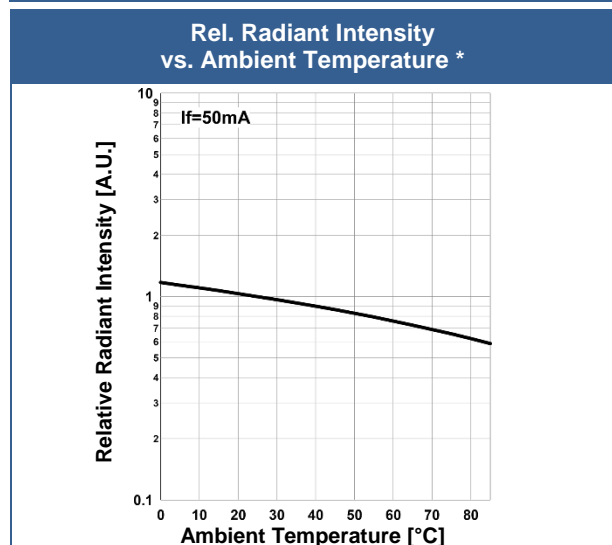
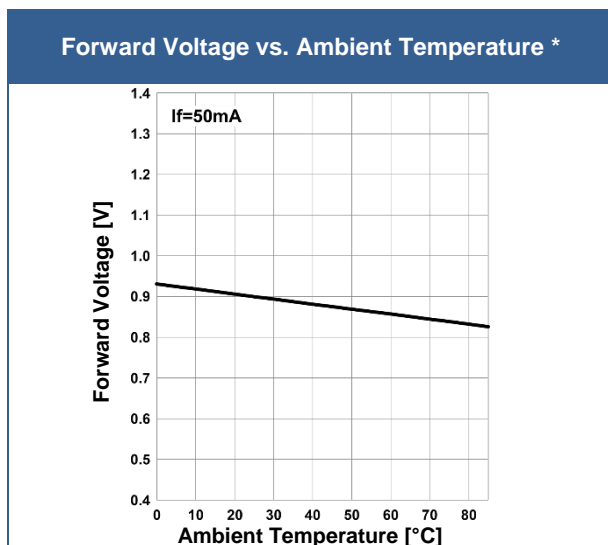
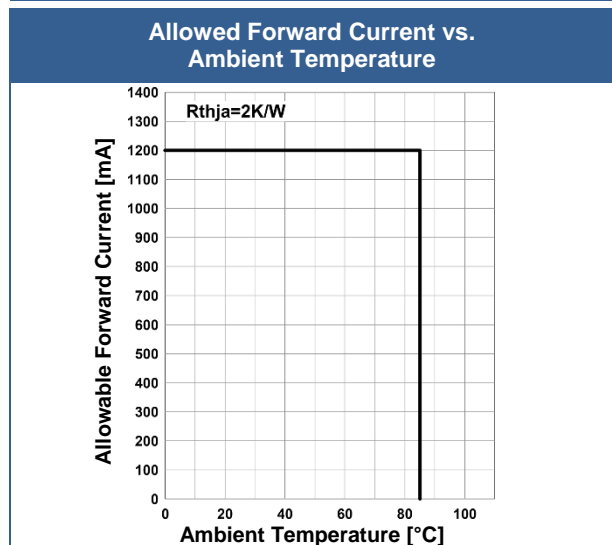
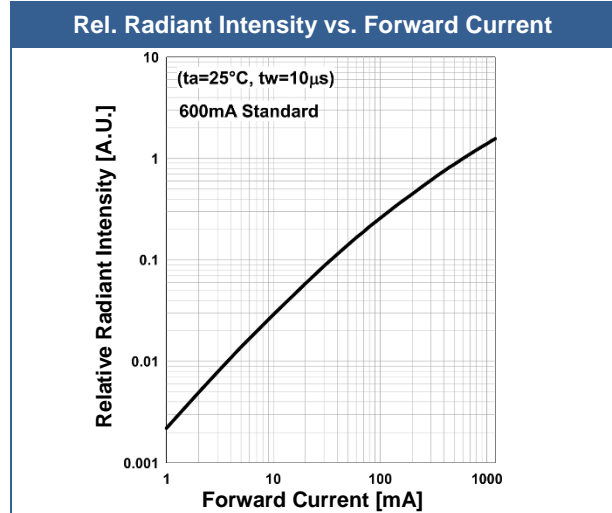
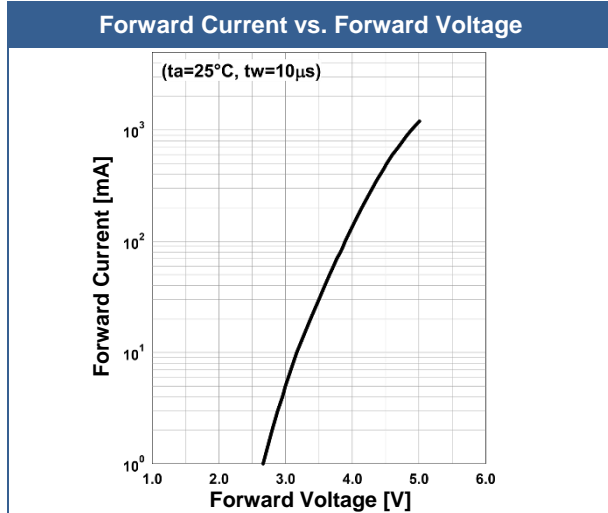
Electro-Optical Characteristics $(T_{CASE}=25^{\circ}\text{C})$

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	λ_P	$I_F=600\text{mA}$	1500		1600	nm
Half Width	$\Delta\lambda$	$I_F=600\text{mA}$		125		nm
Forward Voltage	V_F	$I_F=600\text{mA}$		4.6	6.5	V
Radiated Power *	P_O	$I_F=600\text{mA}$		40		mW
Viewing Angle	φ	$I_F=100\text{mA}$		130		deg.
Rise Time	t_r	$I_F=600\text{mA}$		80		ns
Fall Time	t_f	$I_F=600\text{mA}$		30		ns

* measured by G8370-85



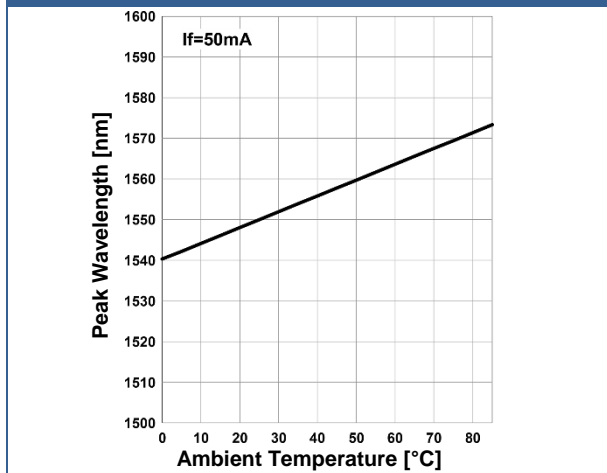
Typical Performance Curves



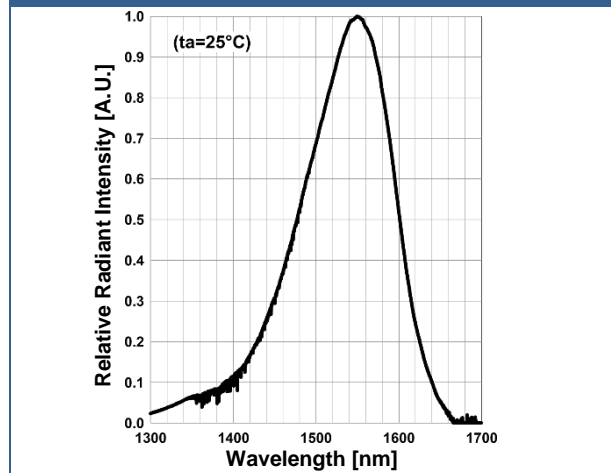
* shows the characteristics of one representative TO-66 chip.



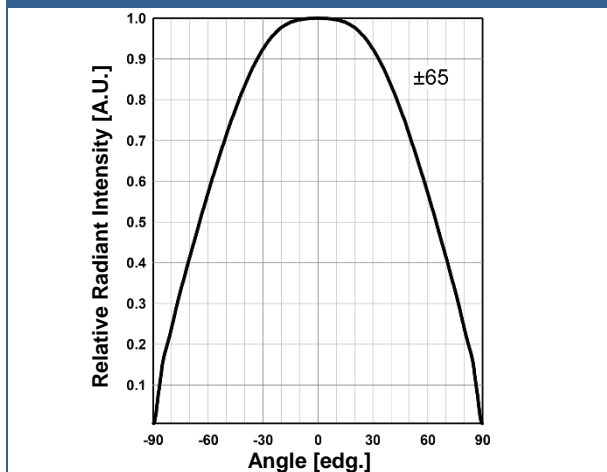
Peak Wavelength vs. Ambient Temperature *



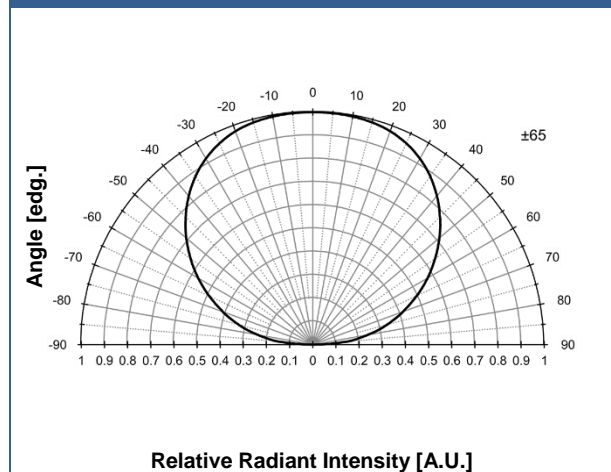
Relative Spectral Emission *



Radiation Characteristics

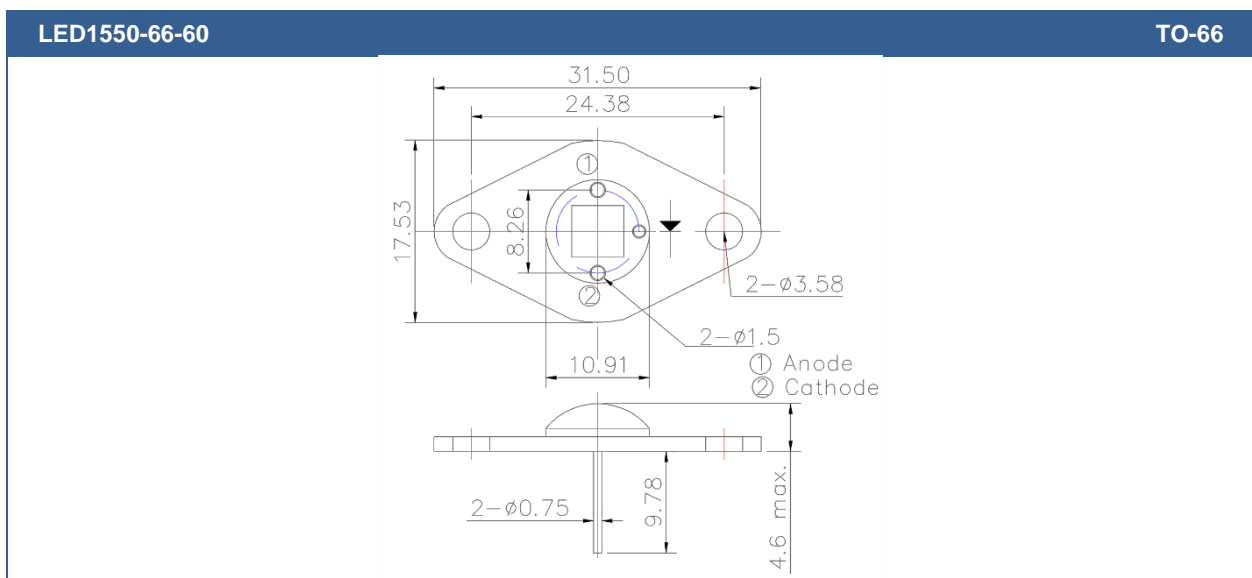


Radiation Characteristics



* shows the characteristics of one representative TO-66 chip.

Outline Dimensions



All Dimensions in mm



Precautions

Cautions:

- This high power LED must be cooled!
- NOT look directly into the emitting area of the LED during operation!

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, chloroform, 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.** 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.