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Rev. A2

LED450-66-60

- Blue High Power LED Array
- 450 nm, 700 mW
- Chip: 350x350 µm, 60 pcs., InGaN
- TO-66 package, Silicone and/or Epoxy resin
- Viewing Angle: 130°

RoHS COMPLIANT Pb-Free

Description

LED450-66-60 is a wide viewing and extremely high output power illuminator consists of 60 pcs. of InGaN chip dies, mounted on a metal stem TO-66 package with AIN ceramics and covered with clear silicone and/or epoxy resin.
On forward bias, it emits a power radiation of typical **700 mW** at a peak wavelength of **450 nm**.

Maximum Ratings (T_{CASE}=25°C)

Parameter	Symbol	Values Min.	Values Max.	Unit
Power Dissipation	P_D		12	W
Forward Current	I_F		600	mA
Reverse Voltage	V_R		25	V
Thermal Resistance	R_{THJA}		2	K/W
Junction Temperature	T_J		120	°C
Operating Temperature	T_{CASE}	- 40	+ 85	°C
Storage Temperature	T_{STG}	- 40	+ 100	°C
Lead Solder Temperature *	T_{SLD}		+ 265	°C

** must be completed within 3 seconds*

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

Parameter	Symbol	Conditions	Values Min.	Values Typ.	Values Max.	Unit
Peak Wavelength	λ_P	I_F=240mA	440		460	nm
Half Width	$\Delta\lambda$	I_F=240mA		20		nm
Forward Voltage	V_F	I_F=240mA		14.8	20	V
Radiated Power *	P_O	I_F=240mA		700		mW
Luminous Flux	Φ_V	I_F=240mA		30		lm
Viewing Angle	$2\theta_{1/2}$	I_F=100mA		124		deg.
Rise Time	t_R	I_F=240mA		30		ns
Fall Time	t_F	I_F=240mA		30		ns

** measured by S3584-08*

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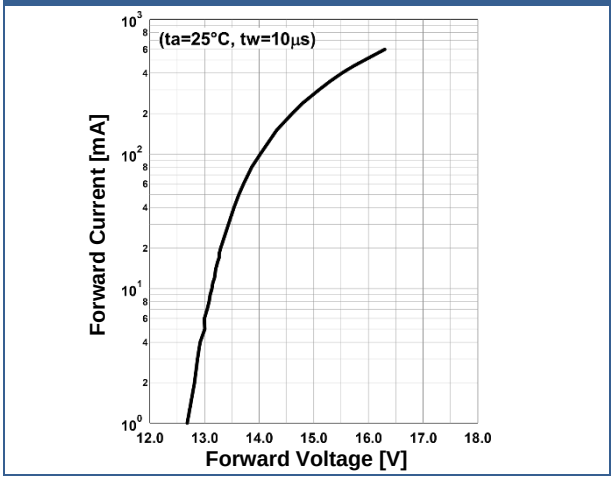
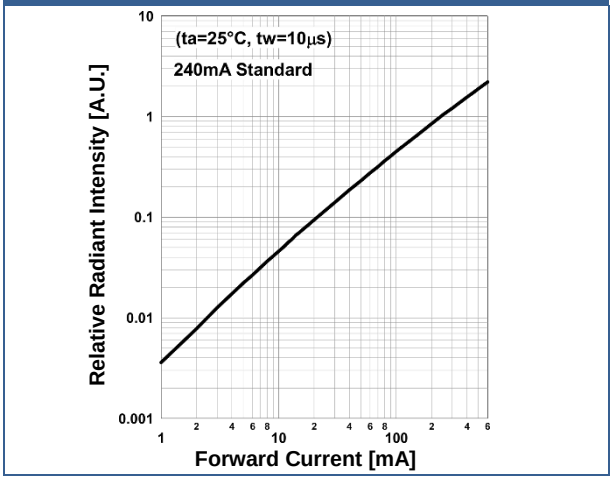
Typical Performance Curves

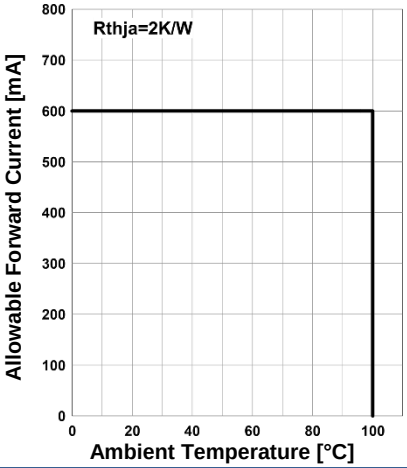
Forward Current vs. Forward Voltage



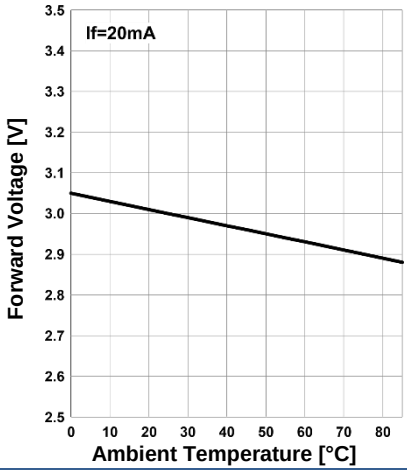
Rel. Radiant Intensity vs. Forward Current



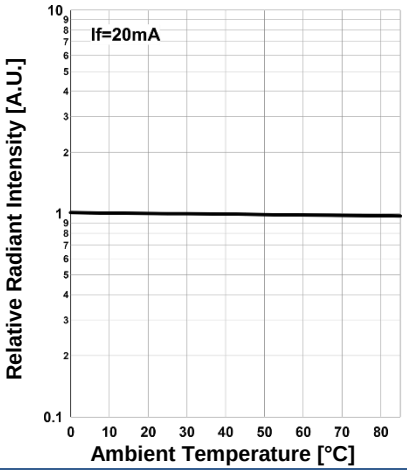
Allowed Forward Current vs. Ambient Temperature



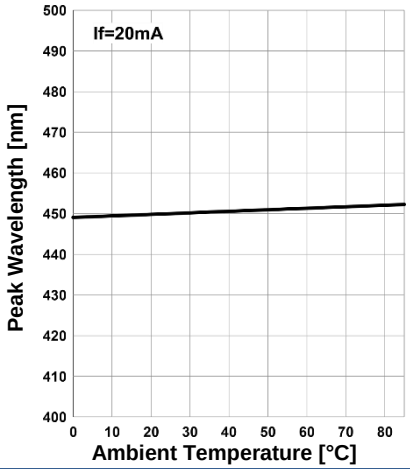
Forward Voltage vs. Ambient Temperature



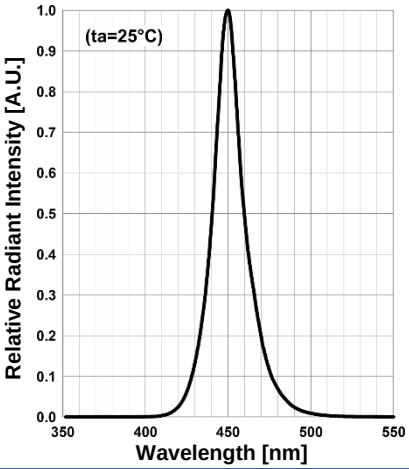
Rel. Radiant Intensity vs. Ambient Temperature



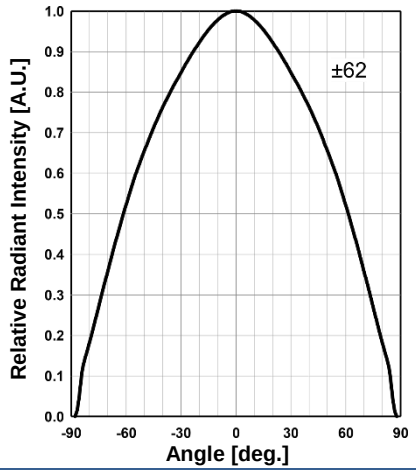
Peak Wavelength vs. Ambient Temperature



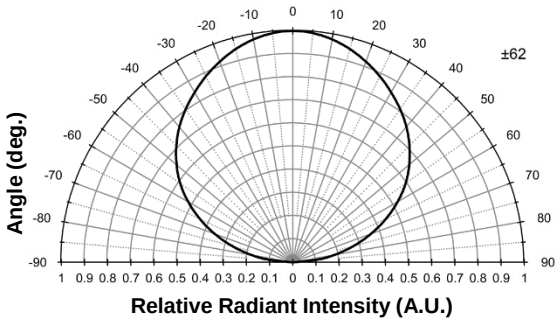
Relative Spectral Emission



Radiation Characteristics

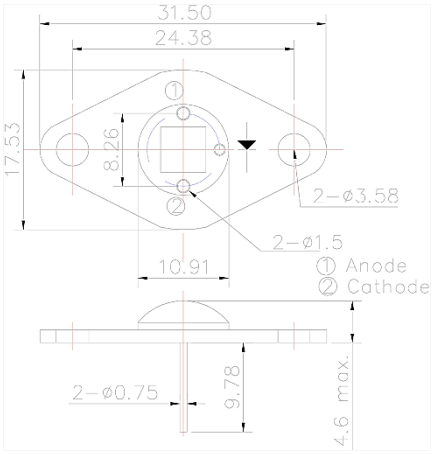


Radiation Characteristics



Outline Dimensions

LED450-66-60 **TO-66**



Lead	Description
Pin 1	LED Anode
Pin 2	LED Cathode

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, 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**. 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.

Revisions History

Rel.	Rel. Date	Chapter	Modification	Page
A2	*2020-08-26*	Maximum Ratings	P_D: 12 W *(previously 8 W)* I_F: 600 mA *(previously 400 mA)* V_R: 25 V *(previously 50 V)* T_{CASE}: -40..+85 °C *(previously -30..+80 °C)* T_{CASE}: -40..+100 °C *(previously -30..+110 °C)* T_{SLD}: 265 °C *(previously -240 °C)* Included: Thermal Resistance, Junction Temperature	1
		Electro-Optical Characteristics	Δλ: typ. 30 nm *(previously typ. 30 nm)* V_F: typ. 14.8 V / max. 20 V *(previously typ. 18 V)* 2θ1/2: 124° *(previously ±60°)* P_O: typ. 700 mW *(previously typ. 40 mW)* t_R: typ. 30 ns *(previously typ. 1000 ns)* t_F: typ. 40 ns *(previously typ. 400 ns)* Included: ΦV, t_R, t_F	1
		Typical Performance Curves	included	2-3
A1	*2012-04-25*	-	Initial release	-

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