



LED720-33AU

- Infrared Light Emitting Diode
- 720 nm, 7.0 mW
- InGaAs chip, 350 x 350 μm
- 3 mm Clear Molding, Epoxy Resin
- Viewing Angle: 40°



Description

LED720-33AU is an **AlGaAs** based infrared LED, typically emitting at 720 nm with a typical output power of 7.0 mW. It comes in a hermetically sealed 3 mm clear epoxy resin with lead free soldered lead frame.

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

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation	P_D		180	mW
Forward Current	I_F		75	mA
Pulse Forward Current *1	I_{FP}		300	mA
Reverse Current	I_R		10	μA
Thermal Resistance	R_{THJA}		280	K/W
Junction Temperature	T_J		120	$^{\circ}\text{C}$
Operating Temperature	T_{CASE}	- 40	+ 100	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	- 40	+ 100	$^{\circ}\text{C}$
Lead Solder Temperature *2	T_{SLD}		+ 265	$^{\circ}\text{C}$

*1 duty=1%, pulse width = 10 μs

*2 must be completed within 5 seconds

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

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	λ_P	IF=20 mA	710		730	nm
Half Width	$\Delta\lambda$	IF=20 mA		23		nm
Forward Voltage	V_F	IF=20 mA		1.7	2.3	V
	V_{FP}	IFP=300 mA		3.7		
Radiated Power *1	P_O	IF=20 mA		7.0		mW
		IFP=300 mA		100		
Radiant Intensity *2	I_E	IF=20 mA		34		mW/sr
		IFP=300 mA		510		
Viewing Angle	$2\theta_{1/2}$	IF=20 mA		40		deg.
Rise Time	t_r	IF=20 mA		10		ns
Fall Time	t_f	IF=20 mA		15		ns

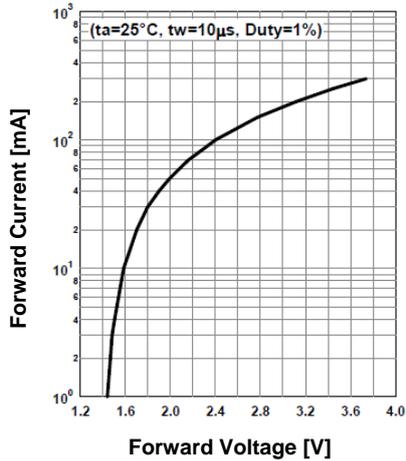
*1 measured by S3584-08

*2 measured by CIE127-2007 Condition B

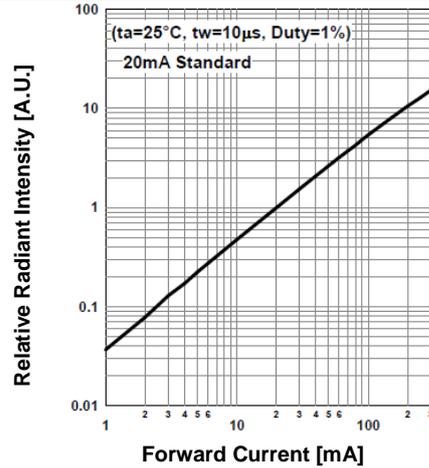


Typical Performance Curves

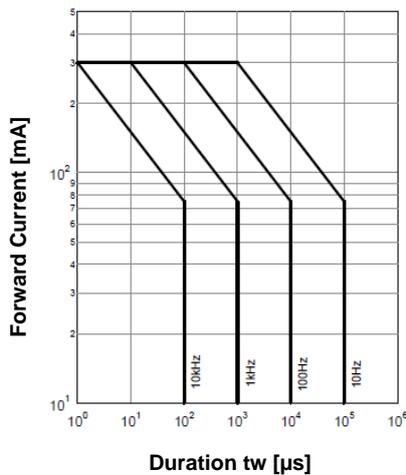
Forward Current vs. Forward Voltage



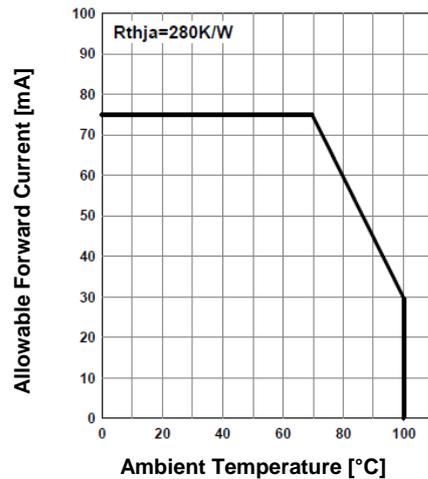
Relative Radiant Intensity vs. Forward Current



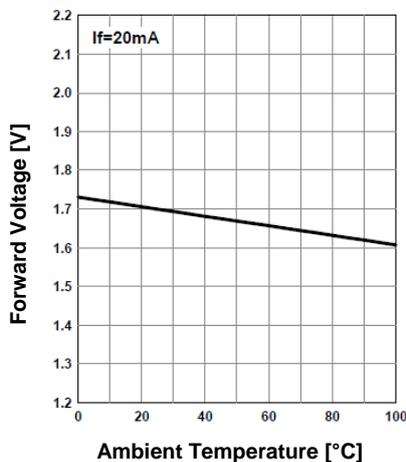
Forward Current vs. Pulse Duration



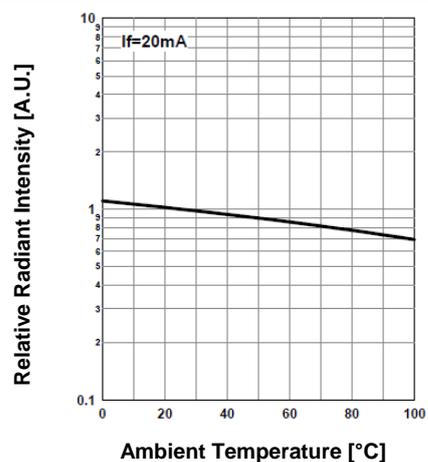
Allowed Forward Current vs. Amb. Temperature



Forward Voltage vs. Ambient Temperature



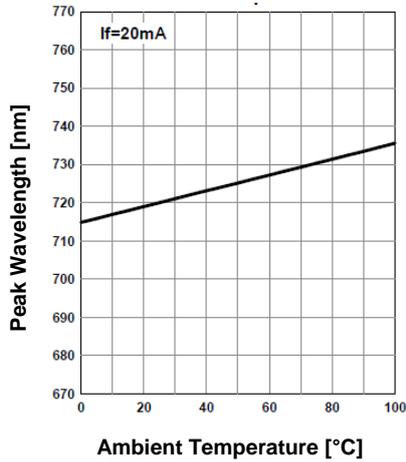
Rel. Radiant Intensity vs. Ambient Temperature



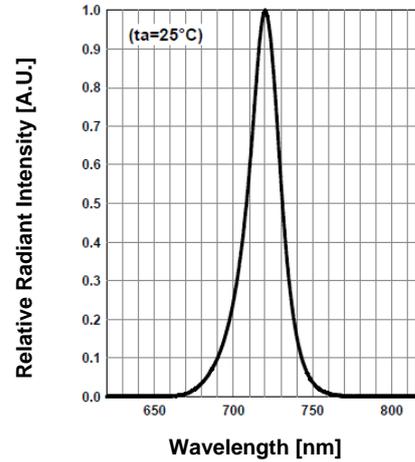


Typical Performance Curves

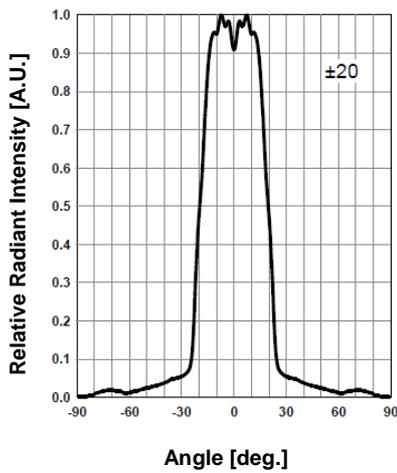
Peak Wavelength vs. Ambient Temperature



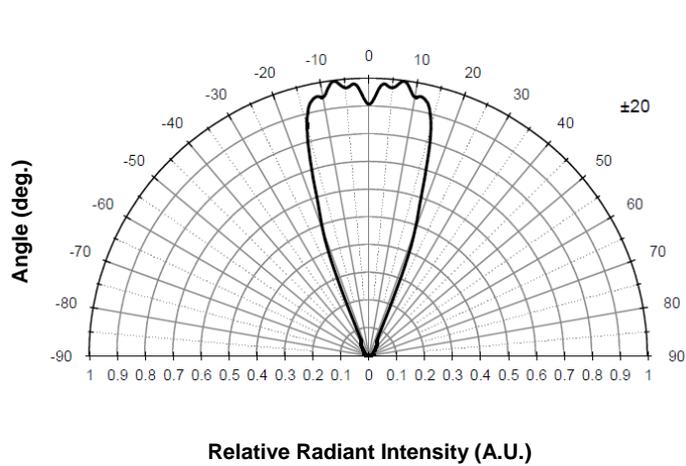
Relative Spectral Emission



Radiation Characteristics

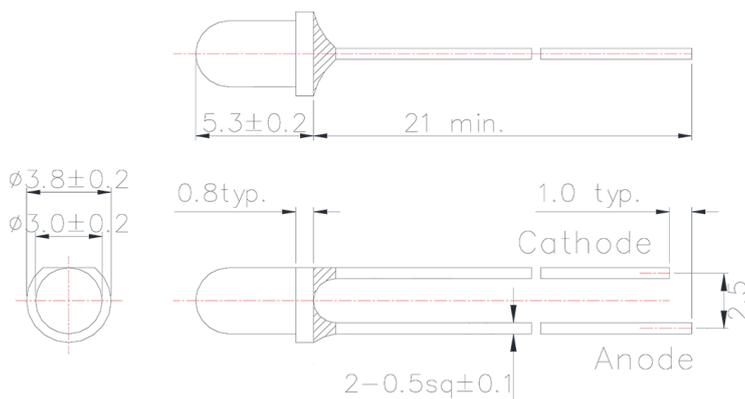


Radiation Characteristics



Outline Dimensions

3 mm



Lead	Function
Short Pin	Cathode
Long Pin	Anode

all dimensions in mm

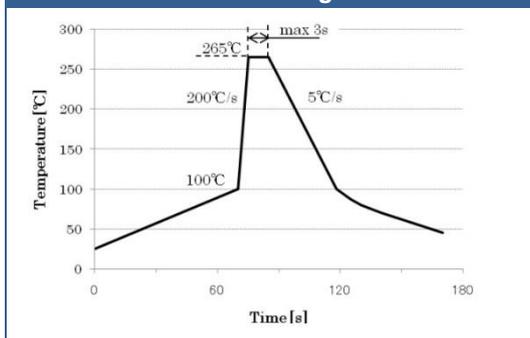


Precautions

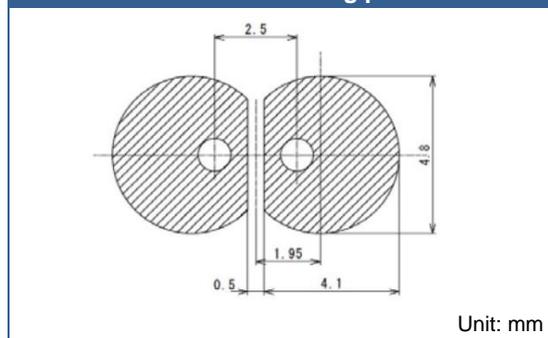
Soldering

- 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



Recommended soldering patterns



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 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.