



## LED690-33AU

- Red LED
- 690 nm, 5.8 mW
- Chip: AlGaAs, 350 x 350  $\mu\text{m}$
- 3 mm Clear Molding, Epoxy Resin
- Viewing Angle: 32°



### Description



**LED690-33AU** contains one AlGaAs LED chip die mounted on a lead frame hermetically sealed with a clear epoxy lens.

On forward bias, it emits a power radiation of typical **5.8 mW** at a peak wavelength at **690 nm**.

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

Parameter	Symbol	Values		Unit
		Min.	Max.	
Power Dissipation	$P_D$		120	mW
Forward Current	$I_F$		50	mA
Pulse Forward Current *1	$I_{FP}$		200	mA
Reverse Voltage	$V_F$		5	V
Thermal Resistance	$R_{THJA}$		300	K/W
Junction Temperature	$T_J$		120	$^{\circ}\text{C}$
Operating Temperature	$T_{\text{CASE}}$	- 40	+ 100	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{STG}}$	- 40	+ 100	$^{\circ}\text{C}$
Lead Solder Temperature *2	$T_{\text{SLD}}$		+ 265	$^{\circ}\text{C}$

\*1 duty=1%, pulse width = 10  $\mu\text{s}$

\*2 must be completed within 3 seconds

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

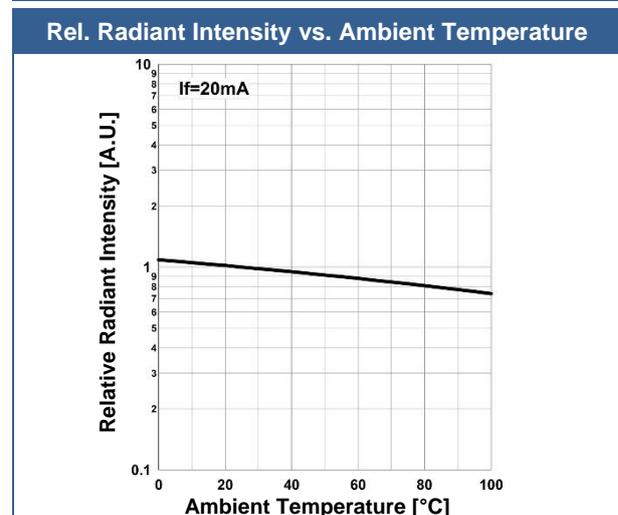
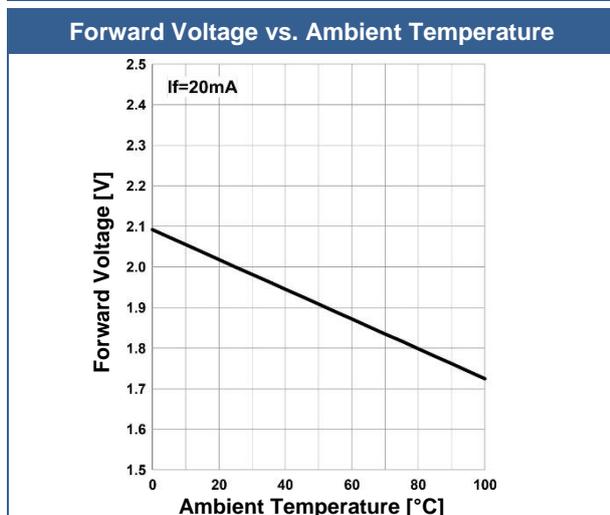
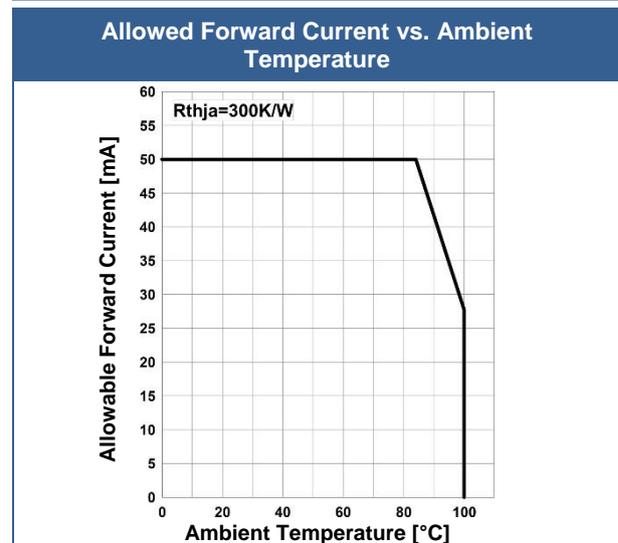
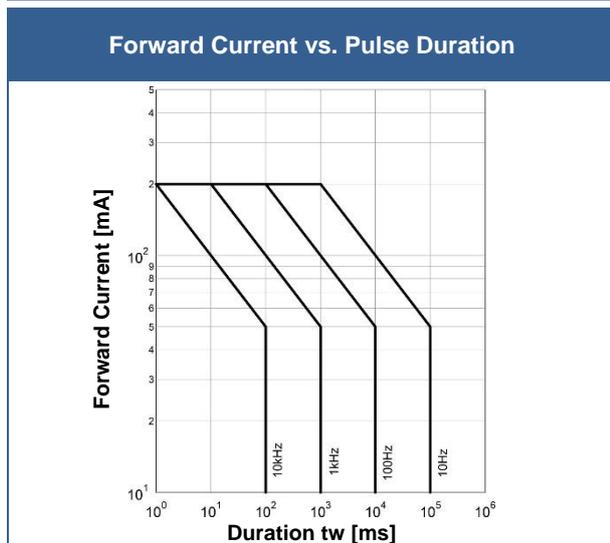
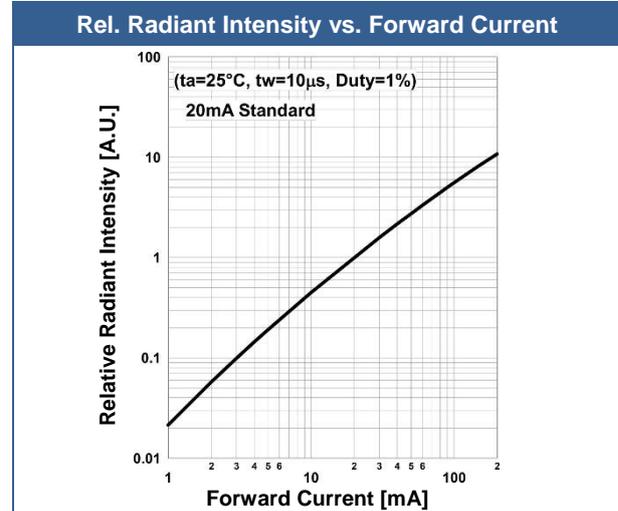
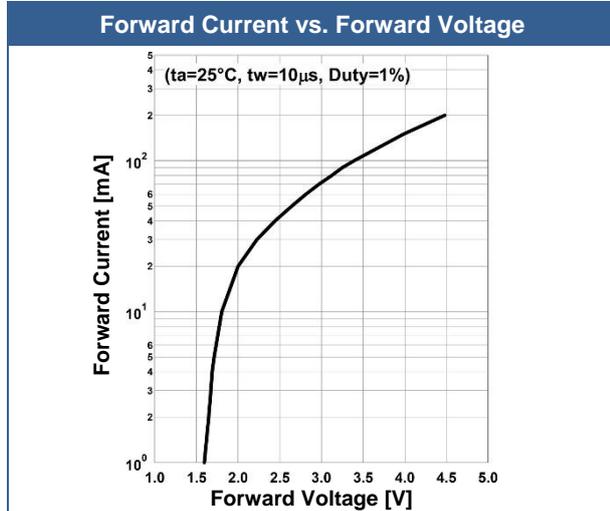
Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength	$\lambda_P$	$I_F=20\text{mA}$	680		700	nm
Half Width	$\Delta\lambda$	$I_F=20\text{mA}$		23		nm
Forward Voltage	$V_F$	$I_F=20\text{mA}$		2.0	2.3	V
		$I_F=50\text{mA}, 20\text{ms}$		2.6		
Radiated Power *1	$P_O$	$I_F=20\text{mA}$		5.8		mW
		$I_F=50\text{mA}, 20\text{ms}$		15		
		$I_{FP}=200\text{mA}$		62		
Radiant Intensity *2	$I_E$	$I_F=20\text{mA}$		34		mW/sr
		$I_F=50\text{mA}, 20\text{ms}$		93		
		$I_{FP}=200\text{mA}$		360		
Viewing Angle	$\varphi$	$I_F=20\text{mA}$		32		deg.
Rise Time	$t_R$	$I_F=20\text{mA}$		20		ns
Fall Time	$t_F$	$I_F=20\text{mA}$		20		ns

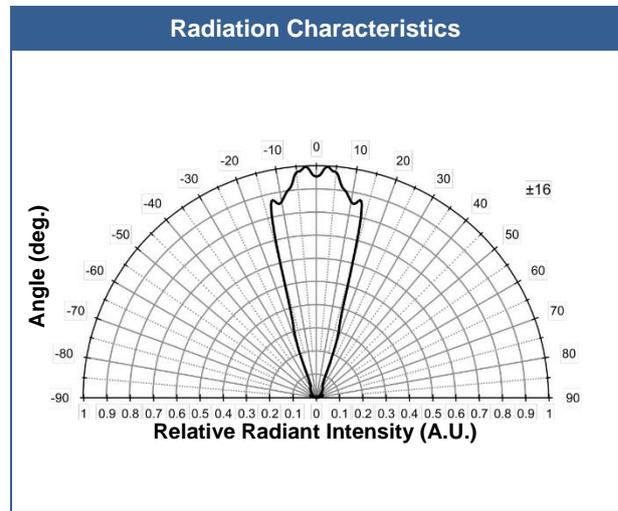
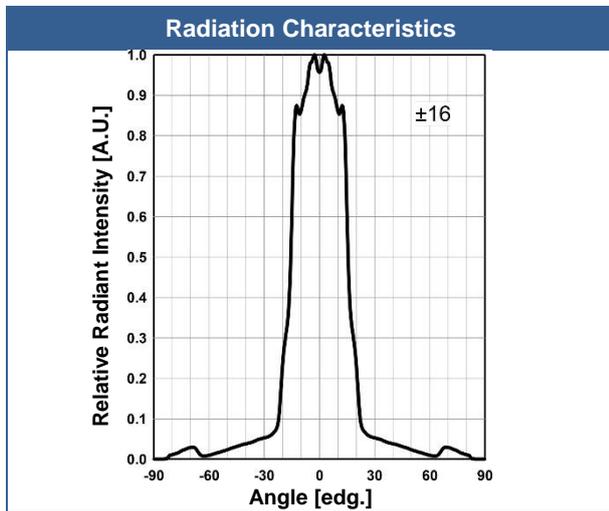
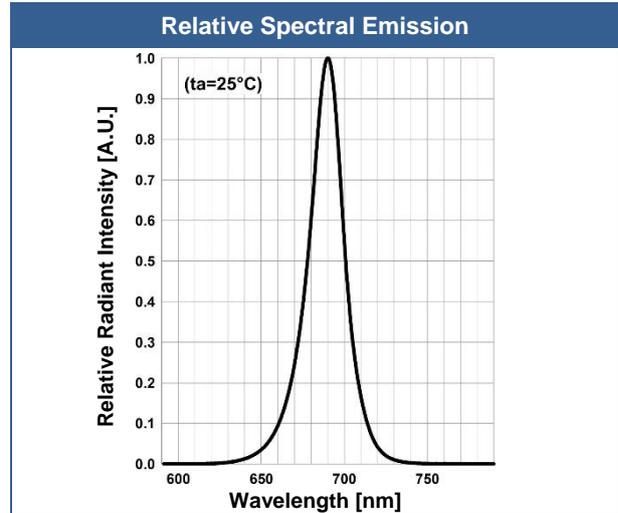
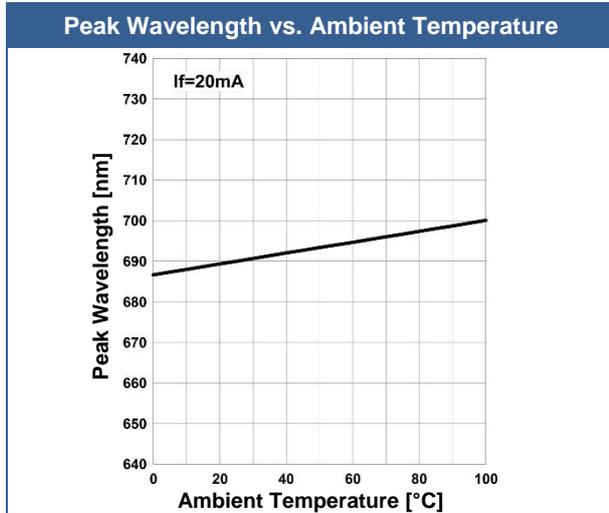
\*1 measured by S3584-08

\*2 measured by CIE127-2007 Condition B

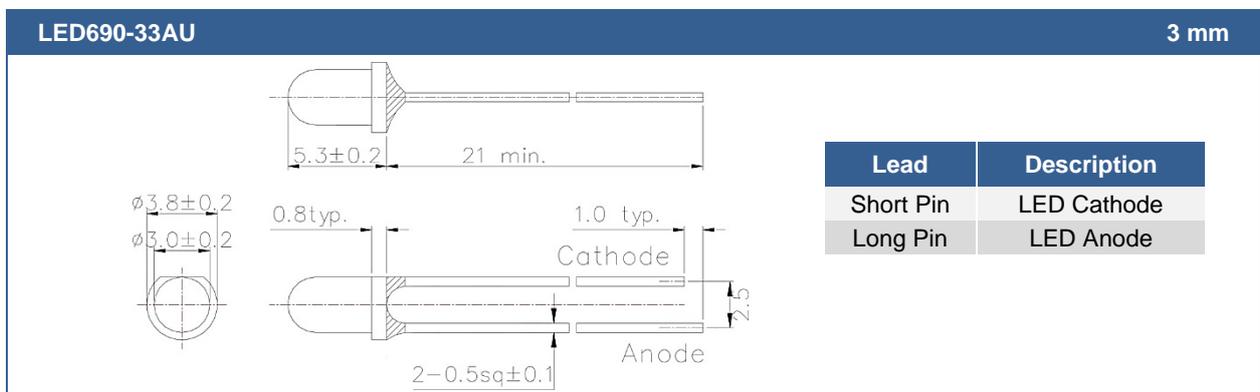


## Typical Performance Curves





## Outline Dimensions



All Dimensions in mm

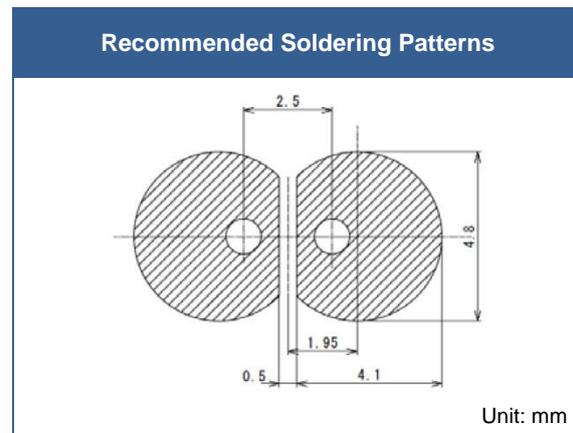
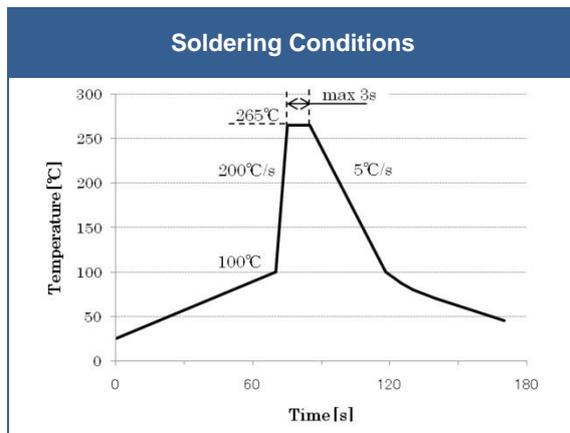


## Precautions

### 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
- Do not solder the LED closer than 3 mm from the base of the lead.

### Recommended soldering conditions:



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, 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.