



## AlGaInP Red Chip TC709UR

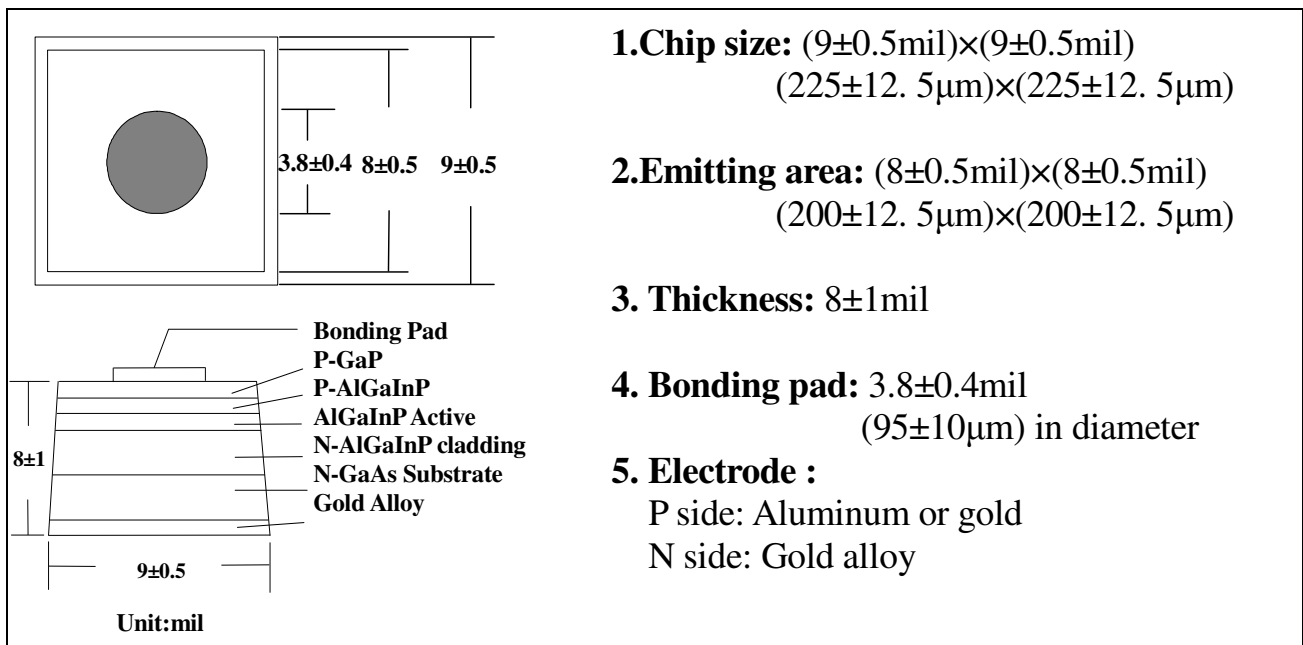
### 1.Product Description:

TC709UR is a ultra red LED chip fabricated from aluminum gallium indium phosphide ( AlGaInP ). The chip has optimized current-spreading and good thermal resistance capable of producing high light output provides excellent readability under sunlight and dependable performance. TC709UR AlGaInP LED chip is ideal for use in indoor / outdoor LED application with value adding and energy saving features.

### 2.Features:

- ◆ Ultra Red
- ◆ AlGaInP/GaAs
- ◆ Super High Brightness
- ◆ Indoor/Outdoor Applications

### 3.Chip Dimensions and Structure:



#### 4. Electro-optical Characteristics at 25°C:

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITION
Forward Voltage	$V_F$	-	2.0	2.3	V	$I_F=20\text{mA}$
Reverse Voltage	$V_R$	5	-	-	V	$I_R=10\mu\text{A}$
Leakage current	$I_r$	-	-	1	$\mu\text{A}$	$V_r=9\text{V}$
Wavelength	$\lambda_D$	627	630	635	nm	$I_F=20\text{mA}$
Luminous Intensity	$I_v$	-	※	-	mcd	$I_F=20\text{mA}$

※

- Rank 02 :  $20 \leq I_v(\text{min}) < 30\text{mcd}$
- Rank 03 :  $30 \leq I_v(\text{min}) < 40\text{mcd}$
- Rank 04 :  $40 \leq I_v(\text{min}) < 50\text{mcd}$
- Rank 05 :  $50 \leq I_v(\text{min}) < 60\text{mcd}$
- Rank 06 :  $60 \leq I_v(\text{min}) < 70\text{mcd}$
- Rank 07 :  $70 \leq I_v(\text{min}) < 80\text{mcd}$

#### 5. Absolute Maximum Ratings:

Parameter	Symbol	Condition	Rating
Forward DC current	$I_f$	$T_a=25^\circ\text{C}$	$\leq 30\text{mA}$
Junction Temp	$T_j$	---	$\leq 115^\circ\text{C}$
Reverse Voltage	$V_r$	$T_a=25^\circ\text{C}$	$\leq 10\text{V}$
Storage Temp	$T_{\text{stg}}$	chip	$-40 \sim 85^\circ\text{C}$
		chip on tape/storage	$0 \sim 30^\circ\text{C}$ $\text{RH} \leq 60\%$
		chip on tape/transportation	$-20 \sim 50^\circ\text{C}$
Temp during packaging	---	---	Max $265^\circ\text{C}$ ( $\leq 15\text{sec}$ )

#### Note:

- 1) Using the maximum rated current or voltage, is used as a single chip, and is a limit on the PCB board and no glue, independent constant-current source driver. Higher than the rated conditions, P-N junction temperature higher than  $115^\circ\text{C}$  can lead to damage of the LED chip.
- 2) Under the condition of maximum  $265^\circ\text{C}$  high temperature used only for 15 seconds, high temperature or time is too long, can cause damage to the chip.
- 3) The best storage conditions of Blue tape is placed in the shade dry environment,



**Uni Light Technology Inc.**

■Tel : 0769-87631888 ■Fax : 0769-87631888-166

Indoor temperature is not higher than 30°C, Relative humidity below 60%, shelf life is 1 year.

## 6.Characteristic Curves:

**Remark: These are the typical TC709UR measured values, along with different brightness and wavelength, the actual value is slightly different.**

Fig1. Forward Current vs. Forward Voltage:

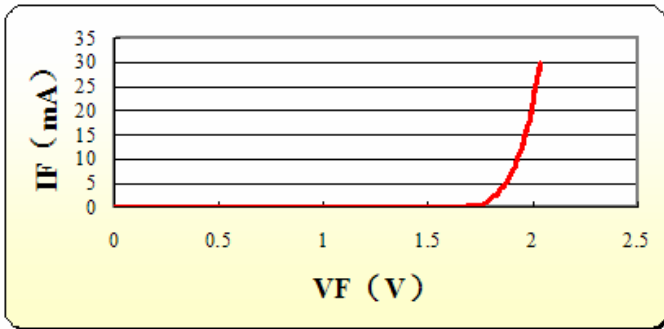


Fig2. Forward Current vs. Relative Intensity:

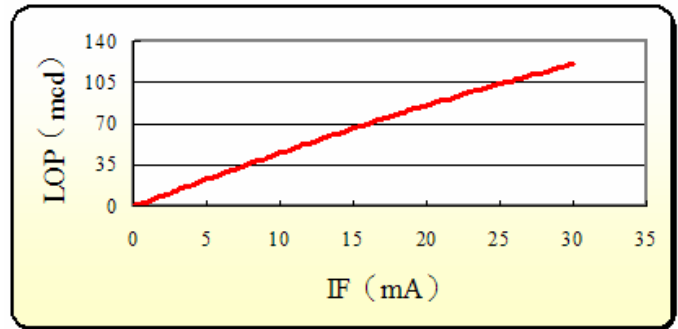


Fig3. Forward Current vs. Relative Wavelength:

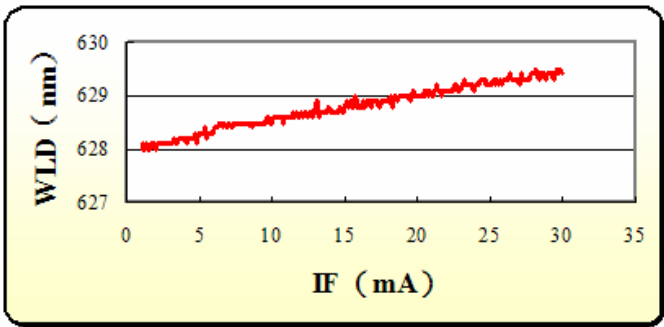


Fig4. Life Test at 20mA R.T. 1000hrs:

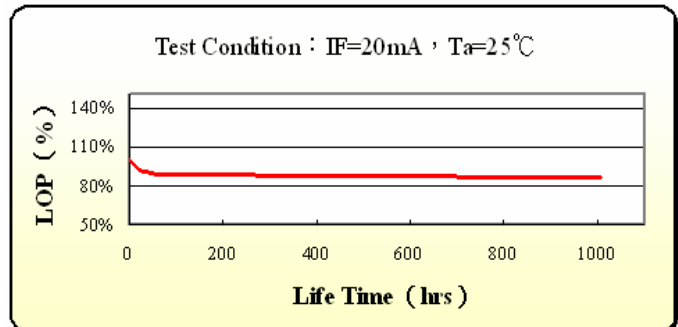


Fig5. Temperature vs. Relative Wavelength:

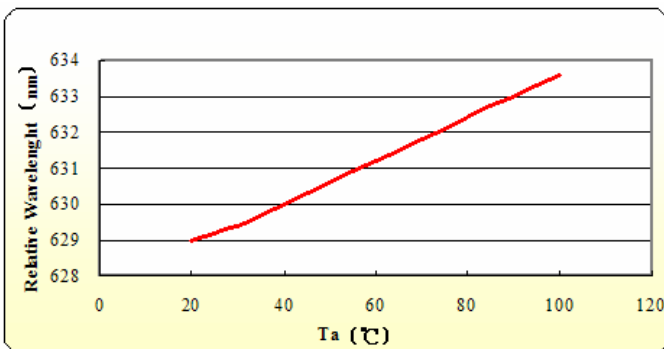
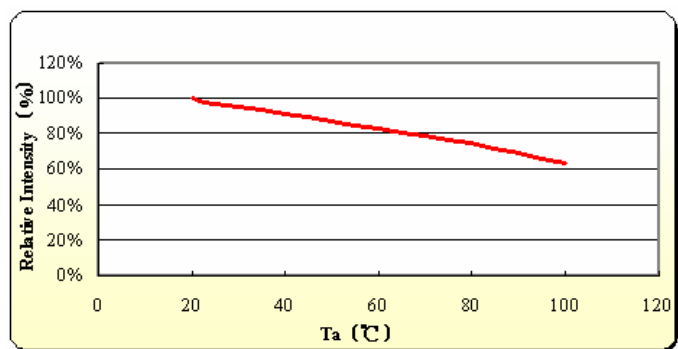


Fig6. Temperature vs. Relative Intensity:



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