

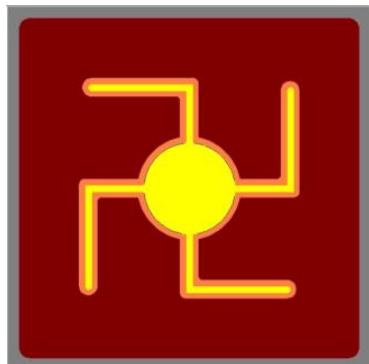


014MO-U-FF1

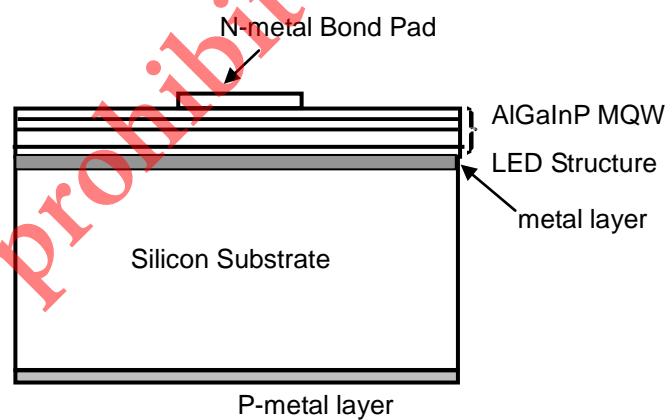
1. Descriptions:

014MO-U is an orange LED chip made from Aluminum Gallium Indium Phosphide (AlGaNp) MOCVD process and bonded with Silicon. It is fabricated by the HPO's proprietary metal Bonding mechanism, 014MO-U is featured by homogeneous and high light output at all sides with superior beam pattern. Excellent performance under sunlight and reliable life-long stability make 014MO-U ideal for both lighting and outdoor applications.

2. Chip Diagram:



Chip pattern



Chip Side view

3. Chip characteristics:

Substrate	Si
Emitting material	AlGaNp
p-pad electrode	Au-alloy
n-pad electrode	Au-alloy
Chip size	360±25um × 360±25um
Chip thickness	150±25um
Pad Diameter	84±15um



4. Electrical and Optical Characteristics($T_a=25^{\circ}\text{C}$):

Parameter	Condition *1	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F=20\text{mA}$	V_{F1}	1.8	2.1	2.4	V
Threshold voltage	$I_F=10\mu\text{A}$	V_{F3}	1.3	1.5	1.8	V
Reverse current	$V_R=5\text{V}$	I_R	-	-	10.0	μA
Peak wavelength	$I_F=20\text{mA}$	λ_p	605	-	625	nm
Dominant wavelength	$I_F=20\text{mA}$	λ_d	600	-	615	nm
Half width *2	$I_F=20\text{mA}$	$\Delta\lambda$	-	15	-	nm
Luminous Intensity *3	$I_F=20\text{mA}$	LOP	700	-	-	mcd

Note:

*1 IF : DC Forward current VR : Reverse voltage

*2 Value of Half width is only for reference

*3 Luminous Intensity is measured by HPO's equipment on bare chips.

4 Characteristic curves are measured on standard TO-46 package type without encapsure.

5. Characteristic Curves:

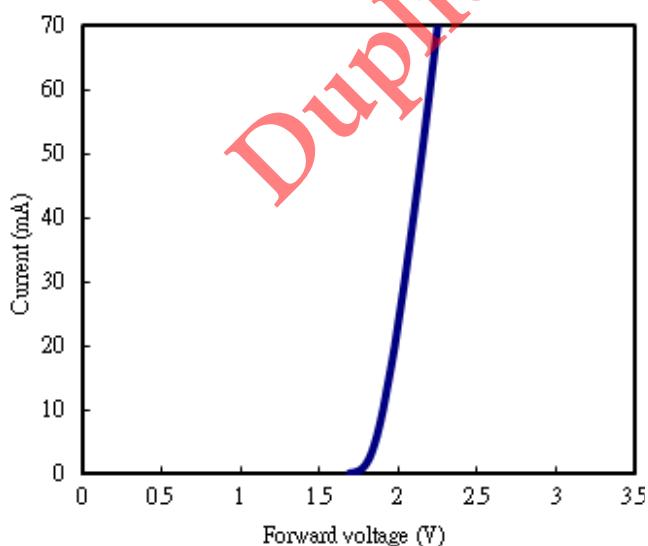


Fig.1 The I-V characteristics (0-70mA)

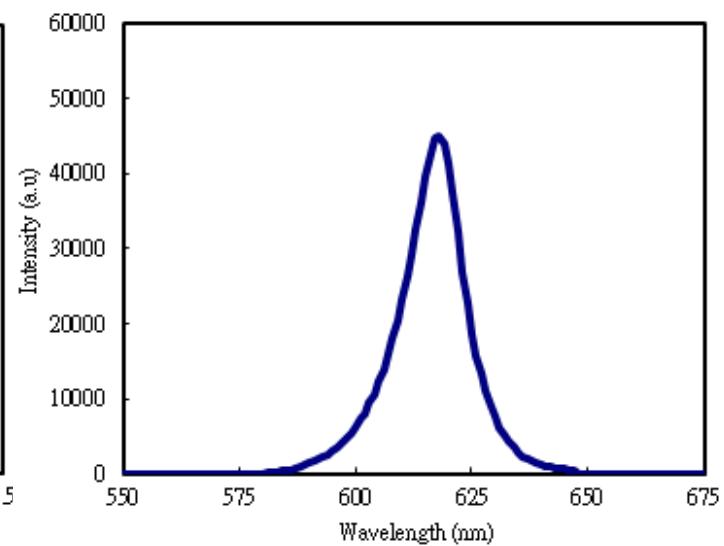


Fig.2 The EL spectrum

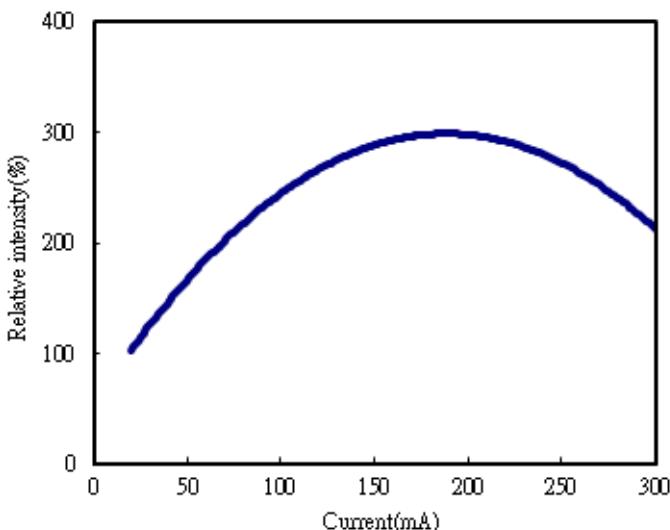


Fig.3 Relative intensity vs forward current

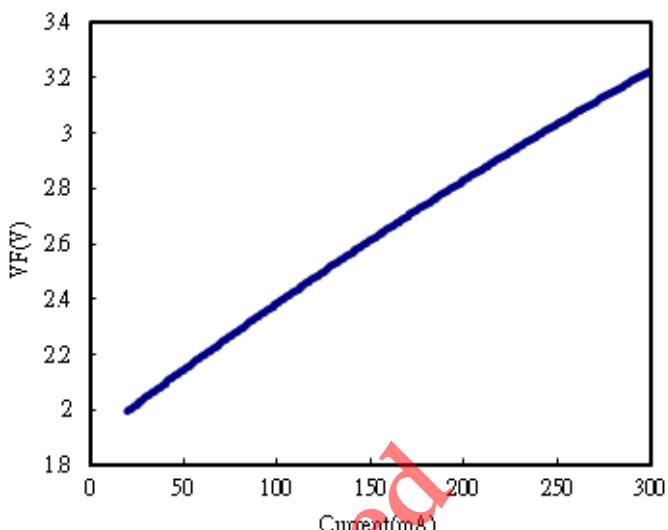


Fig.4 The V-I characteristics (0-300mA)

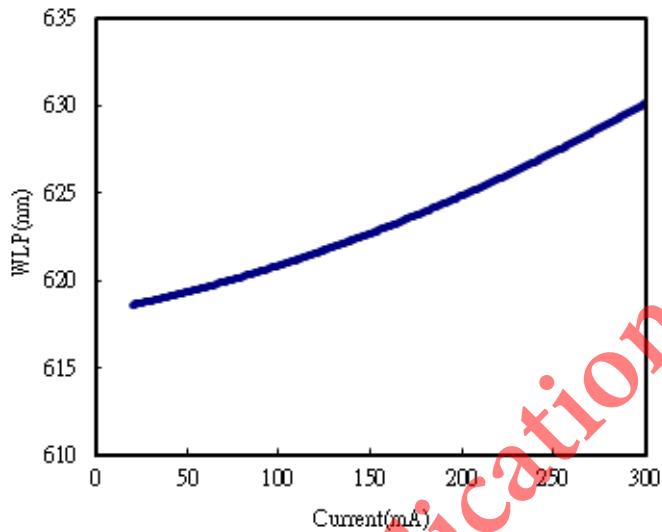


Fig.5 The WLP shift vs forward current

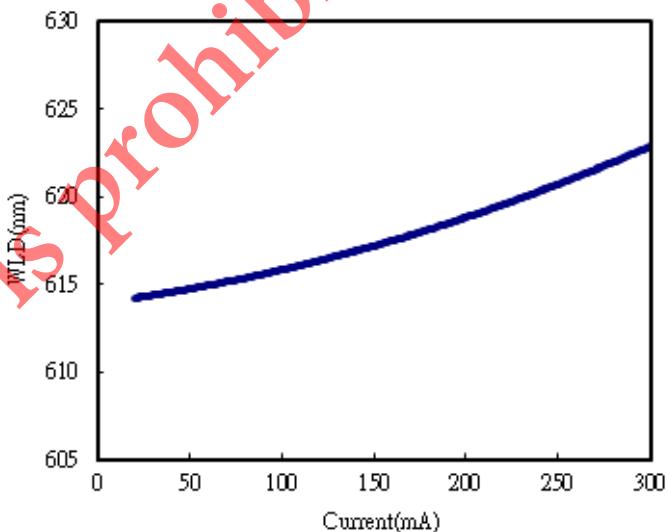


Fig.6 The WLD shift vs forward current

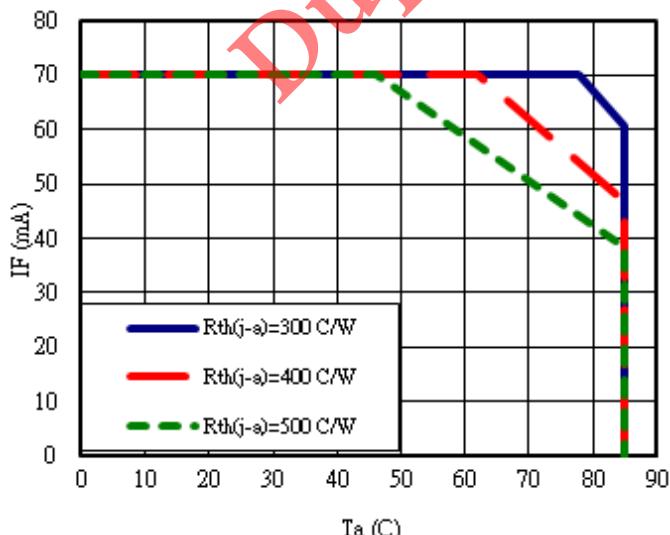


Fig.7 Derating curve based on $T_j(\max)=125^\circ\text{C}$

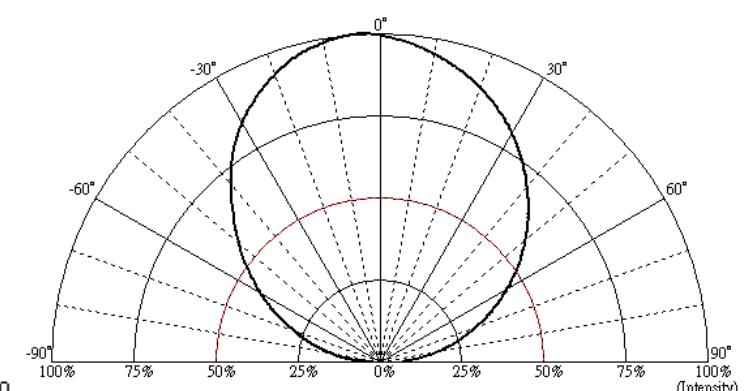


Fig.8 Light pattern and view angle of bare chip

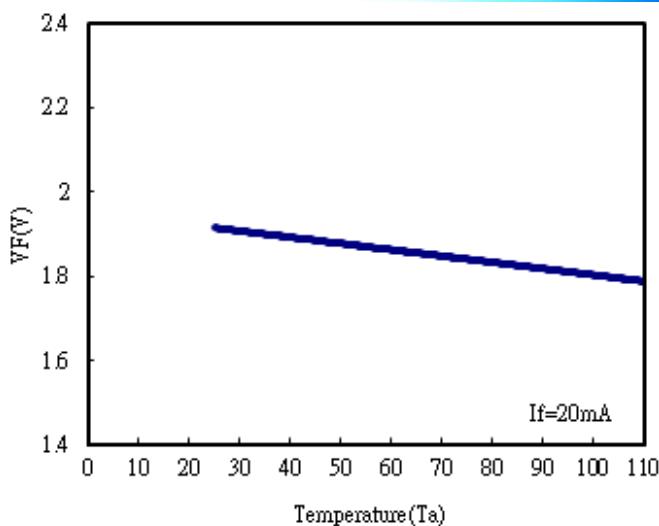


Fig.9 The forward voltage vs Ta(°C)

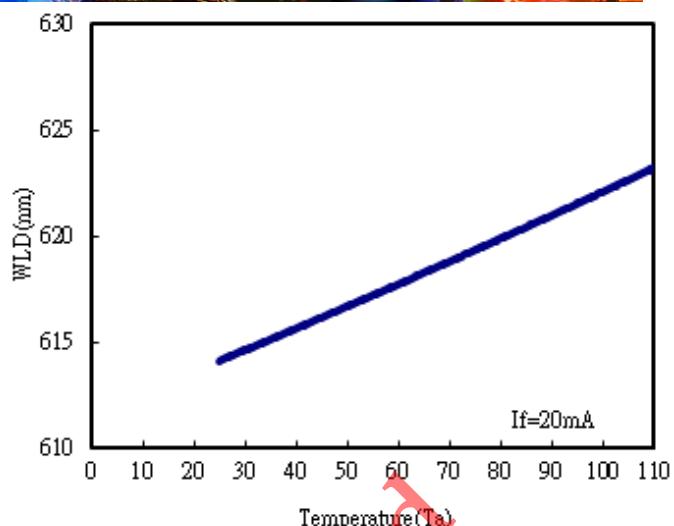


Fig.10 The WLD shift vs Ta(°C)

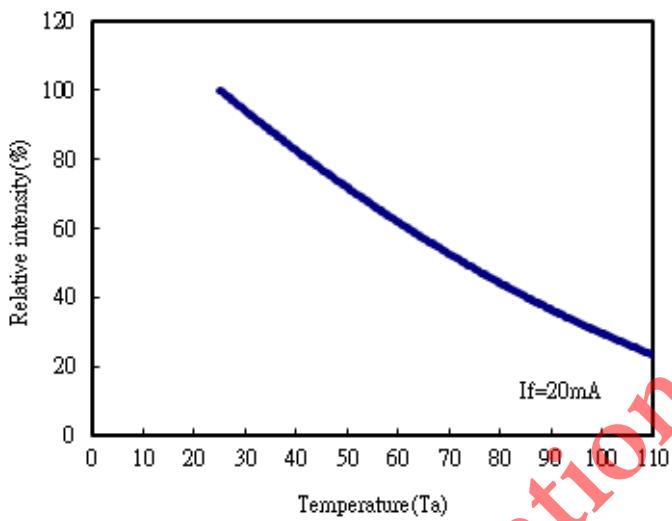


Fig.11 Relative intensity vs Ta(°C)

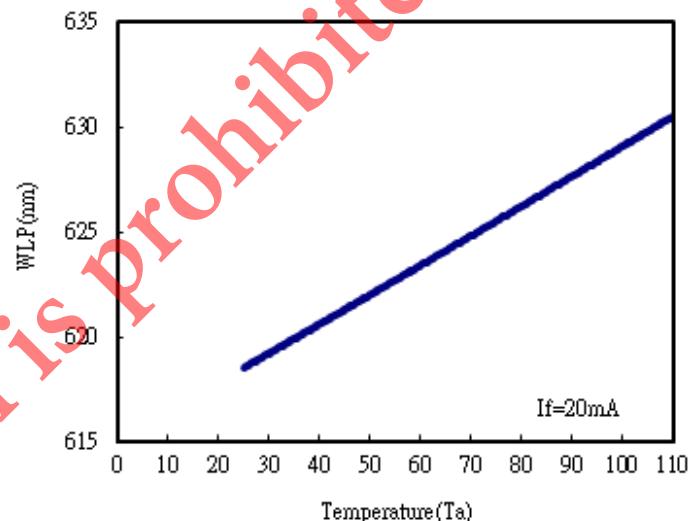


Fig.12 The WLP shift vs Ta(°C)

6. Absolute Maximum Ratings(Ta=25°C):

Parameter	Symbol	Condition	Rating
DC Forward Current	I _F	Ta=25°C	≤70mA
Peak Pulsing Current	I _{peak}	1/10 duty cycle @ 1kHz	≤150mA
Reverse Voltage	V _R	Ta=25°C	≤10V
Operating Temperature Range	T _{OP}	-	-40°C to +85°C
Storage Temperature Range	T _{stg}	Chip-on-tape/storage	+5°C to +30°C
		Chip-on-tape/transportation	-20°C to +65°C
LED Junction Temperature	T _j	-	≤125°C
Temperature during Packaging	-	-	280°C (<10sec)

Note: Maximum ratings are package dependent. The above maximum ratings were determined using a Metal Core Printed Circuit

Board(MCPCB) without an encapsulant. Stress in excess of the absolute maximum ratings such as forward current and junction temperature may cause damage to the LED.