

COTCO



COTCO LUMINANT DEVICE (HUIZHOU) LTD.

SPECIFICATION FOR COTCO LED LAMP

Document No : SPE/ LD-701CYL1-A5

Model No: LD-701CYL1-A5

Rev. No : 04

Date: 2005-07-20

Description:

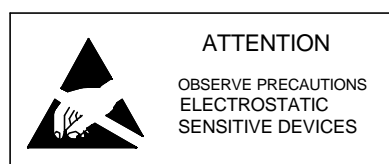
7 x 7mm, QFN Type,
High Power Amber LED For Illumination,
Clear Compound Encapsulated.

Dice Material: AlGaInP

Confirmed

by Customer: _____

Date: _____



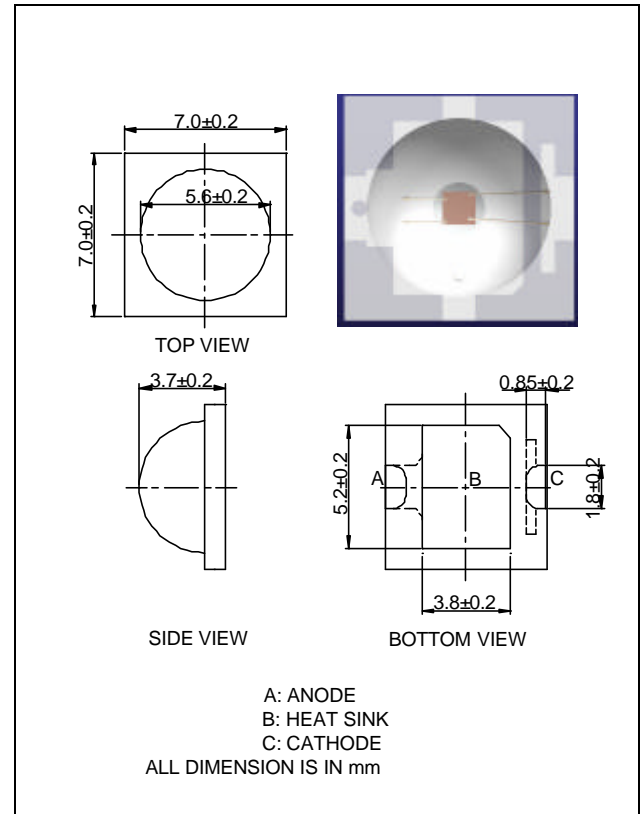
Features

- High luminous flux output for illumination
- Exposed pad design for excellent heat transfer
- Designed for high current operation
- Reflow soldering applicable

Absolute Maximum Ratings at Ta = 25°C (on metal core PCB)*

Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I_F	450	mA
Peak Forward Current**	I_{FP}	700	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	1.2	W
Operation Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +85	°C
Junction temperature	T_j	+115	°C
Junction-to-Ambient***	θ_{ja}	45	°C/W
Junction-to-case***	θ_{jc}	20	°C/W

Package Outline



*Metal core PCB defines as good heat transmission substrate (thickness of 2.0mm Al-based PCB in 20x20mm, $\theta_{jc} < 20$ /W could do)

** Where pulse width ≤ 0.1 msec, duty cycle $\leq 1/10$ *** Rth test condition: mounted on 2.0mm Al-based PCB in size of 20x20mm

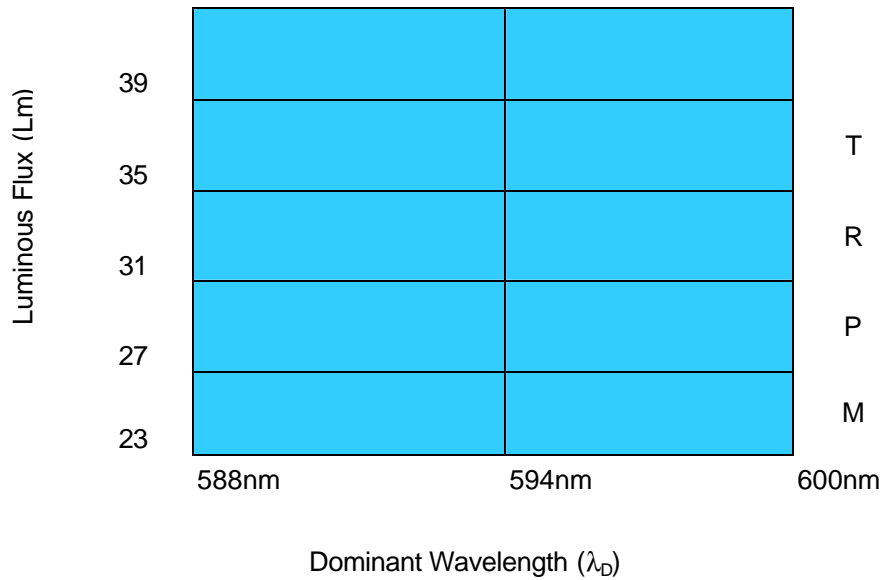
Typical Electrical & Optical Characteristics at Ta = 25°C (on metal core PCB)*

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 450$ mA		2.4	2.8	V
Reverse Current	I_R	$V_R = 5$ V	---	---	10	μ A
Luminous Flux	lumen	$I_F = 450$ mA	23	35	---	lm
Dominant Wavelength	λ_D	$I_F = 450$ mA	588	594	600	nm
50% Power Angle	$2\theta_{\frac{1}{2}}$	$I_F = 450$ mA	---	105	---	deg

Ranks Combination ($I_F = 450mA$)

Lamps are sorted to Luminous flux - lm & Wavelength - λ_D and rank as below:

*M+



*M+ indicates Luminous Flux is at M bin or above.

Forward Voltage (VF)

Rank	V2	V3
Voltage (V)	2.0 – 2.4V	2.4 – 2.8V

Important Notes:

- 1) All ranks will be included per delivery, rank ratio will be based on the dices distribution.
- 2) Pb content <1000PPM.
- 3) Tolerance of measurement of luminous flux is $\pm 10\%$.
- 4) Tolerance of measurement of dominant wavelength is $\pm 1nm$.
- 5) Tolerance of measurement of Vf is $\pm 0.1 V$.
- 6) Packaging methods are available for selection, Please refer to PACKAGING STANDARD.
- 7) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.
- 8) Please refer to APPLICATION NOTES for application.

Graphs

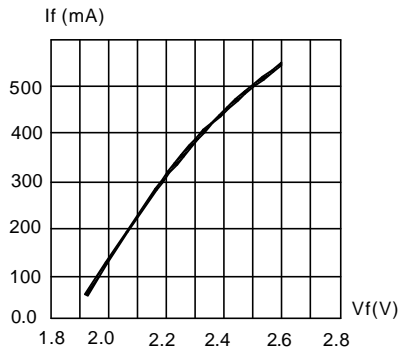


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

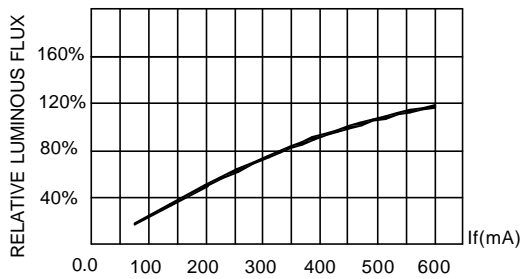


FIG.2 FORWARD CURRENT.

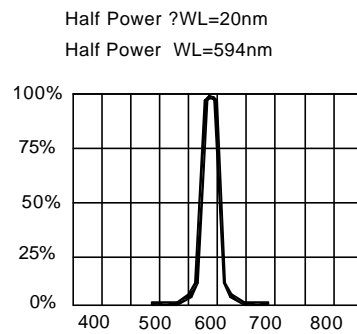


FIG.3 RELATIVE LUMINOUS FLUX VS. WAVELENGTH.

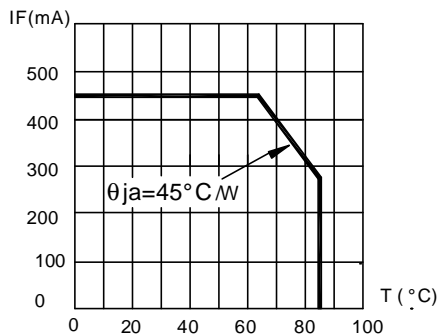


FIG.4 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON $T_{jmax}=115^{\circ}\text{C}$

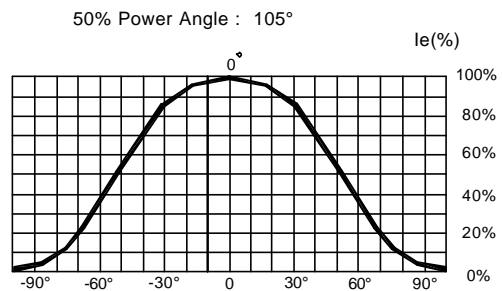


FIG.5 FAR FIELD PATTERN

Items	Signatures	Date	Revision History		
			Rev. No	Date	Change Description
Prepared by	LiuYin	2005-07-20			
Checked by	ShaBM	2005-07-20	02	2005-02-15	Update derating curve, typical flux value, typo error of heading.
Approved by	Thomson	2005-07-20	03	2005-04-22	Change T_{opr} & T_{stg} from $-20 \sim +85$ to $-30 \sim +85$
ECN#	FCN20050197		04	2005-07-20	Adding Junction-to-Ambient Adding Vf range & modifying Graphs T_{opr} & T_{stg} from $-30 \sim +85$ to $-40 \sim +85$

Data is subject to change without prior notice; please refer to COTCO Website for the latest version.

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