



## **SPECIFICATION FOR COTCO LED LAMP**

Document No: SPE/LC503AHR1-15Q-A  
Model No : LC503AHR1-15Q-A  
Rev. No: 04  
Date: 2006-03-24

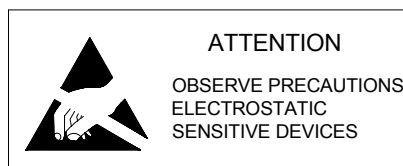
Description:

15 Degree 5mm Round LED Lamp in High Red Color with Water Transparent Lens and No Stopper

Dice Material: AlGaInP

Confirmed  
by Customer: \_\_\_\_\_

Date: \_\_\_\_\_



### Applications:

- Advertising Signs
- Indicators
- Traffic
- Automotive Lighting

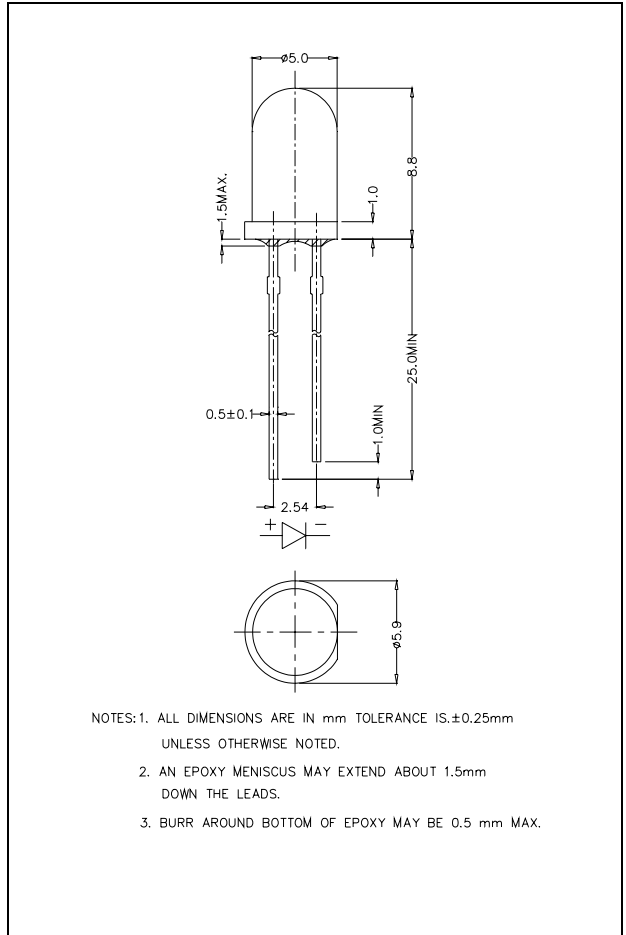
### Absolute Maximum Ratings at Ta = 25°C

Items	Symbol	Absolute maximum Rating	Unit
Forward Current*2	$I_F$	50	mA
Peak Forward Current*1	$I_{FP}$	200	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	130	mW
Operation Temperature	$T_{opr}$	-40 ~ + 95	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	°C
Lead Soldering Temperature	$T_{sol}$	Max.260°C for 3 sec Max. (3mm from the base of the epoxy bulb)	
Electrostatic Discharge Classification (MIL-STD-883E)	ESD	Class 1	

\*1 pulse width  $\leq 0.1$ msec duty  $\leq 1/10$

\*2 For long term performance the drive currents between 10mA and 30mA are recommended. Please contact COTCO sales representative for more information on recommended drive conditions.

### Dimension Drawing



### Typical Electrical & Optical Characteristics ( Ta = 25°C)

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F = 20$ mA	---	2.1	2.6	V
Reverse Current	$I_R$	$V_R = 5$ V	---	---	100	$\mu$ A
Dominant Wavelength	$\lambda_D$	$I_F = 20$ mA	618	624	630	nm
Luminous Intensity	$I_v$	$I_F = 20$ mA	5860	11000	---	mcd
50% Power Angle	$2\theta_{1/2}$ H-H	$I_F = 20$ mA	---	15	---	deg

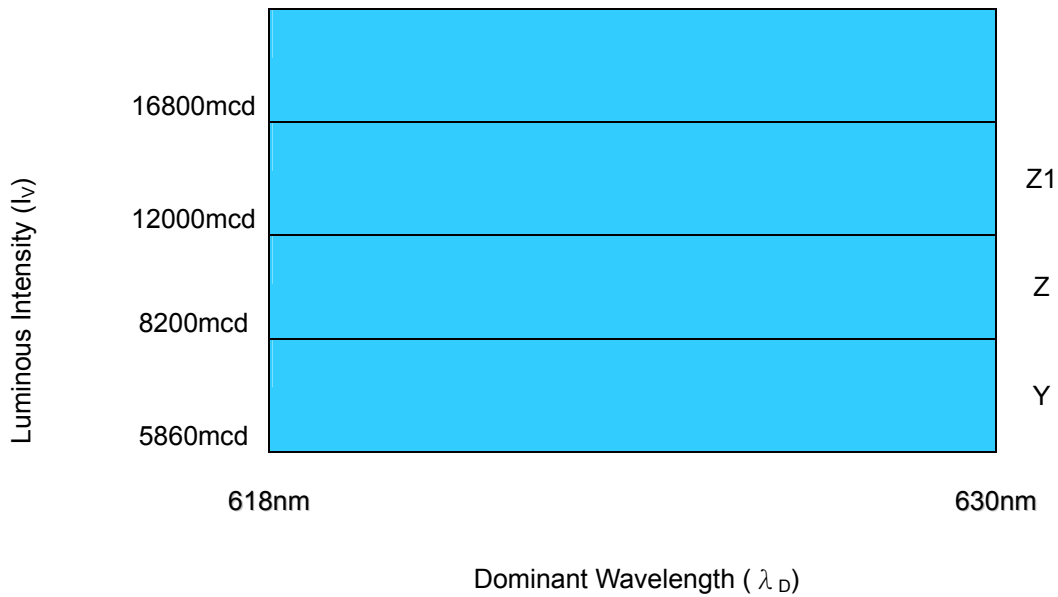
**Standard bins for LC503AHR1-15Q-A ( $I_F = 20\text{mA}$ ):**

Lamps are sorted to Luminous Intensity – $I_V$  & Dominant Wavelength –  $\lambda_D$  bins shown.

Orders for LC503AHR1-15Q-A may be filled with any or all bins contained as below.

All Luminous Intensity – $I_V$  & Dominant Wavelength –  $\lambda_D$  values shown and specified are at  $I_f=20\text{mA}$ .

**\* Y+**



\* Y+ indicates Luminous Intensity is at Y bin or above.

**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 intensity is  $\pm 15\%$ .
- 4) Tolerance of measurement of dominant wavelength is  $\pm 1\text{nm}$ .
- 5) Tolerance of measurement of Vf is  $\pm 0.05\text{V}$ .
- 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

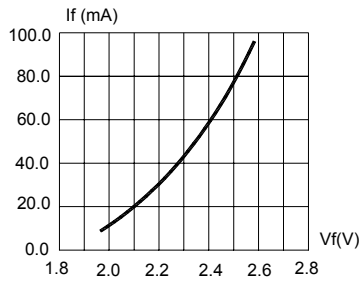


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

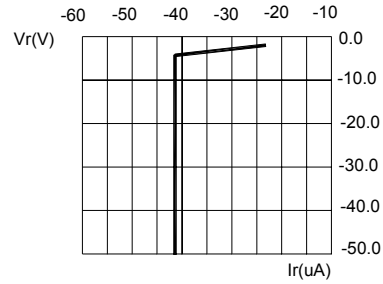


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

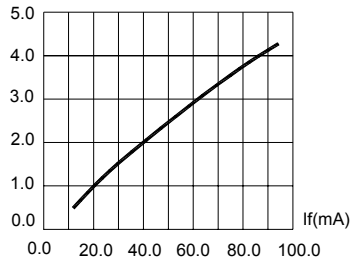


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

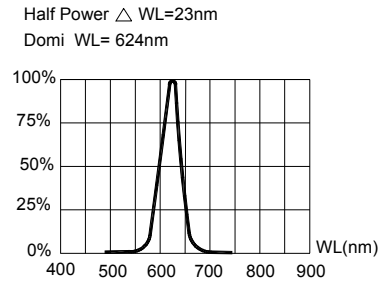


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

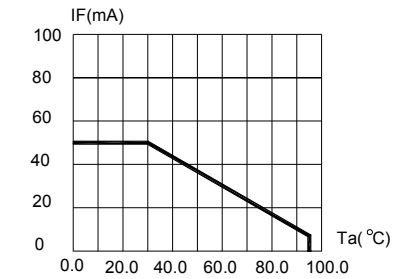


FIG.5 MAXIMUM FORWARD DC CURRENT VS. AMBIENT TEMPERATURE ( $T_{jmax}=105^{\circ}\text{C}$ )

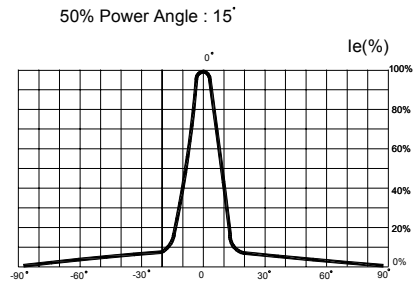


FIG.6 FAR FIELD PATTERN

Items	Signatures	Date
Prepared by	LiuZM	2006-03-24
Checked by	Aldosin	2006-03-24
Approved by	David	2006-03-24
FCN#	FCN20060077	

Revision History		
Rev. No	Date	Change Description
B	04Aug04	Change FIG.1&3
03	2005-06-29	Change IV from Z,Z1,Z2(typ)14000 to Y,Z,Z1 (typ)11000mcd.
04	2006-03-24	Cancel VF bin.

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

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