



COTCO LUMINANT DEVICE (HUIZHOU) LTD.

SPECIFICATION FOR COTCO LED LAMP

Document No: SPE/ LM2-AHR1-F1
Model No : LM2-AHR1-F1
Rev. No : 02
Date: 2005-03-25

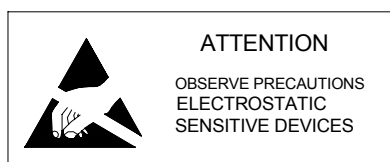
Description:

60 Degree 3.2 x 2.8mm Power SMD With
Lens in Amber Color with Water Transparent

Dice Material: AlGaInP

Confirmed
By Customer: _____

Date: _____



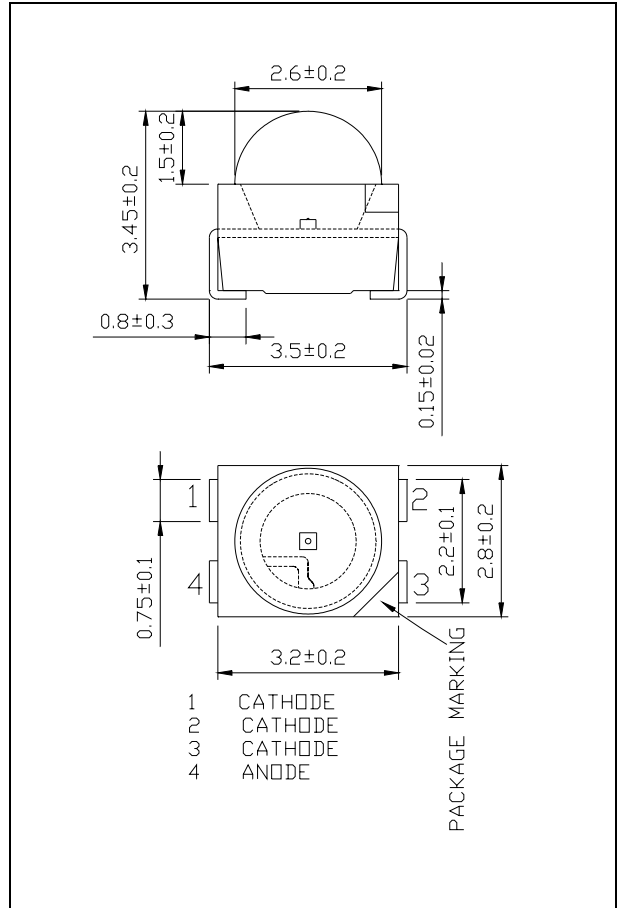
Applications:

- Traffic Light
- Backlighting(LCD,Switches,Keys,Displays,Illuminated Advertising)
- Interior And Exterior Automotive Lighting(e.g. Dashboard Backlight And Brake Lights)
- Substitution Of Micro Incandescent Lamps
- Marker Lights(e.g. Steps,Exit Ways,Etc.)
- Signal And Symbol Luminaire

Absolute Maximum Ratings at Ta = 25°C

Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I_F	70	mA
Peak Forward Current*	I_{FP}	200	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	210	mW
Operation Temperature	T_{opr}	-40 ~ + 100	°C
Storage Temperature	T_{stg}	-40 ~ + 100	°C
Junction temperature	T_j	+110	°C
Junction/ambient **	$R_{th JA}$	300	°C /W
Junction/solder point	$R_{th JS}$	150	°C /W
Electrostatic Discharge Classification (MIL-STD-883E)	ESD	Class 1	

Dimension Drawing



*pulse width ≤ 0.1 msec duty $\leq 1/10$ ** Rth test condition: Mounted on PC Board FR 4(pad size ≥ 16 mm²)

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

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F = 50$ mA	---	2.4	3.0	V
Reverse Current	I_R	$V_R = 5$ V	---	---	10	μ A
Luminous Flux	Φ_V	$I_F = 50$ mA	---	2900	---	mlm
Luminous Intensity	I_V	$I_F = 50$ mA	1800	2500	---	mcd
Dominant Wavelength	λ_D	$I_F = 50$ mA	618	624	630	nm
50% Power Angle	$2\theta_{1/2}$	$I_F = 50$ mA	---	50	---	deg

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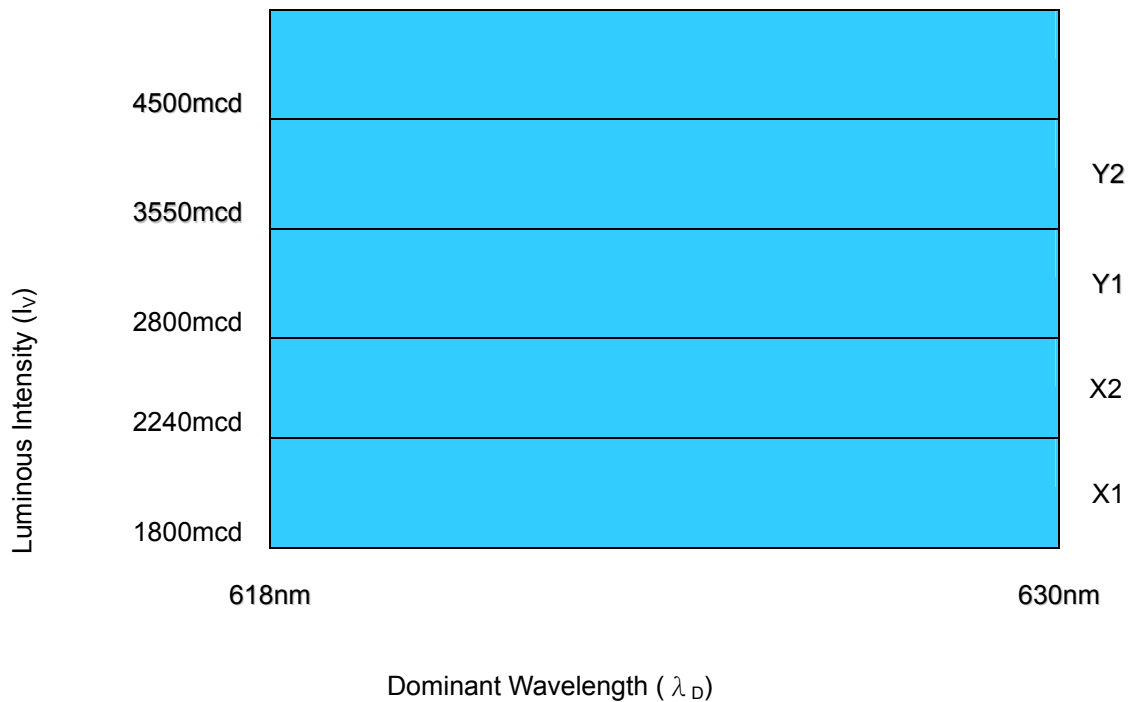
Standard bins for LM2-AHR1-F1 ($I_F = 50\text{mA}$):

Lamps are sorted to Luminous Intensity – I_V & Dominant Wavelength – λ_D bins shown.

Orders for LM2-AHR1-F1 may be filled with any or all bins contained as below.

All Luminous Intensity – I_V & Dominant Wavelength – λ_D values shown and specified are at $I_F=50\text{mA}$.

* X1+



* X1+ indicates Luminous Intensity is at X1 bin or above.

Important Notes:

- 1) All ranks will be included per delivery, rank ratio will be based on Dices distribution.
- 2) Tolerance of measurement of luminous intensity is $\pm 10\%$
- 3) Tolerance of measurement of dominant wavelength is $\pm 1\text{nm}$.
- 4) Tolerance of measurement of Vf is $\pm 0.05\text{ V}$.
- 5) Packaging methods are available for selection, please refer to PACKAGING STANDARD.
- 6) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.
- 7) Please refer to APPLICATION NOTES for Application.

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Graphs

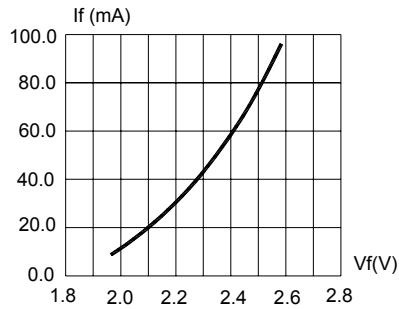


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

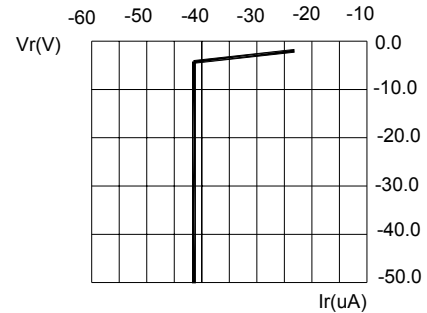


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

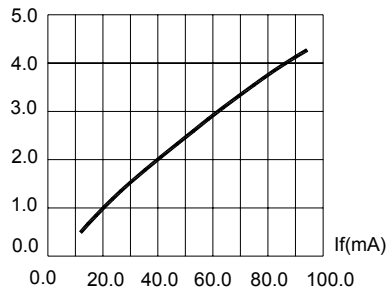


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT.

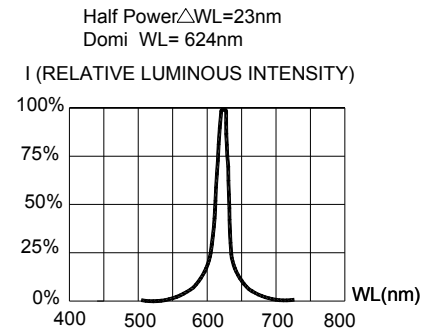


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

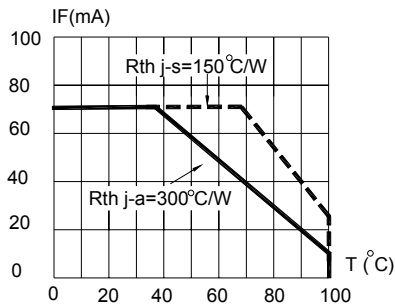


FIG.5 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON $T_{jmax}=110^{\circ}\text{C}$

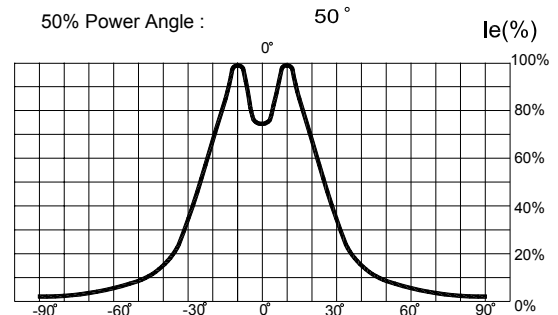


FIG.6 FAR FIELD PATTERN

Items	Signatures	Date	Revision History		
Prepared by	Meiliping	2005-03-25	Rev.No	Date	Change Description
Checked by	LiuHP	2005-03-25	02	2005-03-25	Release. Change angel (avg) from 60 deg to 50 deg, IV (avg) from 3000 to 2500, Φ_V from 3500 to 2900;add R_{th} .
Approved by	XieJH	2005-03-25			
ECN#	ECN-H20050095				

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

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