

**SPECIFICATION FOR COTCO LED LAMP**

Document No: SPE/LM1-EBL1-11-N2-MT  
Model No : LM1-EBL1-11-N2-MT  
Rev. No : 02  
Date: 2007-12-06

Description:

120 Degree 3.2 x 2.7mm Power SMD in Blue Color  
with Water Transparent

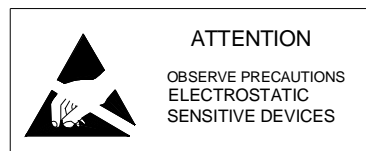
\*This specification is only for MT

Dice Material: InGaN

Confirmed

By Customer: \_\_\_\_\_

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



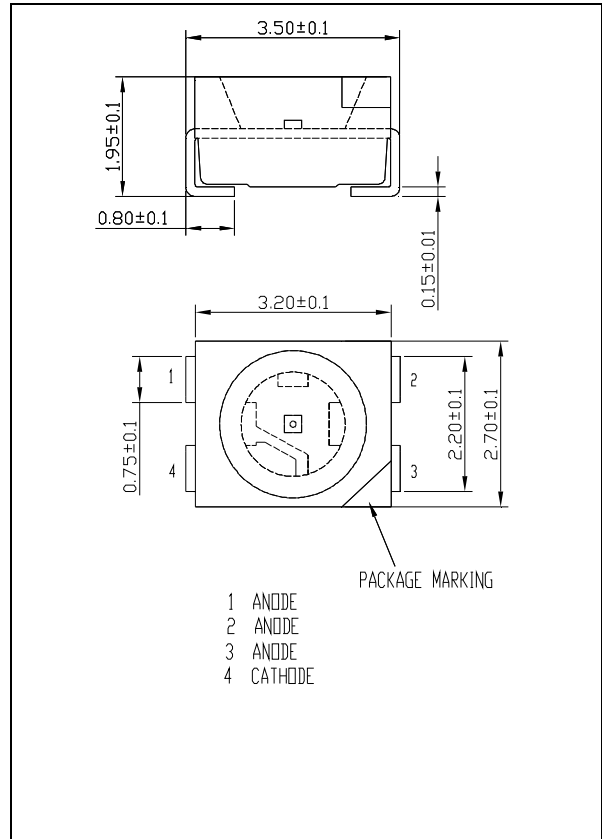
**Applications:**

- Indicators
- Illuminations
- LCD Back Lights
- Automobile's Applications
- Blue Color Displays

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

Items	Symbol	Absolute maximum Rating	Unit
Forward Current	I <sub>F</sub>	30	mA
Peak Forward Current*	I <sub>FP</sub>	100	mA
Reverse Voltage	V <sub>R</sub>	5	V
Power Dissipation	P <sub>D</sub>	130	mW
Operation Temperature	T <sub>opr</sub>	-40 ~ + 100	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ + 100	°C
Junction temperature	T <sub>j</sub>	+110	°C
Junction/ambient **	R <sub>th JA</sub>	350	°C/W
Junction/solder point	R <sub>th JS</sub>	200	°C/W

**Dimension Drawing**



\*pulse width ≤0.1msec duty ≤1/10 \*\* Rth test condition: Mounted on PC Board FR 4(pad size≥16mm<sup>2</sup>)

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

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 30mA	---	3.6	4.2	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 5V	---	---	10	μA
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> = 30mA	180	400	---	mcd
Dominant Wavelength	λ <sub>D</sub>	I <sub>F</sub> = 30mA	460	470	480	nm
50% Power Angle	2 θ <sub>½</sub>	I <sub>F</sub> = 30mA	---	120	---	deg

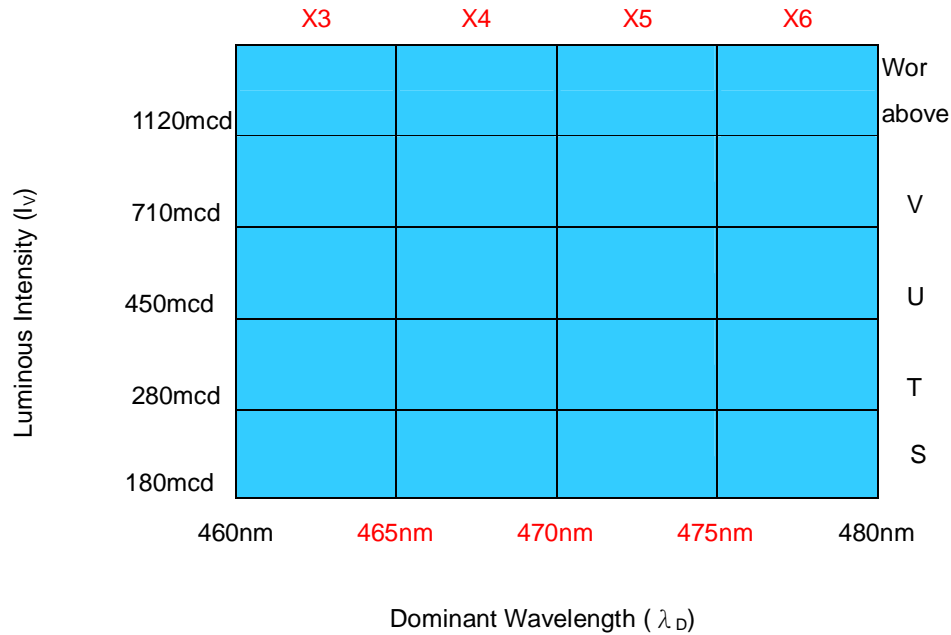
**Standard bins for LM1-EBL1-11-N2-MT (I<sub>F</sub> = 30mA):**

Lamps are sorted to Luminous Intensity –I<sub>v</sub> & Dominant Wavelength –λ<sub>D</sub> bins shown.

Orders for LM1-EBL1-11-N2-MT may be filled with any or all bins contained as below.

All Luminous Intensity –I<sub>v</sub> & Dominant Wavelength –λ<sub>D</sub> values shown and specified are at I<sub>f</sub>=30mA.

\* **S+**



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

**Forward Voltage (V<sub>F</sub>)**

Rank	V <sub>h</sub>	V <sub>d</sub>	V <sub>e</sub>	V <sub>f</sub>
Voltage	2.6-3.0V	3.0-3.4V	3.4-3.8V	3.8-4.2V

\*Majority VF bins are highlighted in Yellow.

**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 ±10%
- 3) Tolerance of measurement of dominant wavelength is ±1nm.
- 4) Tolerance of measurement of V<sub>f</sub> is ±0.05 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.
- 8) Do not handle the device by the SMD surface. care must be taken to avoid damage to the SMD surface or the interior of the device that can be damaged by excessive force to the SMD surface.

## Graphs

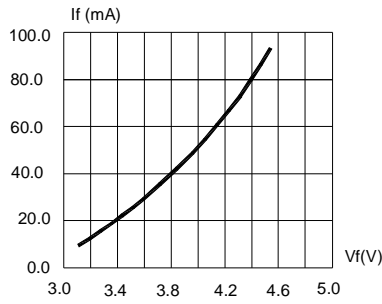


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

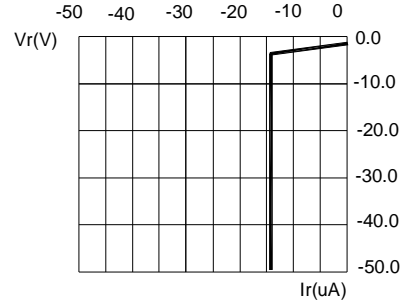


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

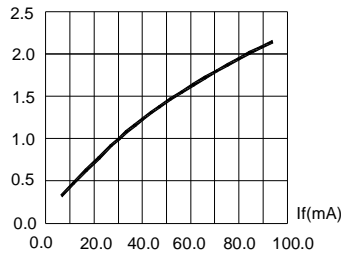


FIG.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

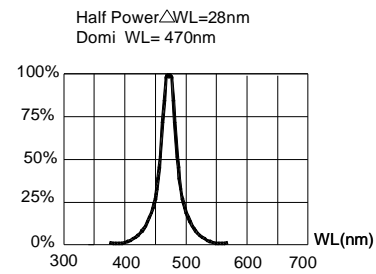


FIG.4 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH.

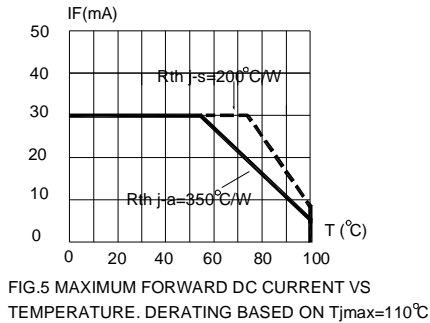


FIG.5 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON  $T_{jmax}=110^{\circ}\text{C}$

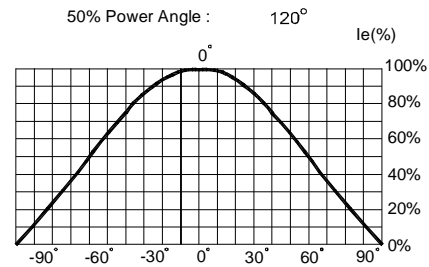


FIG.6 FAR FIELD PATTERN.

Items	Signatures	Date	Revision History		
Prepared by	LiuYin	2007-12-06	Rev.No	Date	Change Description
Checked by	WangXuan	2007-12-06	02	2007-12-06	Add WD rank X3-X6
Approved by	DavidLiu	2007-12-06			
FCN#	FCN200703				

Data is subject to change without prior notice.

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