

## SPECIFICATION FOR COTCO LED LAMP

MODEL No : LS1-TYL1-01-MT  
DOC. No : 03 11Nov04

Description:

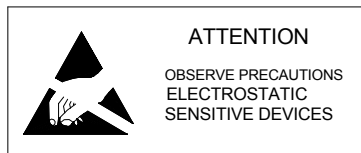
120 Degree 4.0x 4.0mm Side SMD in  
Amber Color with Water Transparent

\*This specification is only for MT\*

Dice Material: AlGaInP

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

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



**COTCO LUMINANT DEVICE (HUIZHOU) LTD.**



For part availability and ordering information please call Toll Free: 800.984.5337  
Website: [www.marktechopto.com](http://www.marktechopto.com) | Email: [info@marktechopto.com](mailto:info@marktechopto.com)

### Applications:

- Optical indicators
- Coupling into light guides
- Back lights(LCD, switches, keys, displays, illuminated advertising,general lighting)
- Interior automotive lighting.(e.g.dashboard backlighting, etc. )
- Automobile's Applications
- Marker lights (e.g. steps, exit ways, etc)
- Signal and symbol luminaire

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

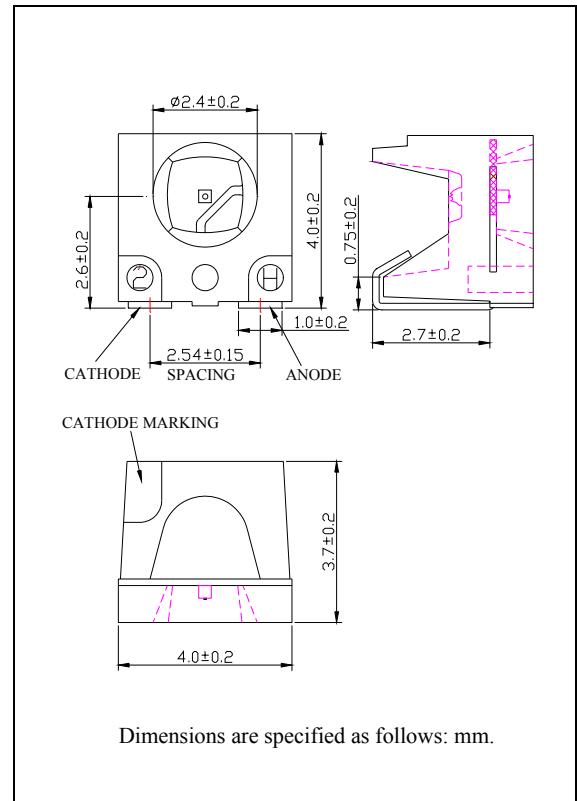
Items	Symbol	Absolute maximum Rating	Unit
Forward Current	$I_F$	50	mA
Peak Forward Current*	$I_{FP}$	200	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	130	mW
Operation Temperature	$T_{opr}$	-40 ~ + 100	°C
Storage Temperature	$T_{stg}$	-40 ~ + 100	°C
Junction temperature	$T_j$	+110	°C

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

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

Items	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	$V_F$	$I_F = 20\text{mA}$	---	2.1	2.6	V
Reverse Current	$I_R$	$V_R = 5\text{V}$	---	---	10	$\mu\text{A}$
Luminous Intensity	$I_v$	$I_F = 20\text{mA}$	224	320	---	mcd
Dominant Wavelength	$\lambda_D$	$I_F = 20\text{mA}$	584	591	596	nm
50% Power Angle	$2\theta_{1/2}$	$I_F = 20\text{mA}$	---	120	---	deg

### Dimension Drawing



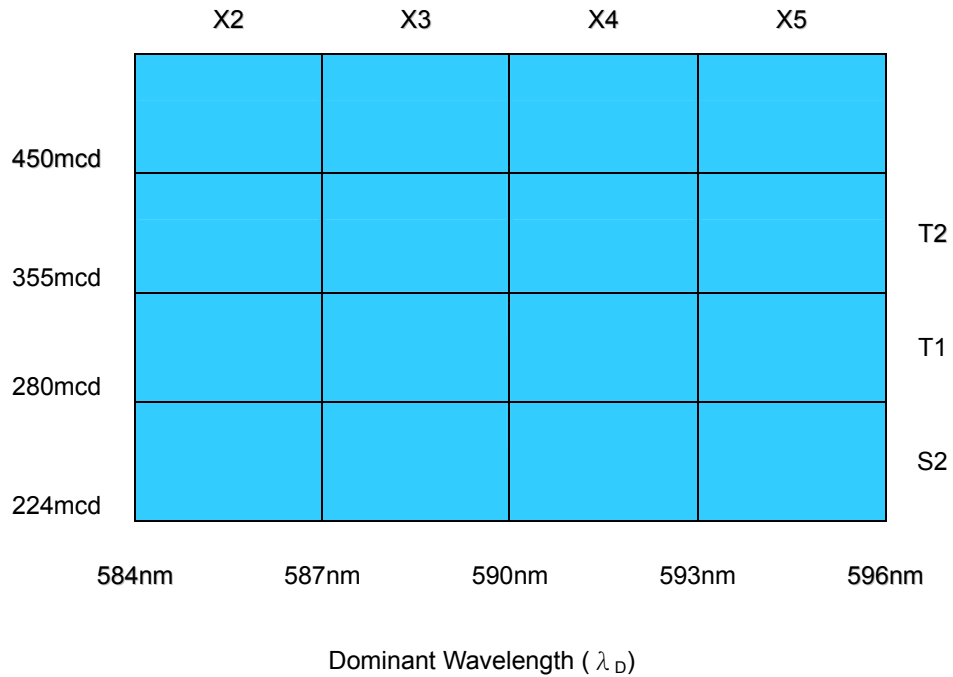
**Standard bins for LS1-TYL1-01-MT (I<sub>F</sub> = 20mA):**

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

Orders for LS1-TYL1-01-MT may be filled with any or all bins contained as below.

All Luminous Intensity – I<sub>V</sub>, V<sub>F</sub> & Dominant Wavelength – λ<sub>D</sub> values shown and specified are at I<sub>f</sub>=20mA.

\* **S2+**



\*S2+ indicates Luminous Intensity is at S2 bin or above.

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

Rank	V2	V3	V4	V5
Voltage	1.8-2.0V	2.0-2.2V	2.2-2.4V	2.4-2.6V

**#The quantity not enough for full reel**

VF(V)	1.8-2.2	2.2-2.6
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**Important Notes:**

- 1) All ranks will be included per delivery, rank ratio will be determined by Cotco.
  - 2) Tolerance of measurement of luminous intensity is ±10%
  - 3) Tolerance of measurement of dominant wavelength is ±1nm.
  - 4) Tolerance of measurement of Vf is ±0.05 V.
  - 5) Packaging methods are available for selection, please refer to PACKAGING STANDARD.
- #The notice is only apply quantity not enough for full reel.
- 6) Please refer to LED LAMP RELIABILITY TEST STANDARD for reliability test conditions.

## Graphs

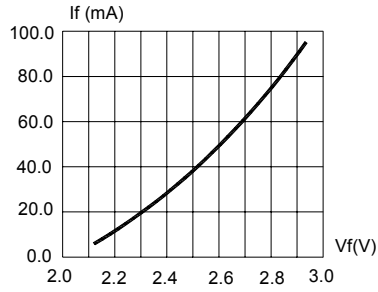


FIG.1 FORWARD CURRENT VS. FORWARD VOLTAGE.

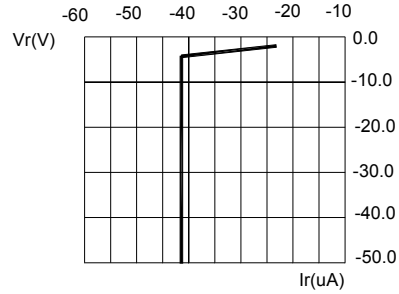


FIG.2 REVERSE CURRENT VS. REVERSE VOLTAGE.

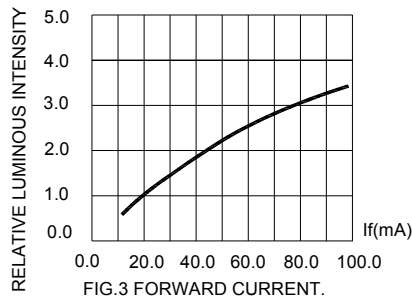


FIG.3 FORWARD CURRENT.

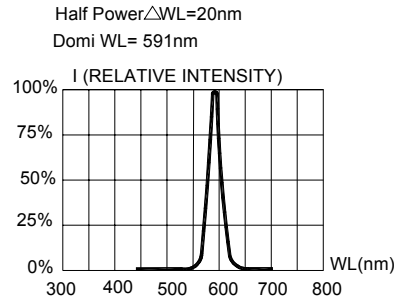


FIG.4 RELATIVE INTENSITY VS. WAVE LENGTH.

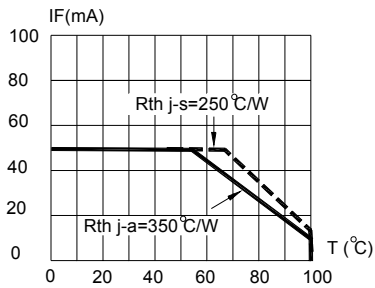


FIG.5 MAXIMUM FORWARD DC CURRENT VS TEMPERATURE. DERATING BASED ON  $T_{jmax}=110^{\circ}\text{C}$

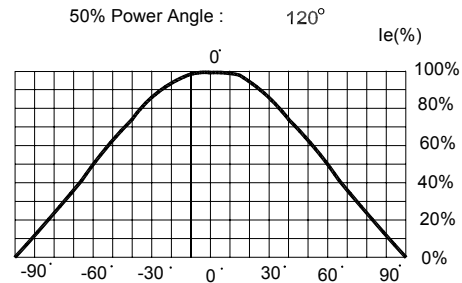


FIG.6 SPATIAL DISTRIBUTION.

Rth test condition: Mounted on PC Board FR 4 (pad size  $\geq 16\text{mm}^2$ )

Items	Signatures	Date	Revision History	
Prepared by	Meiliping	2004/11/11	DOC. No.	CHANGE DESCRIPTION
Checked by	TangShR	2004/11/11	02 03Nov04	Change Dimension Drawing, IV Rank&form, max current from 50 to 20, PD from 150 to 55, Graphs; cancel $R_{th,j-s}$
Approved by	Thomson	2004/11/11	03 11Nov04	Change max current from 20 to 50, PD from 55 to 130; Change Graphs: FIG5.
ECN#	ECN-H20040299			

Data is subject to change without prior notice.

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Obsoletes Doc: 02 03Nov04