



# LED Display Product Data Sheet LTS-10304JD

Spec No.: DS3-2001-297

Effective Date: 10/03/2008

Revision: A

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

# **LITEON** LITE-ON TECHNOLOGY CORPORATION

Property of Lite-On Only

## **LED DISPLAY**

### **LTS-10304JD DATASHEET**

<b><u>Rev</u></b>	<b><u>Description</u></b>	<b><u>By</u></b>
<b>01</b>	<b>ORIGINAL (Refer to contour drawing Revision (-))</b>	<b><u>Tina Chen</u> <u>10/04/2002</u></b>
<b><u>Above data for PD and Customer tracking only</u></b>		
<b>-</b>	<b>NPPR Received and Upload on OPNC</b>	<b><u>Tina Chen</u> <u>10/04/2002</u></b>
<b>A</b>	<b>UPDATE DS.</b>	<b><u>KITTISAK B.</u> <u>SEP 01/2008</u></b>

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PART NO.: LTS-10304JD

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## **FEATURES**

- \* 1.0 inch (25.4 mm) DIGIT HEIGHT.
- \* CONTINUOUS UNIFORM SEGMENTS.
- \* LOW POWER REQUIREMENT.
- \* EXCELLENT CHARACTERS APPEARANCE.
- \* HIGH BRIGHTNESS & HIGH CONTRAST.
- \* WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.
- \* **LEAD-FREE PACKAGE (ACCORDING TO ROHS)**

## **DESCRIPTION**

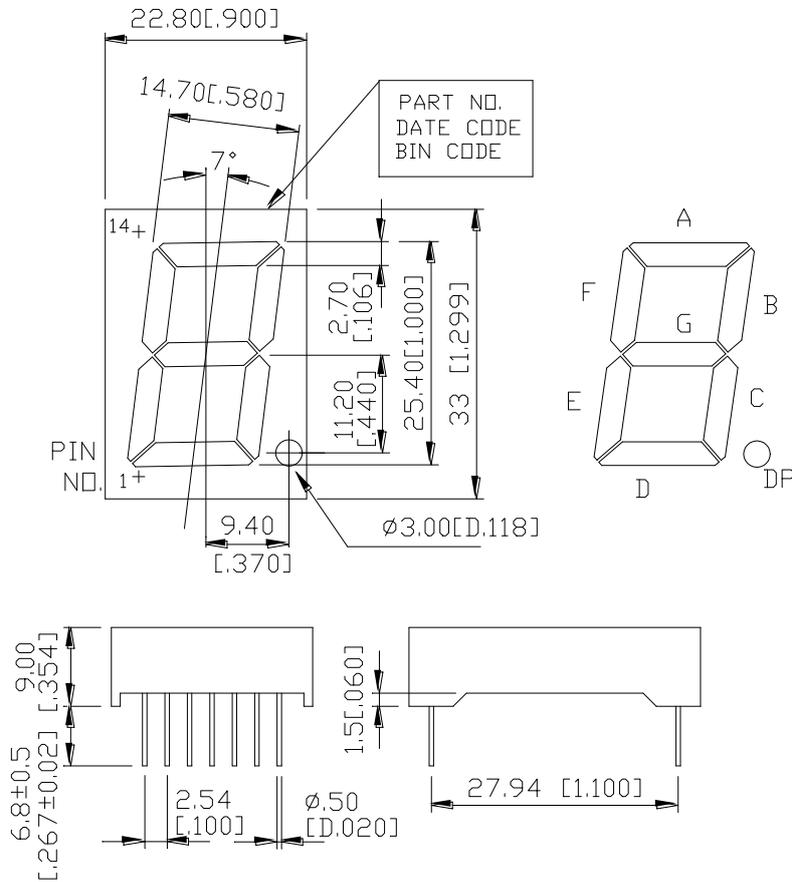
The LTS-10304JD is a 1.0-inch (25.4-mm) digit height single digit low current seven-segment display. This device uses AllnGaP HYPER RED LED chips (AllnGaP epi on GaAs substrate), and has a black face and white segments.

This low current seven-segment display is designed to perform under low power consumption. It is tested and selected for its excellent low current characteristics. It can be driven in low current condition and the segments are matched. This driving current as low as 1mA per segment is applicable.

## **DEVICE**

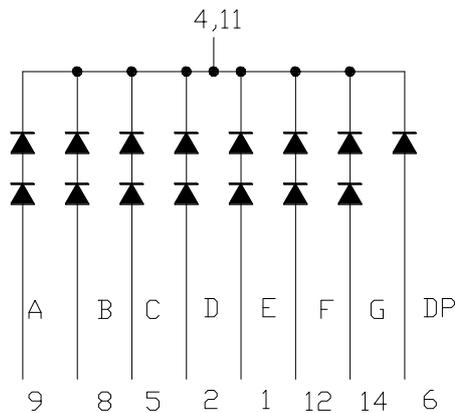
<b>PART NO.</b>	<b>DESCRIPTION</b>
AllnGaP Hyper RED	COMMON CATHODE
LTS-10304JD	RT. HAND DECIMAL

## PACKAGE DIMENSIONS



- NOTES: 1. All dimensions are in millimeters. Tolerances are  $\pm 0.25$  mm (0.01") unless otherwise noted.  
 2. Pin tip's shift tolerance is  $\pm 0.4$  mm.

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

<b>No.</b>	<b>CONNECTION</b>
1	ANODE E
2	ANODE D
3	NO PIN
4	COMMON CATHODE
5	ANODE C
6	ANODE D.P.
7	NO PIN
8	ANODE B
9	ANODE A
10	NO PIN
11	COMMON CATHODE
12	ANODE F
13	NO PIN
14	ANODE G

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## ABSOLUTE MAXIMUM RATING AT Ta=25°C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	134(70)	mW
Peak Forward Current Per Segment ( 1/10 Duty Cycle, 0.1ms Pulse Width )	90	mA
Continuous Forward Current Per Segment Derating Linear From 25°C Per Segment	24(25) 0.28	mA mA/°C
Reverse Voltage Per Segment	10(5)	V
Operating Temperature Range	-35°C to +105°C	
Storage Temperature Range	-35°C to +105°C	

Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane.  
or temperature of unit (during assembly) not over max. temperature rating above

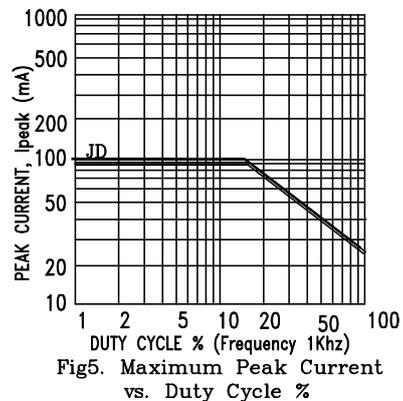
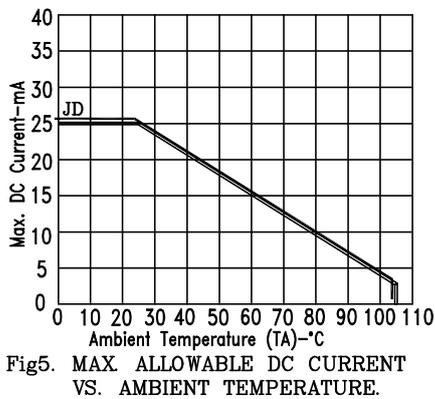
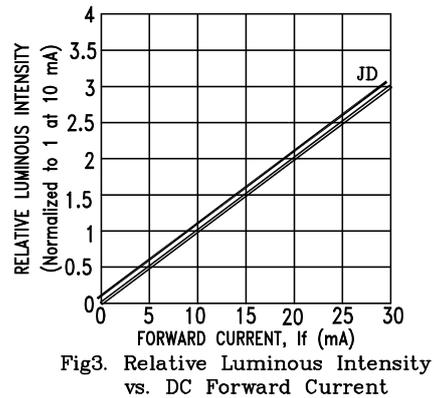
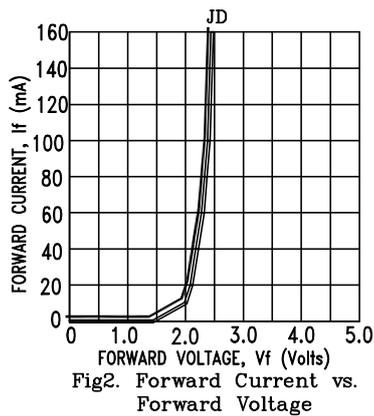
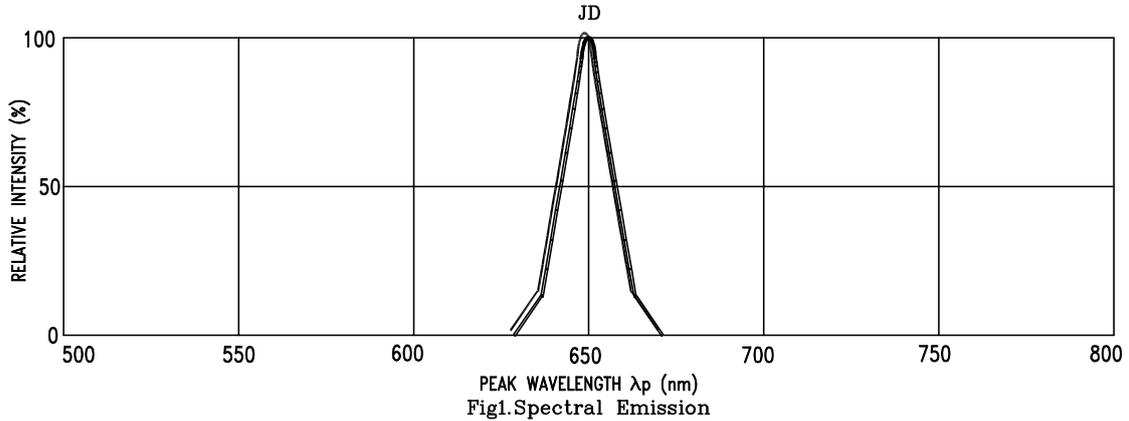
## ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	410	2200		μcd	I <sub>F</sub> =1mA
Peak Emission Wavelength	λ <sub>p</sub>		650		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		20		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		639		nm	I <sub>F</sub> =20mA
Forward Voltage Per Segment	V <sub>F</sub>		4.2 (2.1)	5.2 (2.6)	V	I <sub>F</sub> =20mA
Reverse Current Per Segment	I <sub>R</sub>			100	μA	V <sub>R</sub> =10V(5V)
Luminous Intensity Matching Ratio	I <sub>v-m</sub>			2:1		I <sub>F</sub> =1mA

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : JD=AlInGaP HYPER RED