



# **LED Display**

## **Product Data Sheet**

### **LTS-10804JD-04J**

Spec No.: DS30-2010-0203

Effective Date: 09/16/2010

Revision: -

**LITE-ON DCC**

**RELEASE**

**BNS-OD-FC001/A4**

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**LED DISPLAY****LTS-10804JD-04J**  
**DATA SHEET**

<b><u>Item</u></b>	<b><u>Description</u></b>	<b><u>By</u></b>	<b><u>DATE</u></b>
1	New Spec	James Chen	2009/09/24
2	Add Digit Dimensions and Description	Eason Lin	2009/09/24
3	Add bin table	James	2009/09/24
4	Add Cross Section & Material List	Richard	2009/12/11
5	Add ESD spec.	James	2/12-2010
6	Add Through Prohibition	james	8/12-2010

**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**

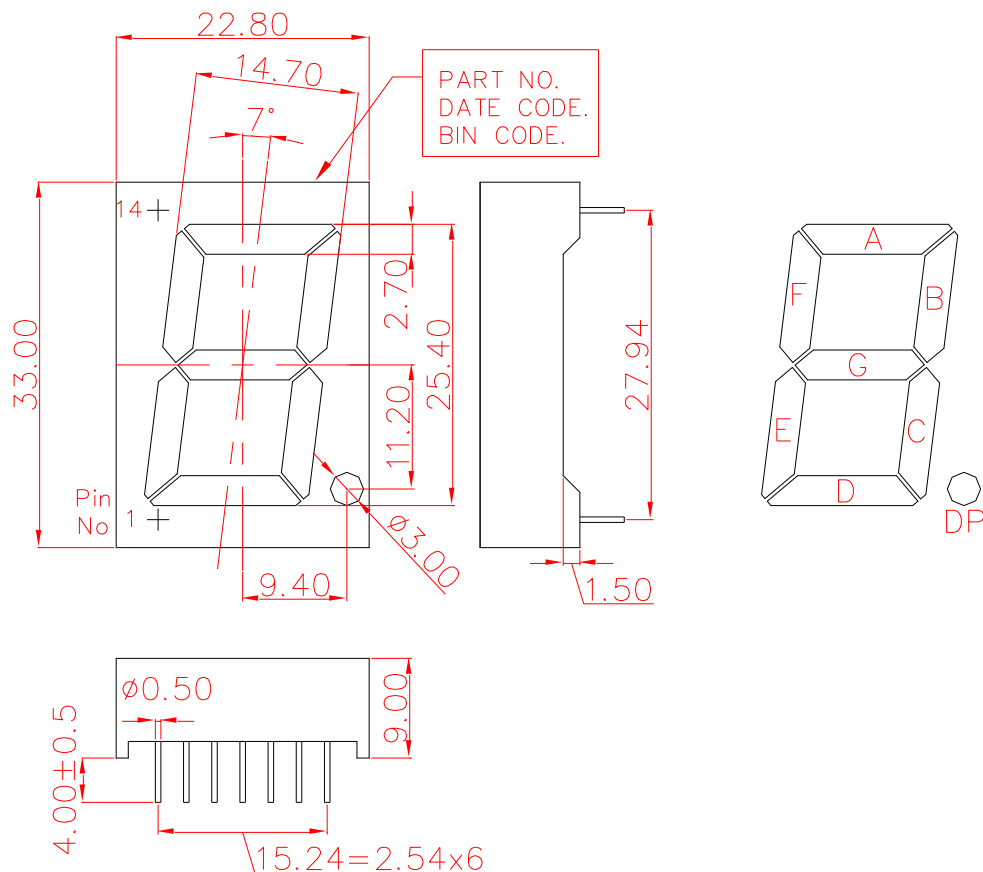
**DESCRIPTION**

The LTS-10804JD-04J is a 1.0 inch (25.4 mm) digit height single digit low current seven-segment display. This device uses AlInGaP Hyper Red LED chips (AlInGaP epi on GaAs substrate). The display has gray face and white segments.

**DEVICE**

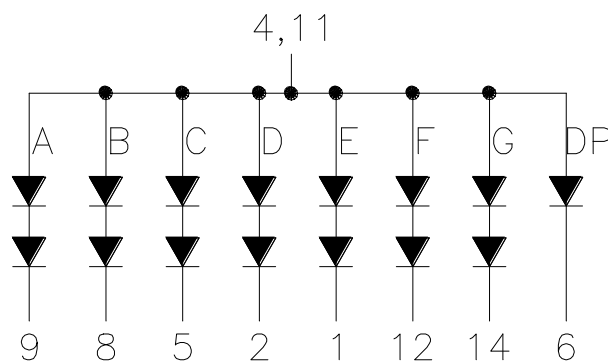
PART NO.	DESCRIPTION
AlInGaP Hyper RED	COMMON ANODE RT. HAND DECIMAL
LTS-10804JD-04J	

## 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  
 3. Through Prohibition

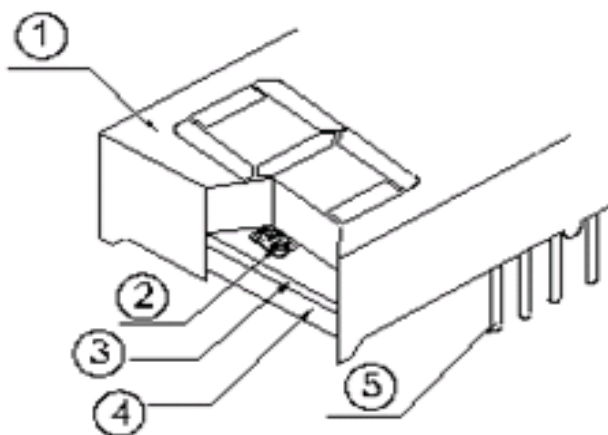
## INTERNAL CIRCUIT DIAGRAM



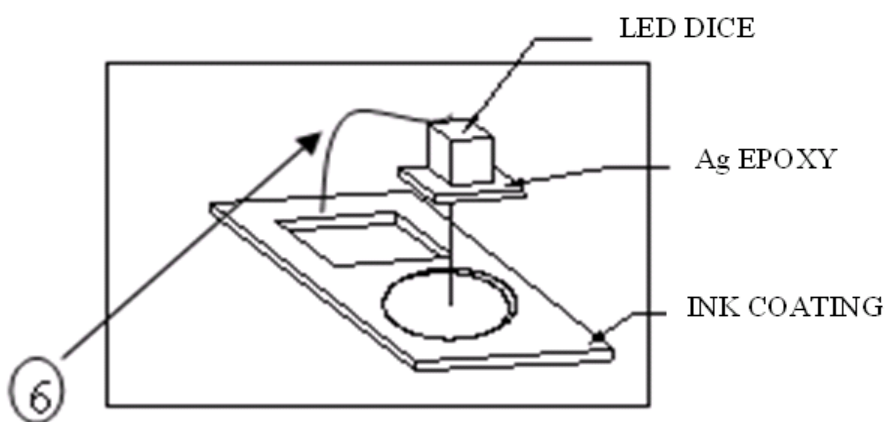
**PIN CONNECTION**

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

## Cross Section & Material List



1. Ag CONDUCTIVE EPOXY USING  
2. ON THE PCB, COATING A LAYER OF INK  
FOR CONTROLLING THE Ag EPOXY SCOPE



No.	Items	Material	CRITICAL POINT (SC)
1	Reflector	Polycarbonate PCM-910G2N	N/A
2	LED chip	AlInGaP RED	N/A
3	PCB	CEM-3 + Glass + Fiber	N/A
4	Epoxy	Resin	N/A
5	Round pin	Cu + Fe + Sn	N/A
6	Wire Bonding	Al	SC FOR WIRE PULL TEST AND BOND SIZE

**ABSOLUTE MAXIMUM RATING**

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	70	mW
Peak Forward Current Per Segment (Frequency 1Khz, 10% duty cycle )	90	mA
Continuous Forward Current Per Segment	25	mA
Forward Current Derating from 25 <sup>0</sup> C	0.33	mA/°C
Operating Temperature Range	-35°C to +105°C	
Storage Temperature Range	-35°C to +105°C	
Soldering Conditions : 1/16 inch below seating plane for 4 seconds at 260 <sup>0</sup> C		

**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25<sup>0</sup>C**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	2000	3300		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>		2.1	2.6	V	I <sub>F</sub> =10mA
Reverse Current Per Segment(2)	I <sub>R</sub>			100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio (Same Light Area)	I <sub>v</sub> -m			2:1		I <sub>F</sub> =1mA

Note:

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.
2. Reverse voltage is only for IR test. It can not continue to operate at this situation.

**ESD (Electrostatic Discharge)**

Static Electricity or power surge will damage the LED.

Suggestions to prevent ESD damage:

- Use of a conductive wrist band or anti-electrostatic glove when handling these LEDs.
- All devices, equipment, and machinery must be properly grounded.
- Work tables, storage racks, etc. should be properly grounded.
- Use ion blower to neutralize the static charge which might have built up on surface of the LED's plastic for N/D as a result of friction between LEDs during storage and handling.

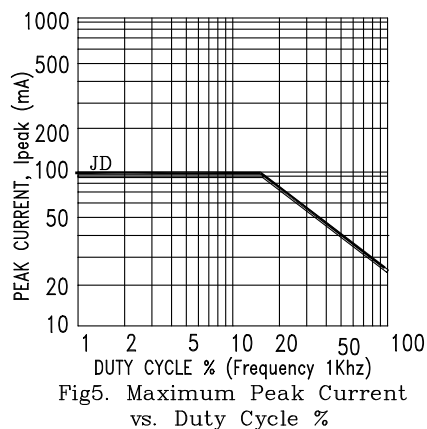
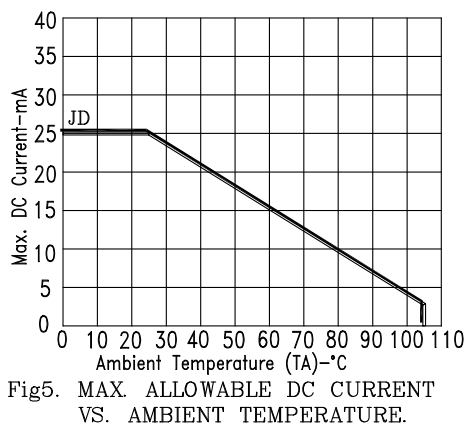
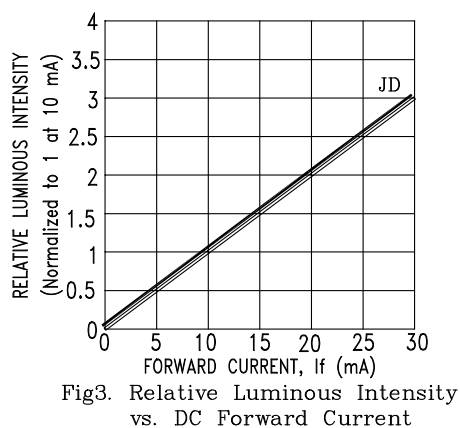
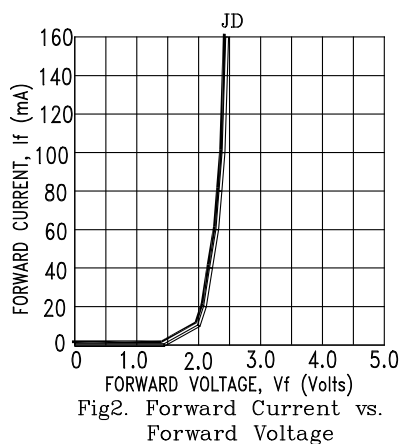
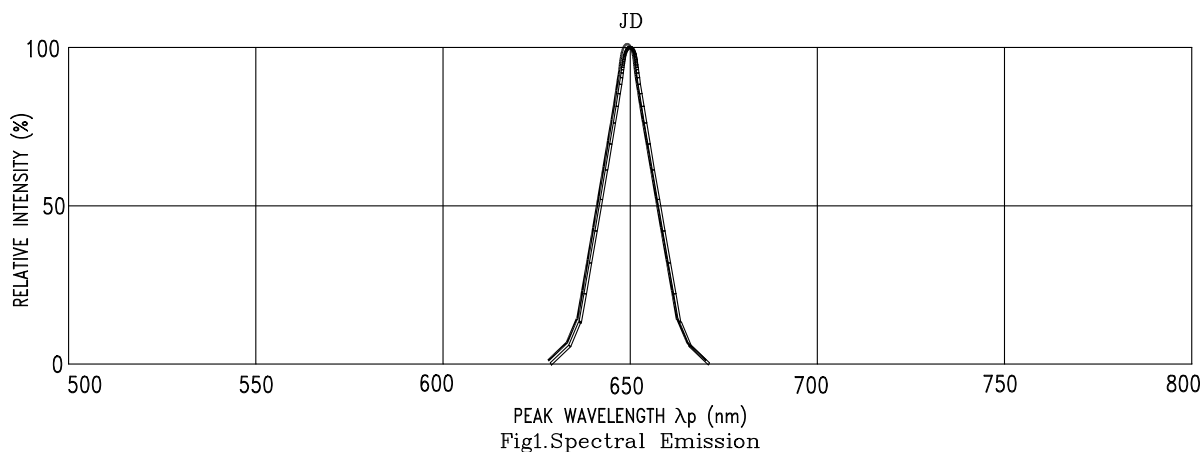
**LUMINOUS INTENSITY BIN SELECTIONS : IF=1mA (Unit : ucd)**

<b>Rank</b>	<b>Min.</b>	<b>Max.</b>
<b>E</b>	<b>2000</b>	<b>3200</b>
<b>F</b>	<b>3201</b>	<b>5000</b>
<b>G</b>	<b>5001</b>	<b>8000</b>



## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

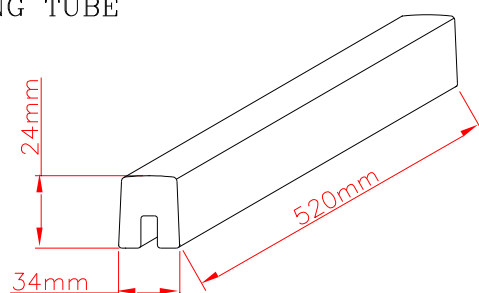
(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : JD=AlInGaP HYPER RED

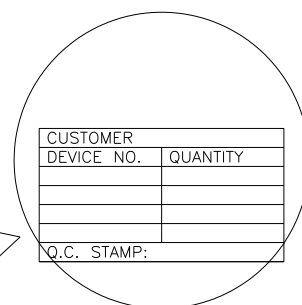
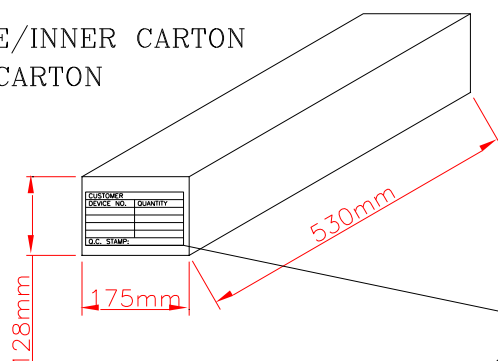
## THE PACKING SPEC.

22 PCS/PACKING TUBE



21 PACKING TUBE/INNER CARTON

462 PCS/INNER CARTON



4 INNER CARTON/OUTER CARTON

1848 PCS/OUTER CARTON

