



LED Display
Product Data Sheet
LTD-322KD-31

Spec No. :DS30-2012-0001
Effective Date: 07/05/2017
Revision: E

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

**LED DISPLAY
LTD-322KD-31**

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<u>Rev</u>	<u>Description</u>	<u>By</u>	<u>Date</u>
01	Preliminary Spec.	Eason Lin	11/29/2011
02	2.1 Change Pin length from 6.2 mm to 3.5 mm. 2.2 Add appearance judgment criteria and suggest PCB hole for assembly	Eason Lin	01/13/2012
Above data for PD and Customer tracking only			
-	NPPR Received and Upload on System	Reo Lin	02/04/2012
A	Update system document	Valerie Yang	02/21/2012
B	Revised length and width tolerance from 0.25 mm to 0.4mm	Reo Lin	02/24/2012
C	Revised error for INTERNAL CIRCUIT DIAGRAM in Page 5	Reo Lin	05/09/2012
D	Add Picture in page 4	Reo Lin	09/12/2012
E	Add Bin code in page 7	Reo Lin	07/04/2017

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1. Description

The LTD-322KD-31 is a 0.3 inch (7.62 mm) digit height dual digit seven-segment display. This device utilizes AllnGaP Hyper Red LED chips, which are made from AllnGaP on a non-transparent GaAs substrate, and has a black face and white segments. This display is built by special reflector material that can pass high-temperature soldering condition. Four sides are painted black with black ink, and one side is painted black by black pen.

1.1 Features

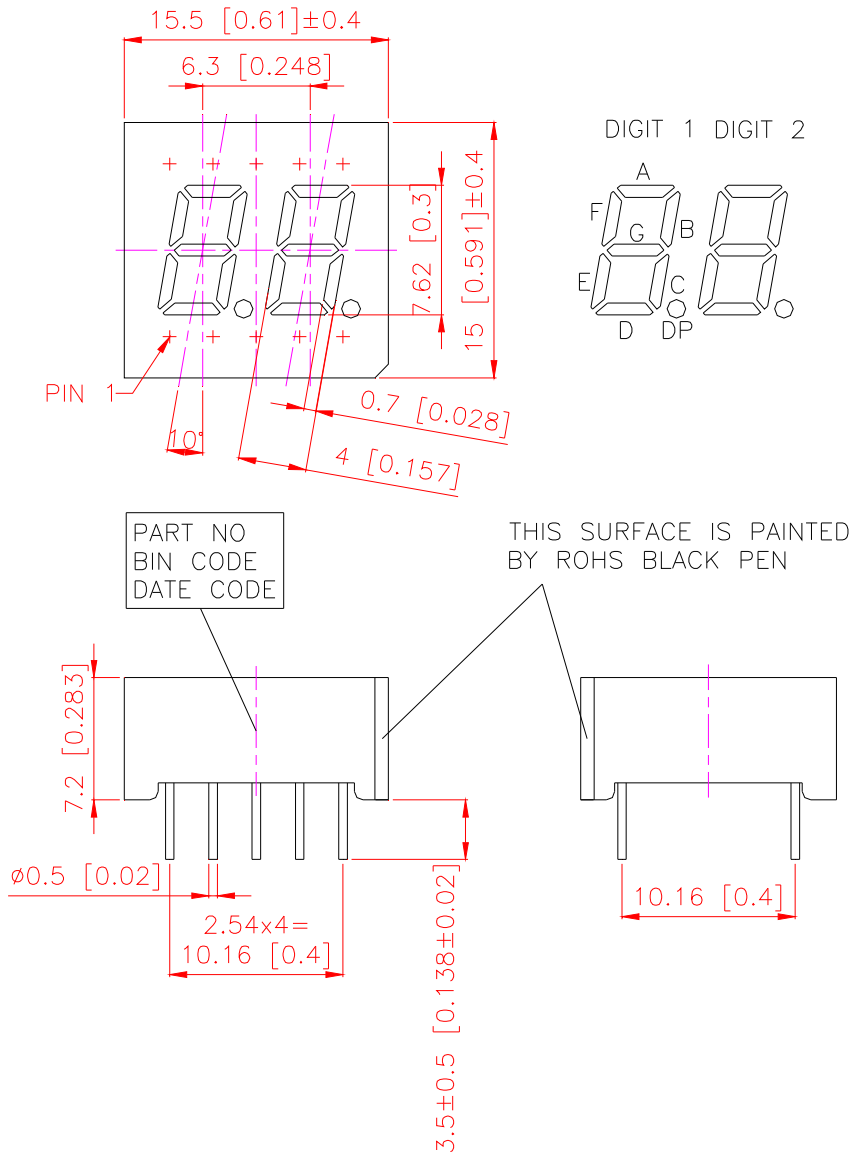
- 0.3 inch (7.62 mm) DIGIT HEIGHT
- CONTINUOUS UNIFORM SEGMENTS
- LOW POWER REQUIREMENT
- EXCELLENT CHARACTERS APPEARANCE
- HIGH BRIGHTNESS & HIGH CONTRAST
- WIDE VIEWING ANGLE
- SOLID STATE RELIABILITY
- CATEGORIZED FOR LUMINOUS INTENSITY.
- LEAD-FREE PACKAGE (ACCORDING TO ROHS)

1.2 Device

Part No	Description
AllnGaP Hyper Red	Duplex Common Cathode
LTD-322KD-31	Rt. Hand Decimal

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2. Package Dimensions

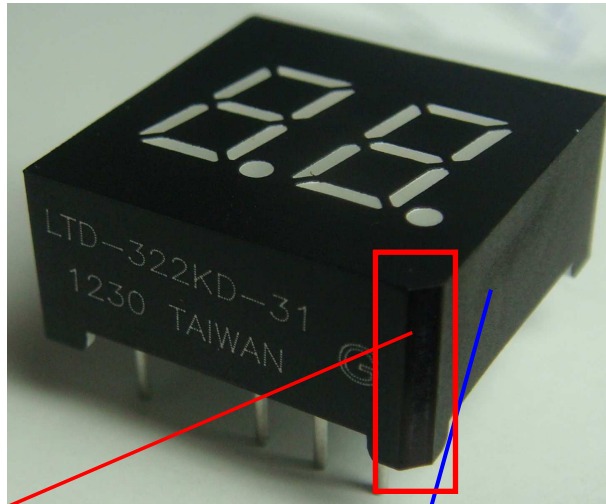


Notes :

1. All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01") unless otherwise noted
2. Pin tip's shift tolerance is ± 0.4 mm
3. Foreign material on segment ≤ 10 mil
4. Ink contamination (surface) ≤ 20 mil
5. Bubble in segment ≤ 10 mil
6. Bending $\leq 1\%$ of reflector length
7. Recommend the best PCB hole: Diameter 1.0 mm

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3. Picture

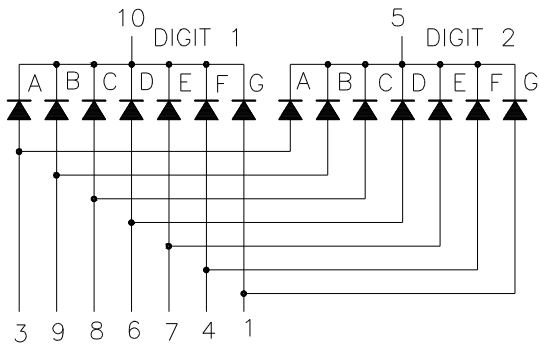
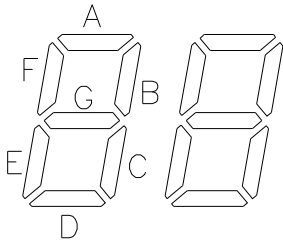


Here is painted by black pen. So, the color of this side has different from top surface and other four sides.

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4. Internal Circuit Diagram

DIGIT 1 DIGIT 2



5. Pin Connection

No	Connection
1	ANODE G
2	NO PIN
3	ANODE A
4	ANODE F
5	COMMON CATHODE DIGIT2
6	ANODE D
7	ANODE E
8	ANODE C
9	ANODE B
10	COMMON CATHODE DIGIT1

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6. Rating and Characteristics

6.1. Absolute Maximum Rating at Ta=25°C

Parameter	Maximum Rating	Unit
Power Dissipation Per Segment	70	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	90	mA
Continuous Forward Current Per Segment	25	mA
Derating Linear From 25°C Per Segment	0.33	mA/°C
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	

Solder Conditions:1/16 inch below seating plane for 5 seconds at 265±5°C
Or temperature of unit (during assembly) not above max. temperature above rating.

6.2. Electrical / Optical Characteristics at Ta=25°C

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Test Condition
Average Luminous Intensity Per Segment	IV	320	900		μcd	IF=1mA
			11700		μcd	IF=10mA
Peak Emission Wavelength	λp		650		nm	IF=20mA
Spectral Line Half-Width	Δλ		20		nm	IF=20mA
Dominant Wavelength	λd		639		nm	IF=20mA
Forward Voltage Per Chip	VF		2.1	2.6	V	IF=20mA
Reverse Current Per Segment ^(*)	IR			100	μA	VR=5V
Luminous Intensity Matching Ratio (Similar Light Area)	IV-m			2:1		IF=1mA

Notes :

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission International De L'Eclairage) eye-response curve
- Reverse voltage is only for IR test. It cannot continue to operate at this situation
- Cross talk specification ≤ 2.5%

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6.3. Bin Range Distribution

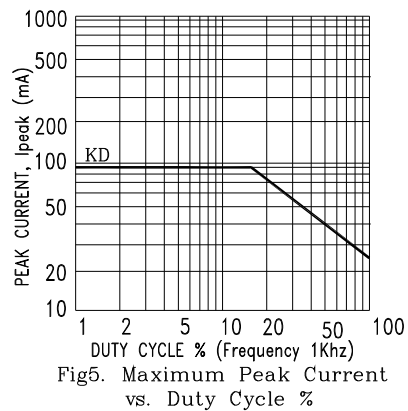
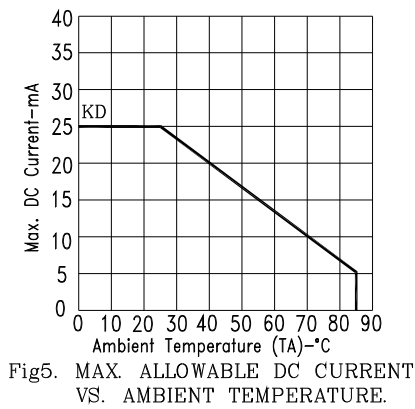
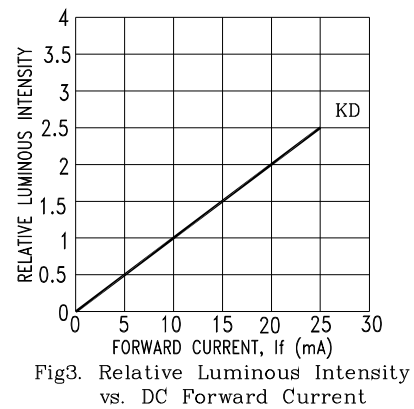
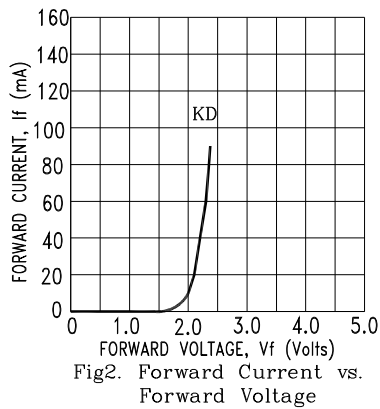
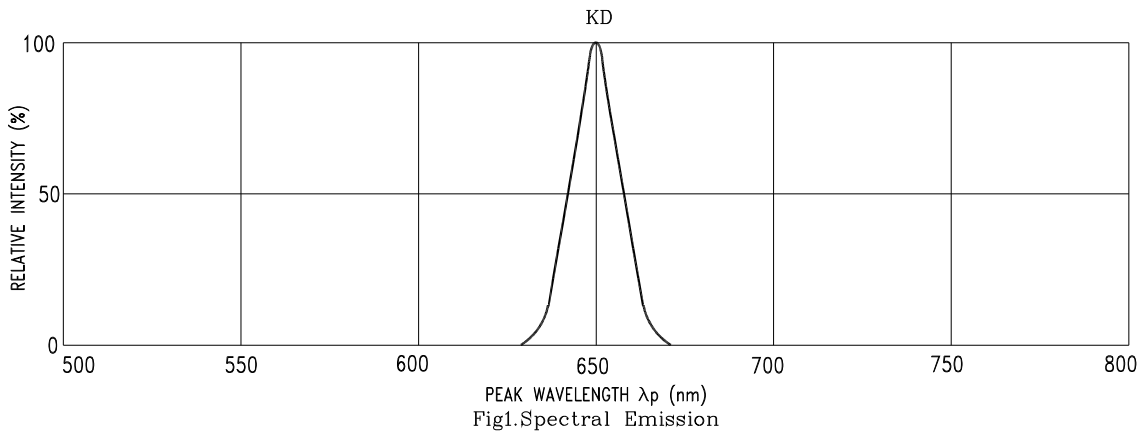
Bin	F	G	H	J	K
Min.	321	501	801	1301	2101
Max.	500	800	1300	2100	3400

Tolerance on each Luminous Intensity bin is +/- 15%.

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6.4. Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : KD=AlInGaP HYPER RED