



# **LED Display**

## **Product Data Sheet**

### **LTP-757KD-NBJ**

Spec No.: DS30-2006-014

Effective Date: 01/31/2006

Revision: -

**LITE-ON DCC**

**RELEASE**

**BNS-OD-FC001/A4**

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**FEATURES**

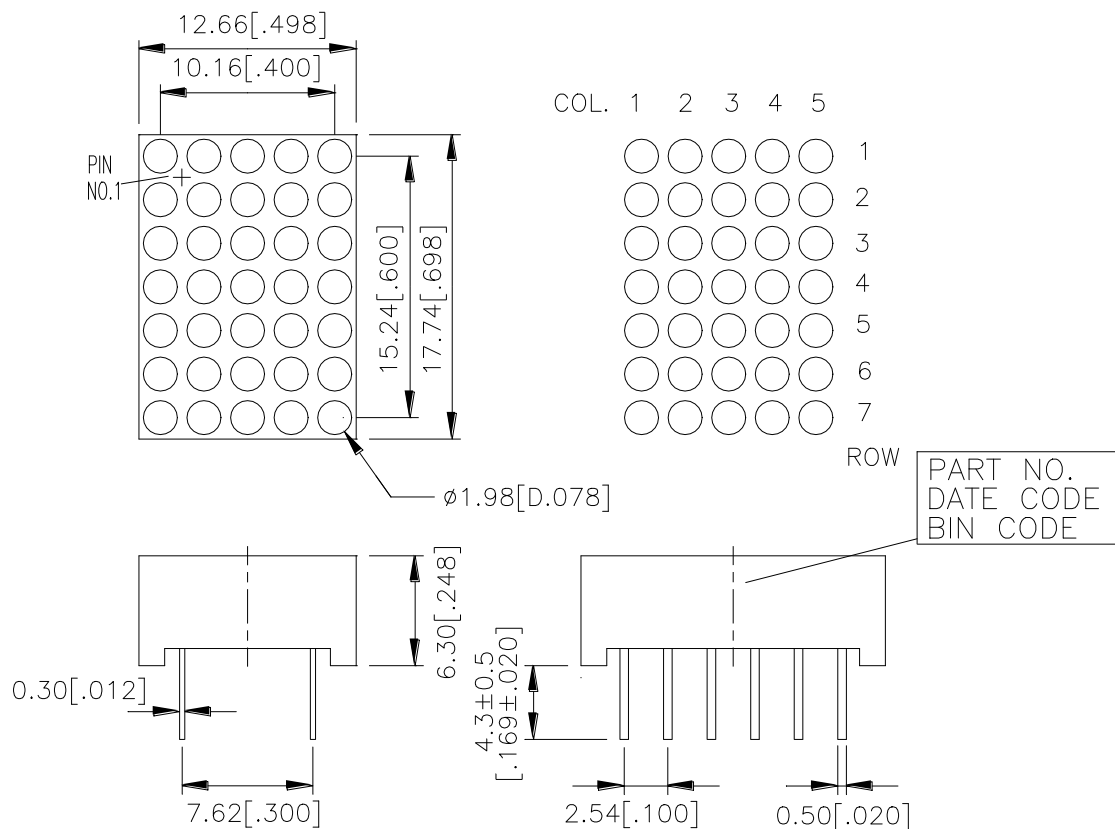
- \* 0.7 inch (17.22mm) DIGIT HEIGHT
- \* CONTINUOUS UNIFORM SEGMENTS
- \* LOW POWER REQUIREMENT
- \* EXCELLENT CHARACTERS APPEARANCE
- \* HIGH BRIGHTNESS & HIGH CONTRAST
- \* WIDE VIEWING ANGLE
- \* SOLID STATE RELIABILITY
- \* CATEGORIZED FOR LUMINOUS INTENSITY
- \* **LEAD-FREE PACKAGE**

**DESCRIPTION**

The LTP-757KD-NBJ is a 0.7inch (17.22mm) matrix height 5 x 7 dot matrix display. This device uses AlInGaP Hyper Red LED chips (AlInGaP epi on GaAs substrate). The display has black face and white dots.

**DEVICE**

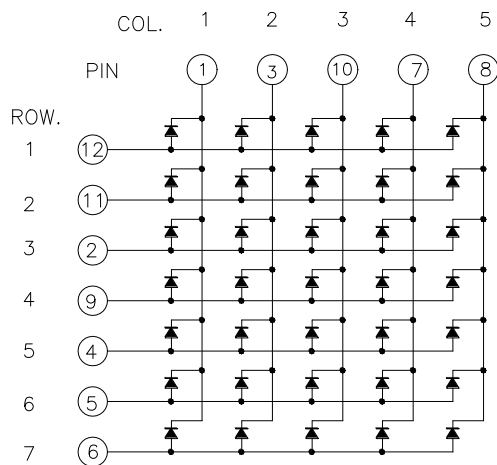
| PART NO.          | DESCRIPTION                 |
|-------------------|-----------------------------|
| AlInGaP Hyper Red | Cathode Column<br>Anode Row |
| LTP-757KD-NBJ     |                             |

**PACKAGE DIMENSIONS**


NOTES: 1. All dimensions are in millimeters. Tolerances are  $\pm 0.25\text{-mm}$  (0.01") unless otherwise noted.

2. Pin tip's shift tolerance is  $\pm 0.4\text{mm}$ .

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| <b>No.</b> | <b>CONNECTION</b> |
|------------|-------------------|
| 1          | CATHODE COLUMN 1  |
| 2          | ANODE ROW 3       |
| 3          | CATHODE COLUMN 2  |
| 4          | ANODE ROW 5       |
| 5          | ANODE ROW 6       |
| 6          | ANODE ROW 7       |
| 7          | CATHODE COLUMN 4  |
| 8          | CATHODE COLUMN 5  |
| 9          | ANODE ROW 4       |
| 10         | CATHODE COLUMN 3  |
| 11         | ANODE ROW 2       |
| 12         | ANODE ROW 1       |

**ABSOLUTE MAXIMUM RATING**

| PARAMETER                                                                                                                                                                | MAXIMUM RATING                           | UNIT               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|--------------------|
| Average Power Dissipation Per dot                                                                                                                                        | 35                                       | mW                 |
| Peak Forward Current Per dot                                                                                                                                             | 90                                       | mA                 |
| Average Forward Current Per dot                                                                                                                                          | 13                                       | mA                 |
| Derating Linear From 25 <sup>0</sup> C Per dot                                                                                                                           | 0.17                                     | mA/ <sup>0</sup> C |
| Reverse Voltage Per dot                                                                                                                                                  | 5                                        | V                  |
| Operating Temperature Range                                                                                                                                              | -35 <sup>0</sup> C to +85 <sup>0</sup> C |                    |
| Storage Temperature Range                                                                                                                                                | -35 <sup>0</sup> C to +85 <sup>0</sup> C |                    |
| Soldering Conditions : 1/16 inch below seating plane for 3 seconds at 260 <sup>0</sup> C or temperature of unit (during assembly) not over max. temperature rating above |                                          |                    |

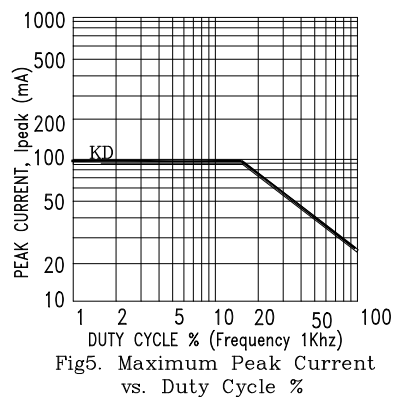
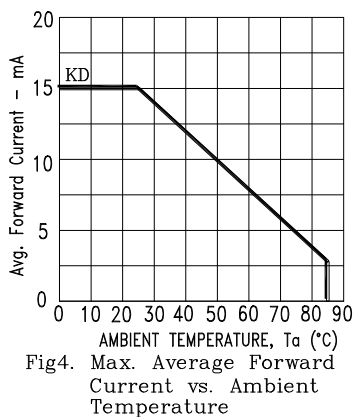
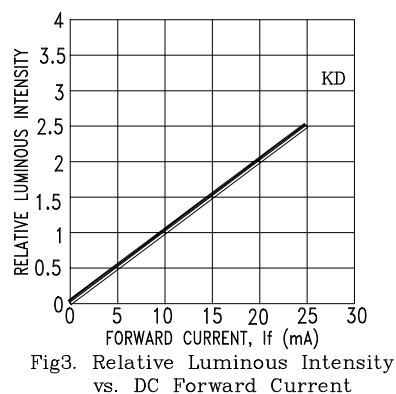
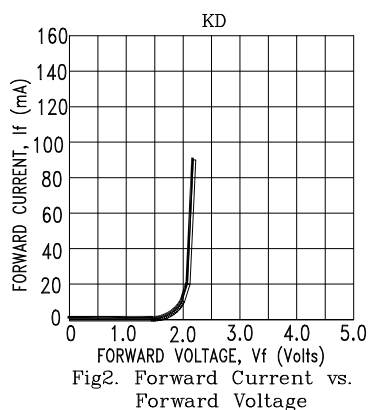
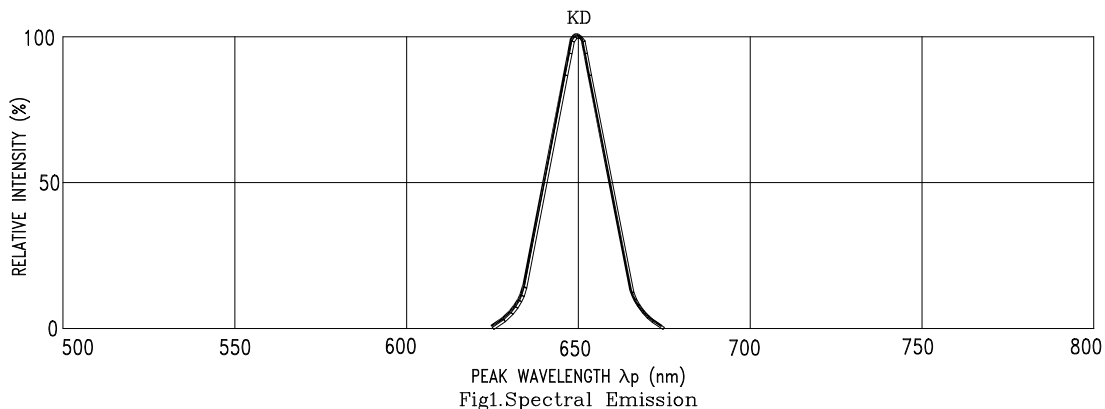
**ELECTRICAL / OPTICAL CHARACTERISTICS AT T<sub>A</sub>=25<sup>0</sup>C**

| PARAMETER                                              | SYMBOL           | MIN. | TYP. | MAX. | UNIT | TEST CONDITION                  |
|--------------------------------------------------------|------------------|------|------|------|------|---------------------------------|
| Average Luminous Intensity                             | I <sub>v</sub>   | 630  | 1732 |      | μcd  | I <sub>P</sub> =32mA , 1/16Duty |
| 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 dot                                | V <sub>F</sub>   |      | 2.0  | 2.6  | V    | I <sub>F</sub> =20mA            |
| Reverse Current Per dot                                | I <sub>R</sub>   |      |      | 100  | μA   | V <sub>R</sub> =5V              |
| Luminous Intensity Matching Ratio (Similar Light Area) | I <sub>v-m</sub> |      |      | 2:1  |      | I <sub>P</sub> =32mA , 1/16Duty |

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 : KD=AlInGaP HYPER RED