



# **LED Display**

## **Product Data Sheet**

### **LTD-5023AJD**

Spec No.: DS30-2001-208

Effective Date: 09/17/2005

Revision: A

**LITE-ON DCC**

**RELEASE**

## FEATURES

- \* 0.56 inch (14.22 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 LTD-5023AJD is a 0.56 inch (14.22 mm) height digit display. This device uses AlInGaP Hyper Red LED chips (AlInGaP epi on GaAs substrate). The display has a light gray face and white segments.

## DEVICE

| PART NO.          | DESCRIPTION                        |
|-------------------|------------------------------------|
| AlInGaP Hyper Red | Common Cathode<br>Rt. Hand Decimal |
| LTD-5023AJD       |                                    |



**PIN CONNECTION**

| <b>No.</b> | <b>CONNECTION</b>        |
|------------|--------------------------|
| 1          | ANODE E (DIGIT 1)        |
| 2          | ANODE D (DIGIT 1)        |
| 3          | ANODE C (DIGIT 1)        |
| 4          | ANODE DP (DIGIT 1)       |
| 5          | ANODE E (DIGIT 2)        |
| 6          | ANODE D (DIGIT 2)        |
| 7          | ANODE G (DIGIT 2)        |
| 8          | ANODE C (DIGIT 2)        |
| 9          | ANODE DP (DIGIT 2)       |
| 10         | ANODE B (DIGIT 2)        |
| 11         | ANODE A (DIGIT 2)        |
| 12         | ANODE F (DIGIT 2)        |
| 13         | COMMON CATHODE (DIGIT 2) |
| 14         | COMMON CATHODE (DIGIT 1) |
| 15         | ANODE B (DIGIT 1)        |
| 16         | ANODE A (DIGIT 1)        |
| 17         | ANODE G (DIGIT 1)        |
| 18         | ANODE F (DIGIT 1)        |

**ABSOLUTE MAXIMUM RATING**

| PARAMETER                                                                          | MAXIMUM RATING | UNIT  |
|------------------------------------------------------------------------------------|----------------|-------|
| Power Dissipation Per Segment                                                      | 70             | mW    |
| Peak Forward Current Per Segment<br>(Frequency 1Khz, 10% duty cycle)               | 90             | mA    |
| Continuous Forward Current Per Segment                                             | 25             | mA    |
| Derating Linear From 25°C Per Segment                                              | 0.33           | mA/°C |
| Reverse Voltage Per Segment                                                        | 5              | V     |
| Operating Temperature Range                                                        | -35°C to +85°C |       |
| Storage Temperature Range                                                          | -35°C to +85°C |       |
| Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane. |                |       |

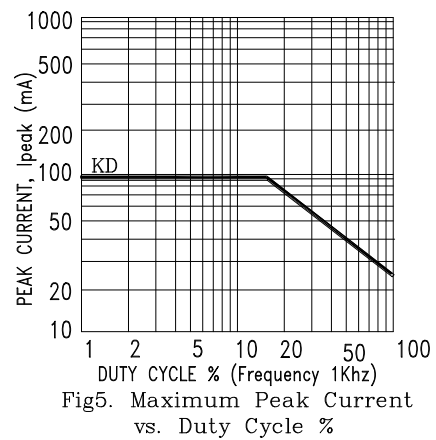
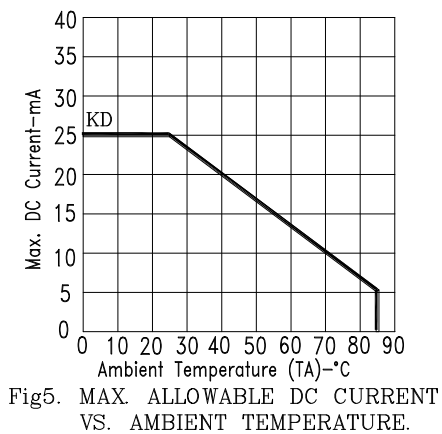
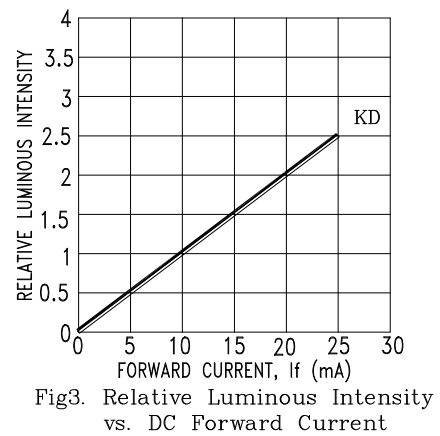
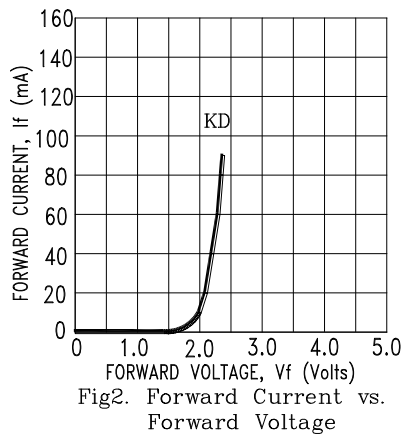
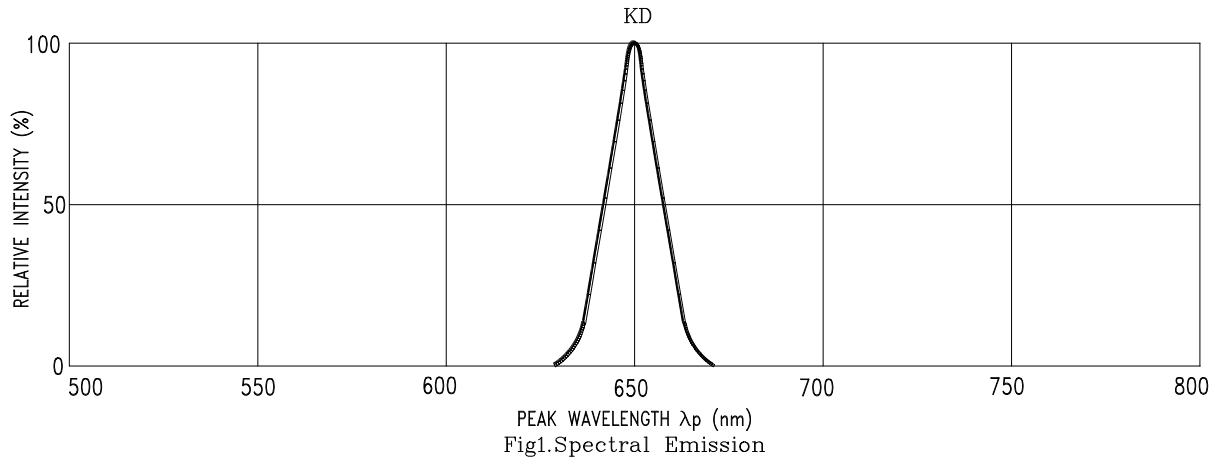
**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C**

| PARAMETER                         | SYMBOL            | MIN. | TYP.  | MAX. | UNIT | TEST CONDITION       |
|-----------------------------------|-------------------|------|-------|------|------|----------------------|
| Average Luminous Intensity        | I <sub>v</sub>    | 320  | 700   |      | μcd  | I <sub>F</sub> =1mA  |
|                                   |                   |      | 16250 |      |      | I <sub>F</sub> =10mA |
| 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> =20mA |
| Reverse Current Per Segment       | I <sub>R</sub>    |      |       | 100  | μA   | V <sub>R</sub> =5V   |
| Luminous Intensity Matching Ratio | I <sub>v</sub> -m |      |       | 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 : KD=AlInGaP HYPER RED