



# LED Display Product Data Sheet LTL-2301KR

Spec No.: DS30-2009-0141

Effective Date: 09/18/2012

Revision: A

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4



# LITE-ON TECHNOLOGY CORPORATION

Property of Lite-On Only

## LED DISPLAY

### LTL-2301KR DATA SHEET

| <u>item</u> | <u>Description</u> | <u>By</u>   | <u>DATE</u> |
|-------------|--------------------|-------------|-------------|
| 1           | new                | Lester Chen | 09/14/09    |
| 2           | Change pin length  | james       | 9/10/2012   |
|             |                    |             |             |
|             |                    |             |             |
|             |                    |             |             |
|             |                    |             |             |
|             |                    |             |             |
|             |                    |             |             |
|             |                    |             |             |

**FEATURES**

- \* 0.08-INCH DIAMETER DOT.
- \* LOW POWER REQUIREMENT.
- \* EXCELLENT CHARACTERS APPEARANCE.
- \* HIGH BRIGHTNESS & HIGH CONTRAST.
- \* WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* **LEAD-FREE PACKAGE**(ACCORDING TO ROHS)

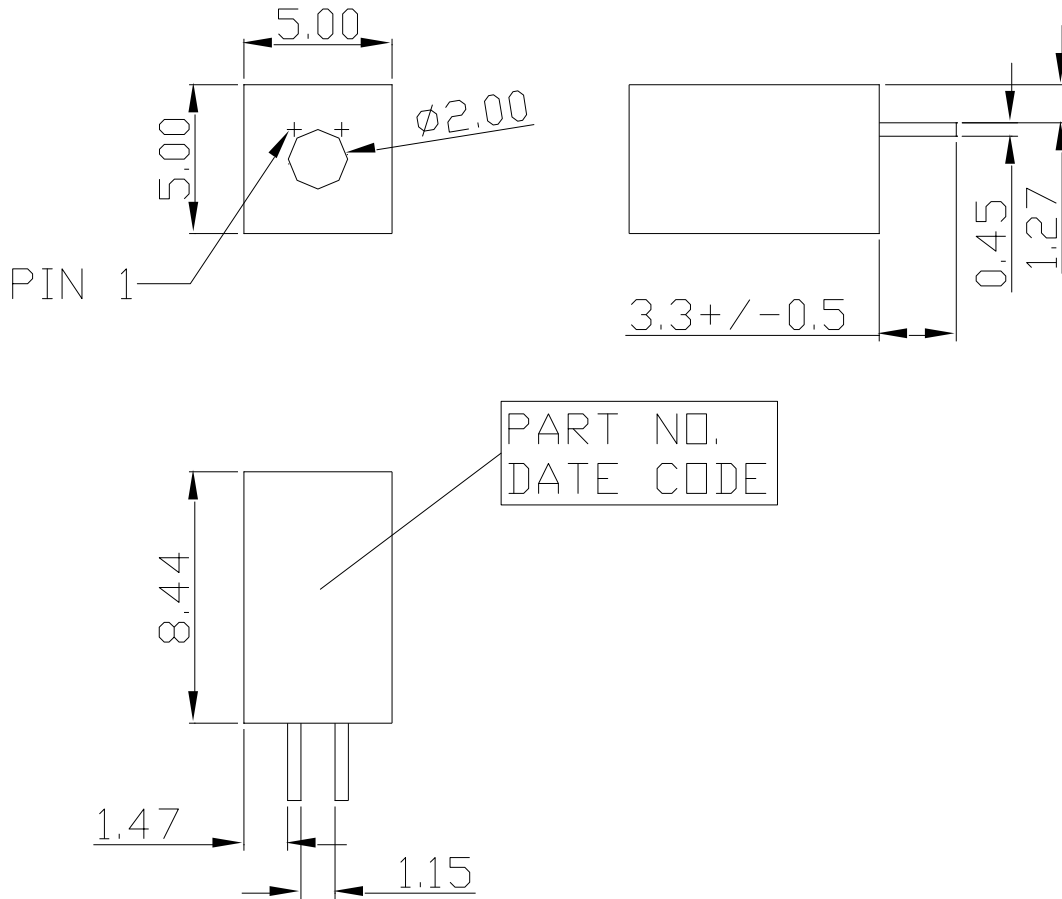
**DESCRIPTION**

The LTL-2301KR is a 0.08-inch diameter dot display. This device utilizes AlInGaP super red chip, which is made from AlInGaP on a non-transparent GaAs substrate. The device has black face and white segment.

**DEVICE**

| <b>PART NO.</b> | <b>DESCRIPTION</b>     |
|-----------------|------------------------|
| RED             | One anode, one cathode |
| LTL-2301KR      |                        |

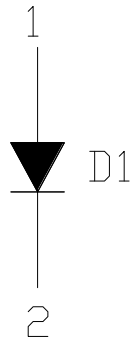
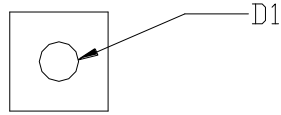
**PACKAGE DIMENSIONS**




**NOTE :**

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

**INTERNAL CIRCUIT DIAGRAM**



The sign  is standard super red chip ( $\lambda d=631\text{nm}$ ).

**PIN CONNECTION**

| No. | CONNECTION   |
|-----|--------------|
| 1   | ANODE (D1)   |
| 2   | CATHODE (D1) |

## ABSOLUTE MAXIMUM RATING AT Ta=25°C

| PARAMETER   | MAXIMUM RATING  | UNIT  |
|---|-----------------|-------|
| Power Dissipation Per Segment   | 70              | mW    |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle, 0.1ms Pulse Width )          | 90              | mA    |
| Continuous Forward Current Per Segment  | 25              | mA    |
| Derating Linear From 25°C Per Segment   | 0.28            | mA/°C |
| Operating Temperature Range   | -35°C to +105°C |       |
| Storage Temperature Range   | -35°C to +105°C |       |
| Solder Temperature: max 260°C for max 5 sec at 1.6mm[1/16inch] below seating plane. |                 |       |

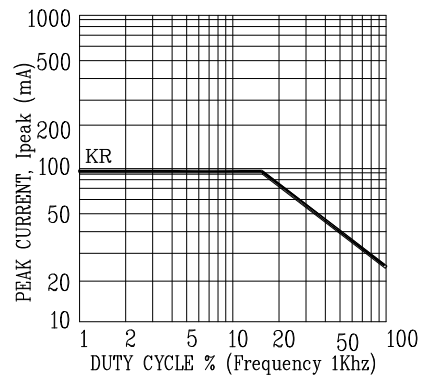
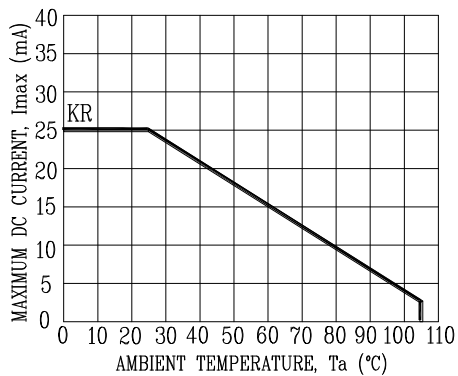
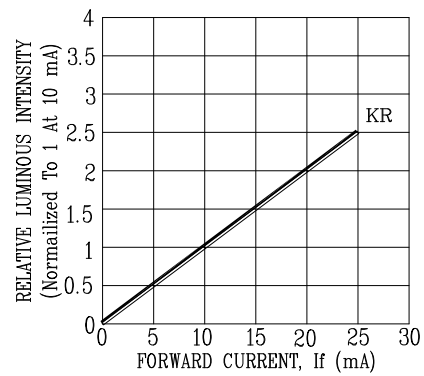
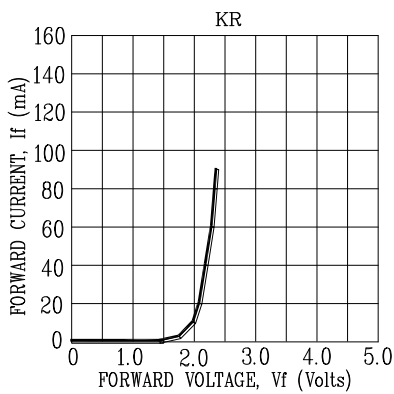
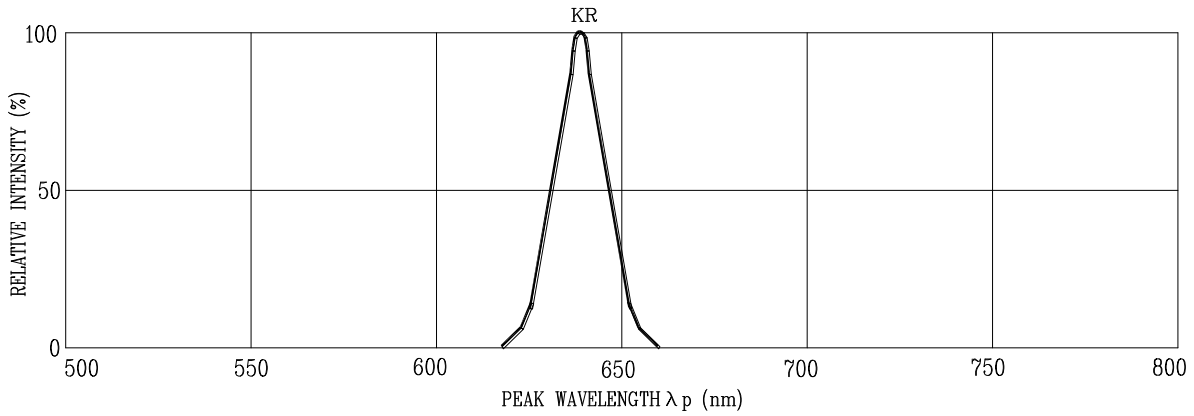
## ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

| PARAMETER                           | SYMBOL            | MIN. | TYP. | MAX. | UNIT | TEST CONDITION       |
|-------------------------------------|-------------------|------|------|------|------|----------------------|
| Average Luminous Intensity Per Icon | I <sub>v</sub>    | 200  | 650  |      | μcd  | I <sub>F</sub> =1mA  |
| Peak Emission Wavelength            | λ <sub>p</sub>    |      | 639  |      | nm   | I <sub>F</sub> =20mA |
| Spectral Line Half-Width            | Δλ                |      | 20   |      | nm   | I <sub>F</sub> =20mA |
| Dominant Wavelength                 | λ <sub>d</sub>    |      | 631  |      | nm   | I <sub>F</sub> =20mA |
| Forward Voltage Per Chip            | V <sub>F</sub>    |      | 2    | 2.6  | V    | I <sub>F</sub> =20mA |
| Reverse Current Per Chip            | 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: 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.

**TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES**

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : KR=AlInGaP SUPER RED