



# LED Display Product Data Sheet LTS-4301Y

Spec No.: DS-30-96-260

Effective Date: 02/13/2014

Revision: A

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

**LED DISPLAY  
LTS-4301Y**

**LED DISPLAY**

LTS-4301Y

| <u>Rev</u>  | <u>Description</u>   | <u>By</u> | <u>Date</u> |
|---|--|-----------|-------------|
| 01  | Preliminary SPEC   | Koko Hsu  | 05-Apr-2000 |
|   |  |           |             |
|   |  |           |             |
|   |  |           |             |
| <b>Above data for PD and Customer tracking only</b> |  |           |             |
| -   | Release NPPR   | Koko Hsu  | 05-Apr-2000 |
| A   | - Correct Peak Emission Wavelength<br>- Update Operating/Storage Temperature Range<br>from -35°C to +85°C to -35°C to +105°C | Anon B    | 21-Jan-2013 |
|   |  |           |             |

## 1. Description

The LTS-4301Y is a 0.4 inch (10.0 mm) digit height single digit even-segment display. This device utilizes yellow LED chips, which are made from GaAsP on a transparent GaP substrate, and has a gray face and white segments.

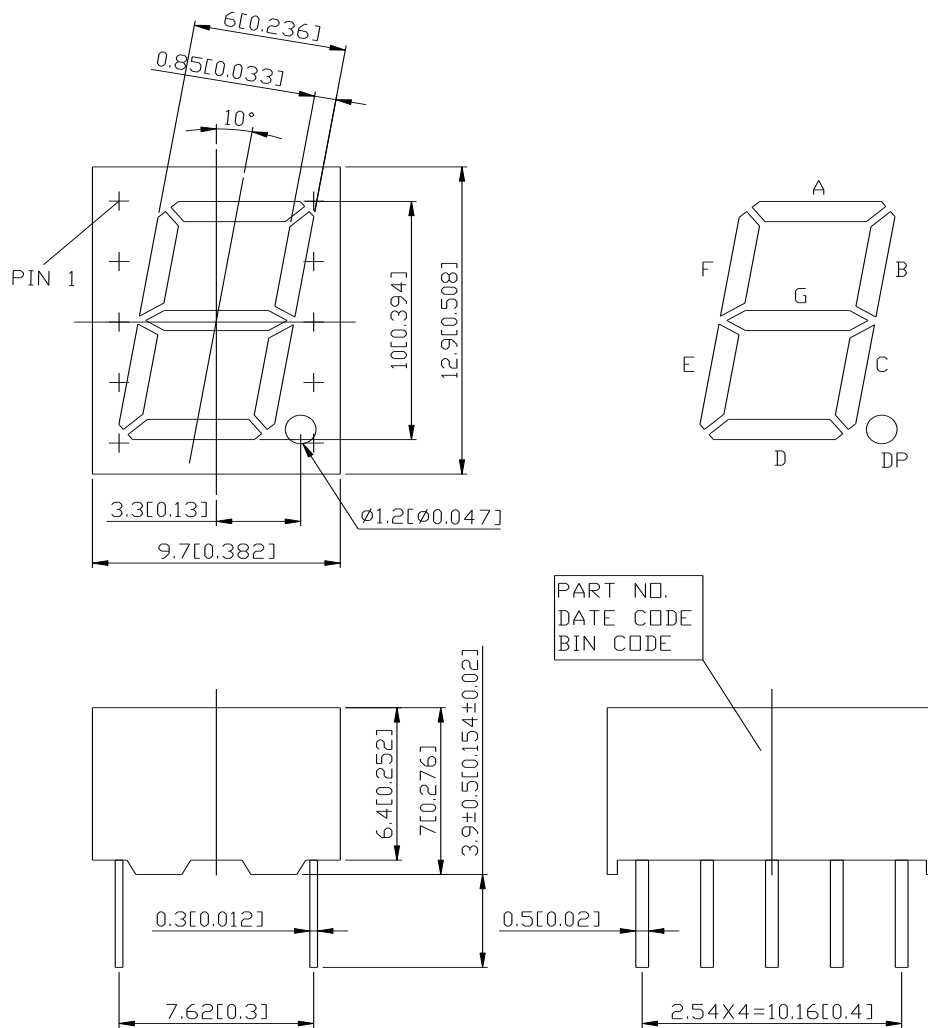
### 1.1 Features

- 0.40 inch (10.0 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      |
|-----------|------------------|
| YELLOW    | Common Anode     |
| LTS-4301Y | Rt. Hand Decimal |

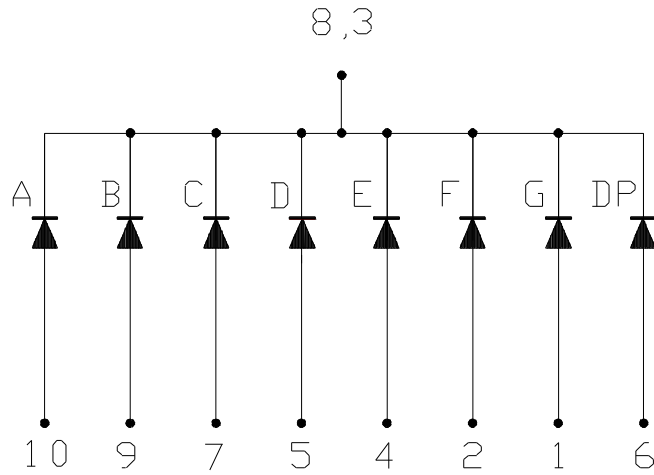
## 2. Package Dimensions



### Notes :

1. All dimensions are in millimeters. Tolerances are  $\pm 0.25\text{mm}$  ( $0.01''$ ) unless otherwise noted.
2. Foreign materials on segment  $\leq 10\text{mils}$
3. Bubble in segment  $\leq 10\text{mils}$
4. Bending  $\leq 1\%$  of reflector length
5. Ink contamination (surface)  $\leq 20\text{mils}$
6. Pin tip's shift tolerance is  $\pm 0.4$  mm.

**3. Internal Circuit Diagram**



**4. Pin Connection**

| No. | CONNECTION     |
|-----|----------------|
| 1   | ANODE G        |
| 2   | ANODE F        |
| 3   | COMMON CATHODE |
| 4   | ANODE E        |
| 5   | ANODE D        |
| 6   | ANODE D.P.     |
| 7   | ANODE C        |
| 8   | COMMON CATHODE |
| 9   | ANODE B        |
| 10  | ANODE A        |

## LED DISPLAY LTS-4301Y

### 5. Rating and Characteristics

#### 5.1. Absolute Maximum Rating at Ta=25°C

| Parameter  | Maximum Rating  | Unit  |
|--|-----------------|-------|
| Power Dissipation Per Segment  | 60              | mW    |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle, 0.1ms Pulse Width )   | 80              | mA    |
| Continuous Forward Current Per Segment   | 20              | mA    |
| Derating Linear From 25°C Per Segment  | 0.22            | mA/°C |
| Operating Temperature Range  | -35°C to +105°C |       |
| Storage Temperature Range  | -35°C to +105°C |       |
| Solder Conditions: 1/16 inch below seating plane for 3 seconds at 260°C.,<br>or temperature of unit (during assembly) not over max. temperature rating above |                 |       |

#### 5.2. Electrical / Optical Characteristics at Ta=25°C

| Parameter   | Symbol          | MIN. | TYP. | MAX. | Unit    | Test Condition |
|---|-----------------|------|------|------|---------|----------------|
| Average Luminous Intensity                                | IV              | 800  | 2200 |      | ucd     | IF=10mA        |
| Peak Emission Wavelength                                  | $\lambda_p$     |      | 585  |      | nm      | IF=20mA        |
| Spectral Line Half-Width                                  | $\Delta\lambda$ |      | 35   |      | nm      | IF=20mA        |
| Dominant Wavelength                                       | $\lambda_d$     |      | 588  |      | nm      | IF=20mA        |
| Forward Voltage Per Chip                                  | VF              |      | 2.10 | 2.60 | V       | IF=20mA        |
| Reverse Current Per Segment <sup>(2)</sup>                | IR              |      |      | 100  | $\mu$ A | VR=5V          |
| Luminous Intensity Matching Ratio<br>(Similar Light Area) | IV-m            |      |      | 2:1  |         | IF=10mA        |

#### 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  $\leq 1.0\%$

# LED DISPLAY LTS-4301Y

## 6. Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

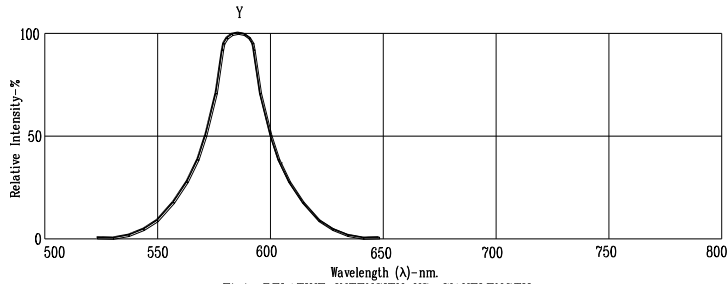


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

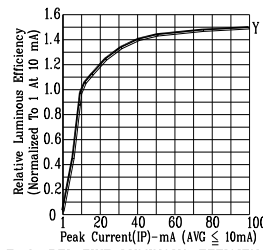


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

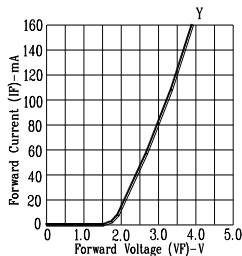


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

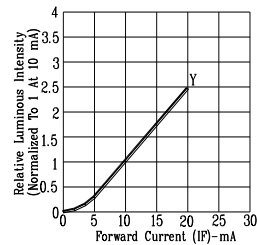


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

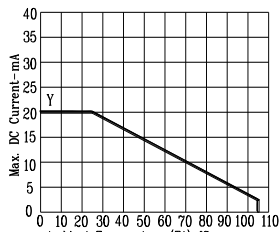


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

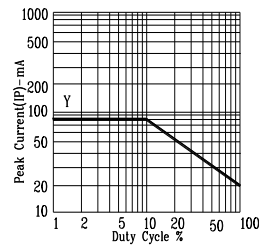


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE : Y= YELLOW