



# **LED Display**

## **Product Data Sheet**

### **LTS-10305A**

Spec No.: DS-30-99-452

Effective Date: 06/20/2000

Revision: A

**LITE-ON DCC**

**RELEASE**

**BNS-OD-FC001/A4**

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## **FEATURES**

- \* 1.0 inch ( 25.4mm) 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.

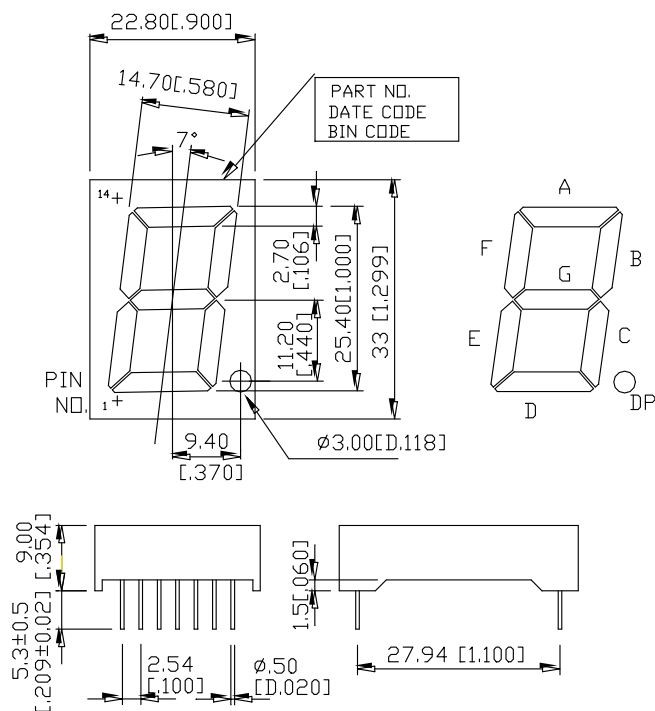
## **DESCRIPTION**

The LTS-10305A is a 1.0-inch (25.4-mm) height single digit display. This device utilizes red orange and green LED chips, The red orange LED chips are made from GaAsP on a transparent GaP substrate, The green LED chips are made from GaP on a transparent GaP substrate and has a black face and white segments.

## **DEVICE**

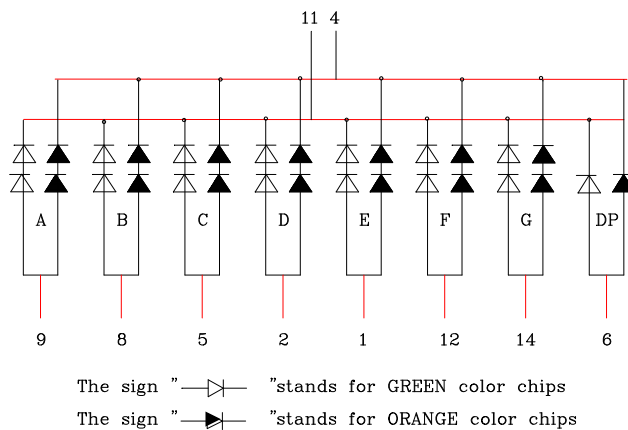
| <b>PART NO.</b> | <b>DESCRIPTION</b> |
|-----------------|--------------------|
| MULTI COLOR     | Common Cathode     |
| LTS-10305A      | Rt. Hand Decimal   |

## PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerance is  $\pm 0.25$  mm (0.01") unless otherwise noted.

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| <b>No.</b> | <b>CONNECTION</b>           |
|------------|-----------------------------|
| 1          | ANODE E                     |
| 2          | ANODE D                     |
| 3          | NO PIN                      |
| 4          | COMMON CATHODE (GREEN)      |
| 5          | ANODE C                     |
| 6          | ANODE D.P.                  |
| 7          | NO PIN                      |
| 8          | ANODE B                     |
| 9          | ANODE A                     |
| 10         | NO PIN                      |
| 11         | COMMON CATHODE (RED ORANGE) |
| 12         | ANODE F                     |
| 13         | NO PIN                      |
| 14         | ANODE G                     |

**ABSOLUTE MAXIMUM RATING AT Ta=25°C**

## ORANGE

| PARAMETER                                                                          | MAXIMUM RATING | UNIT  |
|------------------------------------------------------------------------------------|----------------|-------|
| Power Dissipation Per Segment                                                      | 120(75)        | mW    |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle, 0.1ms Pulse Width )         | 100            | mA    |
| Continuous Forward Current Per Segment                                             | 25             | mA    |
| Derating Linear From 25°C Per Segment                                              | 0.33           | mA/°C |
| Reverse Voltage Per Segment                                                        | 10(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>    | 2000 | 6000         |              | μcd  | I <sub>F</sub> =10mA    |
| Peak Emission Wavelength          | λ <sub>p</sub>    |      | 630          |              | nm   | I <sub>F</sub> =20mA    |
| Spectral Line Half-Width          | Δλ                |      | 40           |              | nm   | I <sub>F</sub> =20mA    |
| Dominant Wavelength               | λ <sub>d</sub>    |      | 621          |              | nm   | I <sub>F</sub> =20mA    |
| Forward Voltage Per Segment       | V <sub>F</sub>    |      | 4.0<br>(2.0) | 5.2<br>(2.6) | V    | I <sub>F</sub> =20mA    |
| Reverse Current Per Segment       | I <sub>R</sub>    |      |              | 100          | μA   | V <sub>R</sub> =10V(5V) |
| Luminous Intensity Matching Ratio | I <sub>v</sub> -m |      |              | 2:1          |      | I <sub>F</sub> =10mA    |

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

**ABSOLUTE MAXIMUM RATING AT Ta=25°C**

GREEN

| PARAMETER                                                                          | MAXIMUM RATING | UNIT  |
|------------------------------------------------------------------------------------|----------------|-------|
| Power Dissipation Per Segment                                                      | 120(75)        | mW    |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle, 0.1ms Pulse Width )         | 100            | mA    |
| Continuous Forward Current Per Segment                                             | 25             | mA    |
| Derating Linear From 25°C Per Segment                                              | 0.33           | mA/°C |
| Reverse Voltage Per Segment                                                        | 10(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. |                |       |

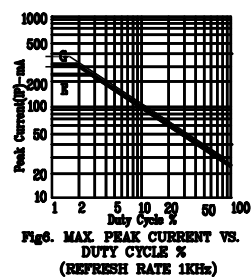
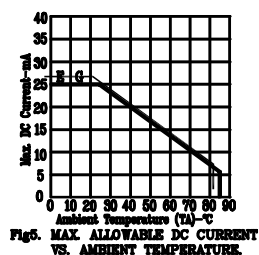
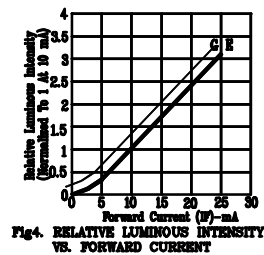
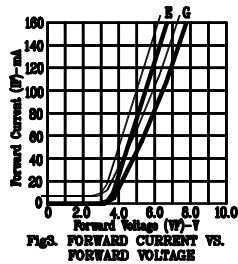
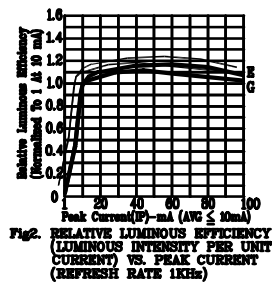
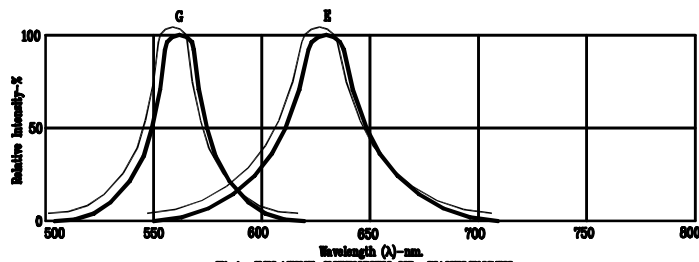
**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C**

| PARAMETER                         | SYMBOL           | MIN. | TYP.         | MAX.         | UNIT | TEST CONDITION          |
|-----------------------------------|------------------|------|--------------|--------------|------|-------------------------|
| Average Luminous Intensity        | I <sub>v</sub>   | 2000 | 6000         |              | μcd  | I <sub>F</sub> =10mA    |
| Peak Emission Wavelength          | λ <sub>p</sub>   |      | 565          |              | nm   | I <sub>F</sub> =20mA    |
| Spectral Line Half-Width          | Δλ               |      | 30           |              | nm   | I <sub>F</sub> =20mA    |
| Dominant Wavelength               | λ <sub>d</sub>   |      | 569          |              | nm   | I <sub>F</sub> =20mA    |
| Forward Voltage Per Segment       | V <sub>F</sub>   |      | 4.2<br>(2.1) | 5.2<br>(2.6) | V    | I <sub>F</sub> =20mA    |
| Reverse Current Per Segment       | I <sub>R</sub>   |      |              | 100          | μA   | V <sub>R</sub> =10V(5V) |
| Luminous Intensity Matching Ratio | I <sub>v-m</sub> |      |              | 2:1          |      | I <sub>F</sub> =10mA    |

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: E-RED ORANGE G-GREEN