



# LITE-ON TECHNOLOGY CORPORATION

Property of Lite-On Only

## FEATURES

0.28-inch (7.0-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.

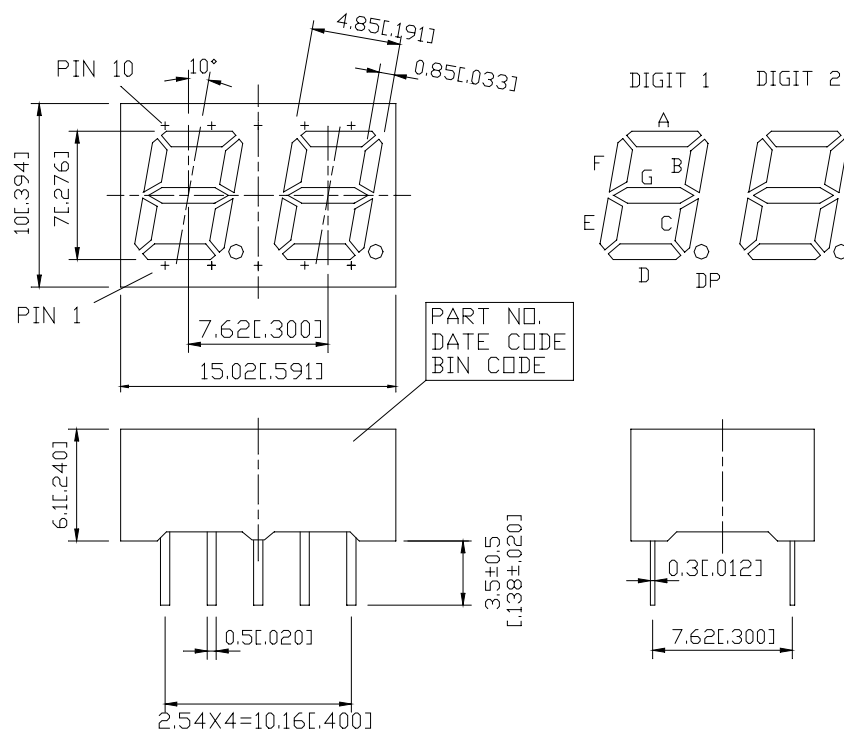
## DESCRIPTION

The LTD-2701B is a 0.28-inch (7.0-mm) digit height dual digit seven-segment display. This device utilizes blue LED chips, which are made from GaN on a SiC substrate, and has a gray face and white segments.

## DEVICE

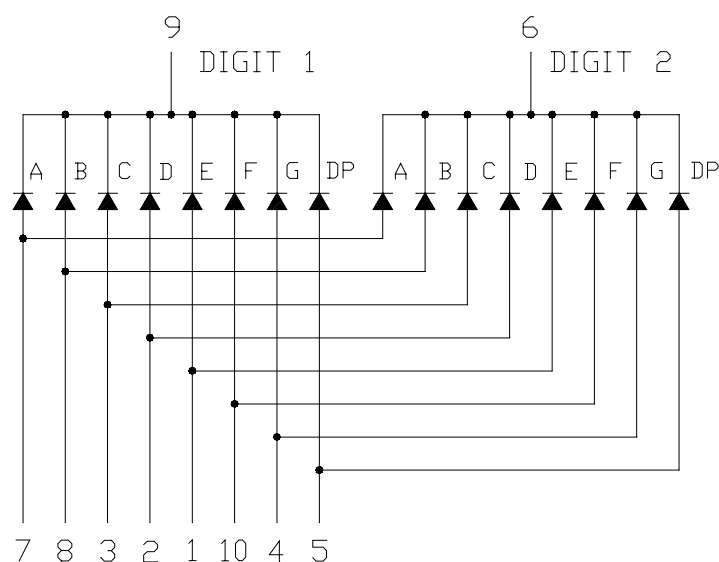
| PART NO.  | DESCRIPTION                               |
|-----------|-------------------------------------------|
| BLUE      | Duplex Common Cathode<br>Rt. Hand Decimal |
| LTD-2701B |                                           |

## PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are  $\pm 0.25$  mm (0.01“) unless otherwise noted.

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

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

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

| PARAMETER                                                                  | MAXIMUM RATING | UNIT |
|----------------------------------------------------------------------------|----------------|------|
| Power Dissipation Per Segment                                              | 115            | mW   |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle, 0.1ms Pulse Width ) | 60             | mA   |
| Continuous Forward Current Per Segment                                     | 25             | mA   |
| Derating Linear From 25 Per Segment                                        | 0.33           | mA/  |
| Reverse Voltage Per Segment                                                | 5              | V    |
| Operating Temperature Range                                                | -35 to +85     |      |
| Storage Temperature Range                                                  | -35 to +85     |      |
| Solder Temperature: max 260 for max 3sec at 1.6mm 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>    | 1000 | 3000 |      | μcd  | I <sub>F</sub> =10mA |
| Peak Emission Wavelength          | λ <sub>p</sub>    |      | 428  |      | nm   | I <sub>F</sub> =20mA |
| Spectral Line Half-Width          | Δλ                |      | 65   |      | nm   | I <sub>F</sub> =20mA |
| Dominant Wavelength               | λ <sub>d</sub>    |      | 466  |      | nm   | I <sub>F</sub> =20mA |
| Forward Voltage Per Segment       | V <sub>F</sub>    |      | 3.8  | 4.5  | 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> =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)

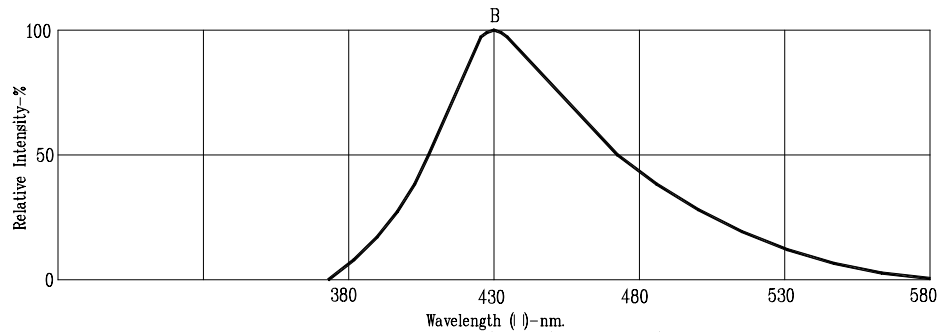


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

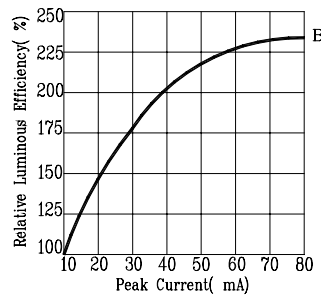


Fig2. RELATIVE LUMINOUS EFFICIENCY  
VS. PEAK FORWARD CURRENT  
(250us pulse width; 2ms period)

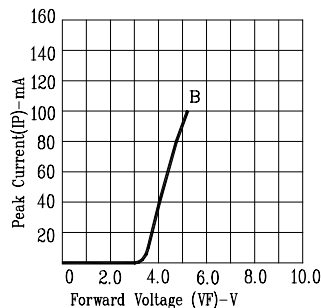


Fig3. FORWARD CURRENT VS.  
FORWARD VOLTAGE

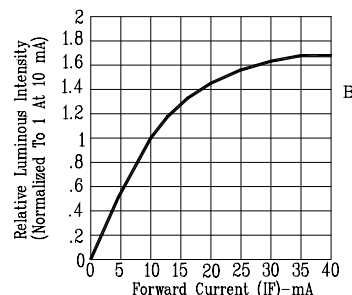


Fig4. RELATIVE LUMINOUS INTENSITY  
VS. FORWARD CURRENT

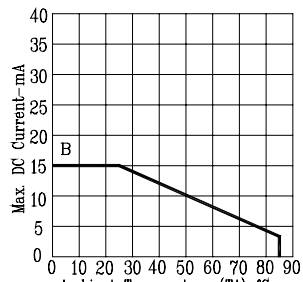


Fig5. MAX. ALLOWABLE DC CURRENT  
VS. AMBIENT TEMPERATURE.

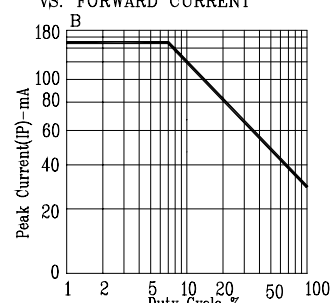


Fig6. MAX. PEAK CURRENT VS.  
DUTY CYCLE %  
(REFRESH RATE 1KHz)