

**LED DISPLAY****LTC-4627B**  
**DATASHEET**

| <u>Rev</u>                                     | <u>Description</u>                                  | <u>By</u>                              |
|--|---|--|
| 01   | ORIGINAL<br>(Refer to contour drawing Revision (-)) | <u>Vanessa Lee</u><br><u>8/11/2000</u> |
| (Above data for PD and Customer tracking only) |   |  |
| -  | NPPR Received and Upload on OPNC                    | <u>Vanessa Lee</u><br><u>8/11/2000</u> |
| A  | Revise temperature Range from 85°C to 105°C         | <u>KITTISAK</u><br><u>2/25/2008</u>    |
|  |   |  |
|  |   |  |
|  |   |  |
|  |   |  |

SPEC. NO.: DS30-2000-180DATE : Feb 25/2008REV. NO. : APAGE NO. : 0 OF 5

## **FEATURES**

- \* 0.4inch (10.0mm) 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.

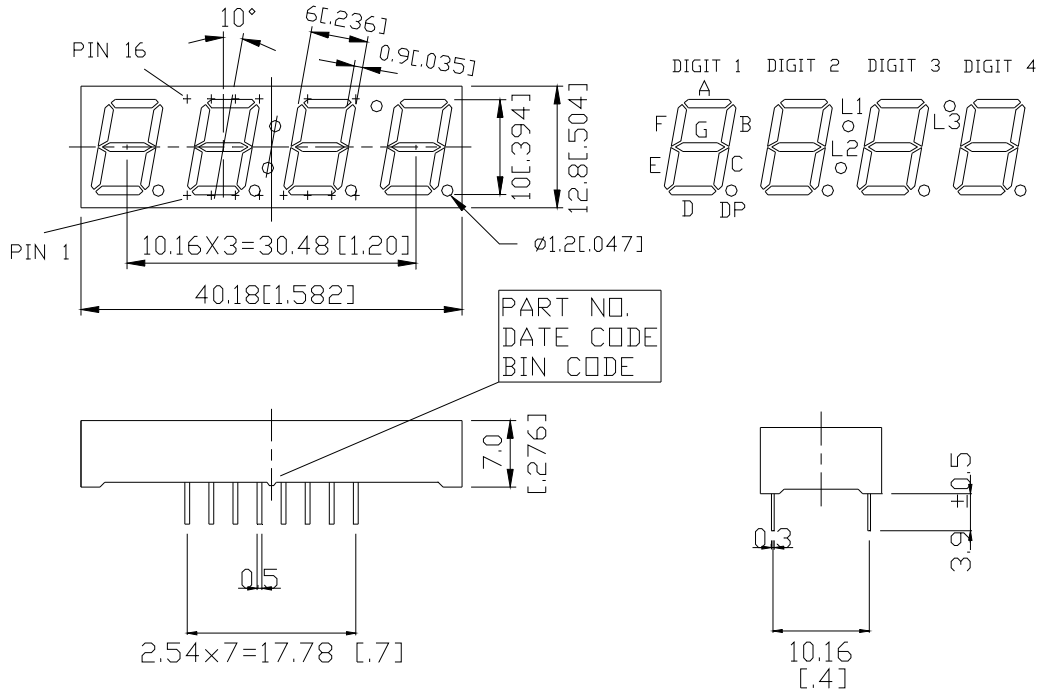
## **DESCRIPTION**

The LTC-4627B is a 0.4 inch (10.0 mm) digit height quadruple digit seven-segment display. This device uses InGaN BLUE LED chips (InGaN epi on SiC substrate),and has a gray face and white segments.

## **DEVICE**

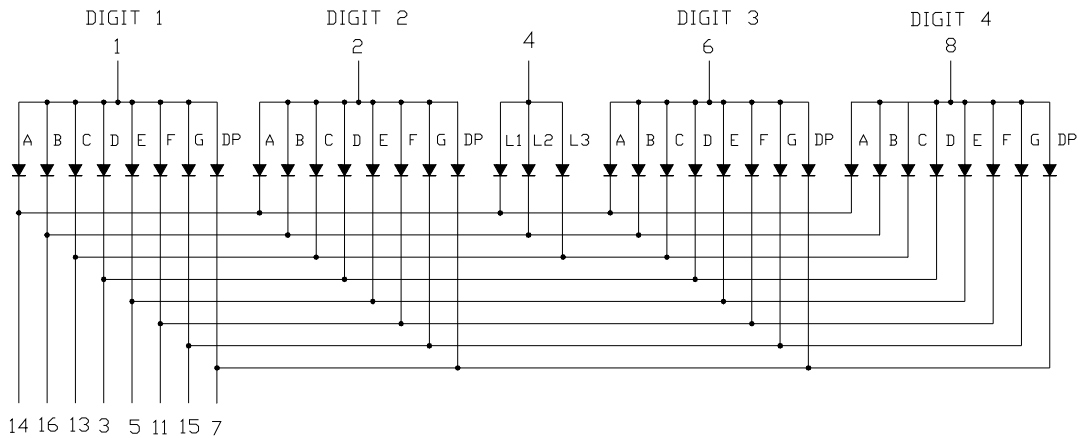
| <b>PART NO.</b> | <b>DESCRIPTION</b>     |
|-----------------|------------------------|
| InGaN BLUE      | Multiplex Common Anode |
| LTC-4627B       | Rt. Hand Decimal       |

## PACKAGE DIMENSIONS



- NOTES: 1. All dimensions are in millimeters. Tolerances are  $\pm 0.25$  mm (0.01") unless otherwise noted.  
 2. Pin tip's shift tolerance is  $\pm 0.4$  mm.

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| NO | CONNECTION            |
|----|-----------------------|
| 1  | COMMON ANODE DIGIT 1  |
| 2  | COMMON ANODE DIGIT 2  |
| 3  | CATHODE D             |
| 4  | COMMON ANODE L1,L2,L3 |
| 5  | CATHODE E             |
| 6  | COMMON ANODE DIGIT 3  |
| 7  | CATHODE DP            |
| 8  | COMMON ANODE DIGIT 4  |
| 9  | NO CONNECTION         |
| 10 | NO PIN                |
| 11 | CATHODE F             |
| 12 | NO PIN                |
| 13 | CATHODE C,L3          |
| 14 | CATHODE A,L1          |
| 15 | CATHODE G             |
| 16 | CATHODE B,L2          |

**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  | 30              | mA    |
| Derating Linear From 25°C Per Segment   | 0.16            | mA/°C |
| Reverse Voltage Per Segment   | 5               | V     |
| Operating Temperature Range   | -35°C to +105°C |       |
| Storage Temperature Range   | -35°C to +105°C |       |
| Solder Temperature: max 260°C for max 3sec at 1.6mm below seating plane.<br>or temperature of unit (during assembly) not over max. temperature rating above |                 |       |

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

| PARAMETER                         | SYMBOL            | MIN. | TYP.  | MAX. | UNIT | TEST CONDITION       |
|-----------------------------------|-------------------|------|-------|------|------|----------------------|
| Average Luminous Intensity        | I <sub>v</sub>    | 5000 | 13000 |      | μcd  | I <sub>F</sub> =10mA |
| Peak Emission Wavelength          | λ <sub>p</sub>    |      | 468   |      | nm   | I <sub>F</sub> =5mA  |
| Spectral Line Half-Width          | Δλ                |      | 25    |      | nm   | I <sub>F</sub> =5mA  |
| Dominant Wavelength               | λ <sub>d</sub>    |      | 470   |      | nm   | I <sub>F</sub> =5mA  |
| Forward Voltage Per Segment       | V <sub>F</sub>    | 2.5  |       | 3.5  | V    | I <sub>F</sub> =5mA  |
| 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)

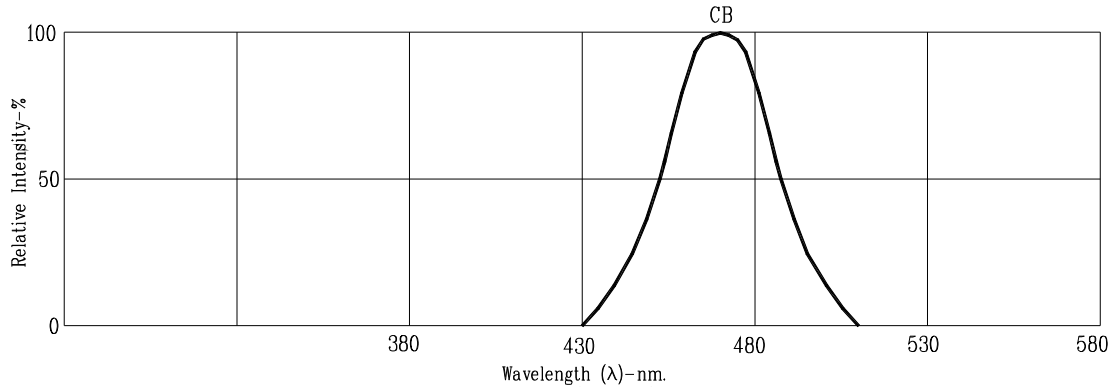


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

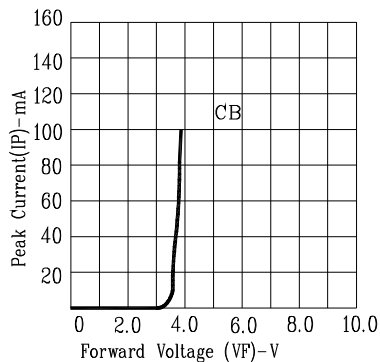


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

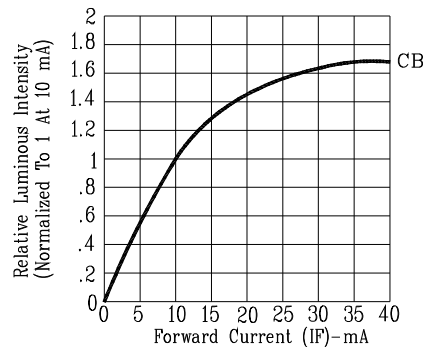


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

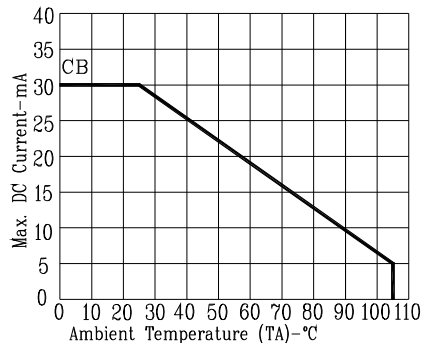


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

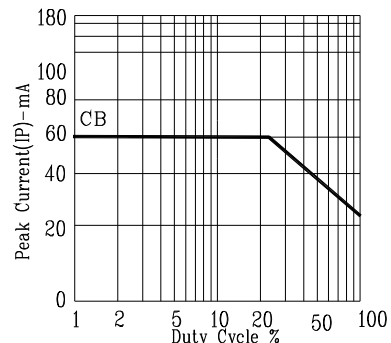


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: CB=InGaN Blue