



# LED Display

## Product Data Sheet

### LTS-3401LJF

Spec No.: DS30-2001-434

Effective Date: 05/07/2002

Revision: -

**LITE-ON DCC**

**RELEASE**

**FEATURES**

- \* 0.8-INCH (20.32-mm) DIGIT HEIGHT.
- \* CONTINUOUS UNIFORM SEGMENTS
- \* LOW POWER CONSUMPTION.
- \* LOW POWER REQUIREMENT.
- \* EXCELLENT CHARACTERS APPEARANCE.
- \* WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.
- \* I.C. COMPATIBLE.
- \* EASY MOUNTING ON P.C. BOARD OR SOCKET.

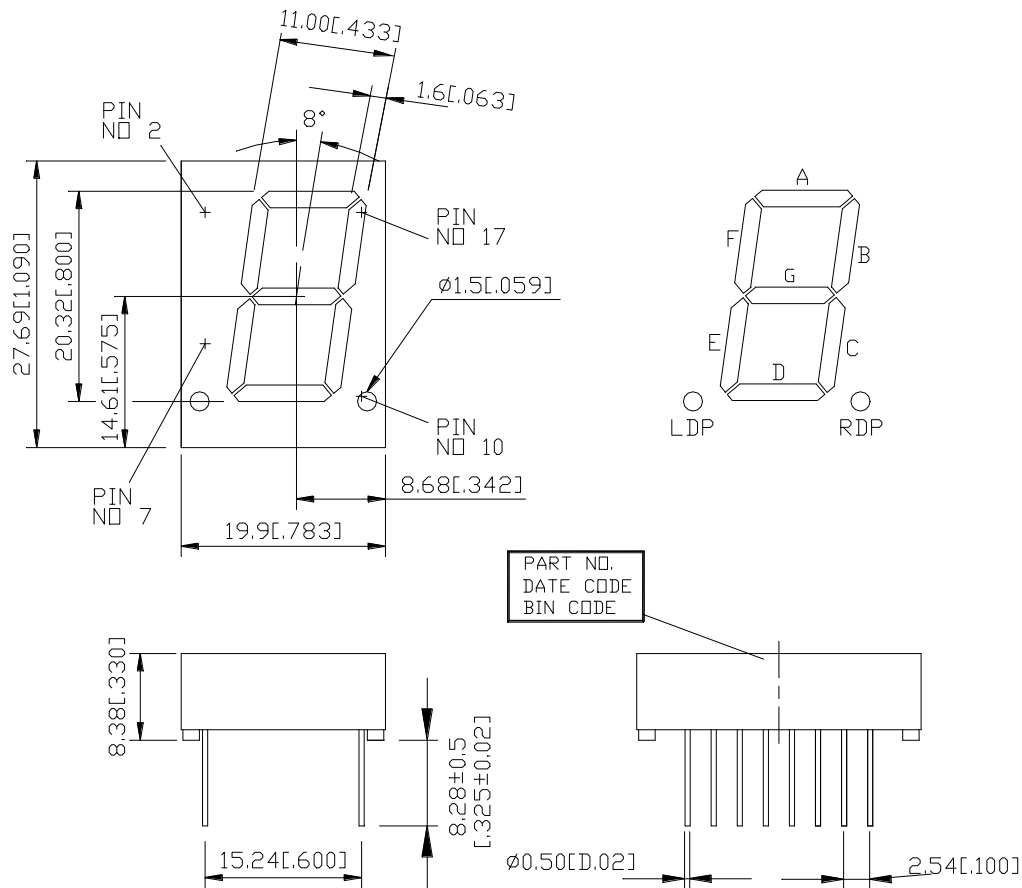
**DESCRIPTION**

The LTS-3401LJF is a 0.8-inch (20.32-mm) digit height single digit low current seven-segment display. This device utilizes AlInGaP Yellow Orange LED chips, which are made from AlInGaP on a non-transparent GaAs substrate, and has a gray face and white segments.

**DEVICE**

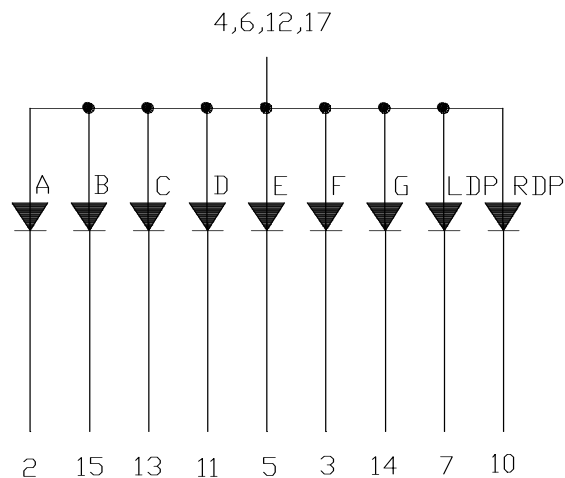
| PART NO.              | DESCRIPTION                            |
|-----------------------|----------------------------------------|
| AlInGaP Yellow Orange | Common Anode<br>Rt. & Lt. Hand Decimal |
| LTS-3401LJF           |                                        |

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| No. | CONNECTION    |
|-----|---------------|
| 1   | NO PIN        |
| 2   | CATHODE A     |
| 3   | CATHODE F     |
| 4   | COMMON ANODE  |
| 5   | CATHODE E     |
| 6   | COMMON ANODE  |
| 7   | CATHODE L.D.P |
| 8   | NO PIN        |
| 9   | NO PIN        |
| 10  | CATHODE R.D.P |
| 11  | CATHODE D     |
| 12  | COMMON ANODE  |
| 13  | CATHODE C     |
| 14  | CATHODE G     |
| 15  | CATHODE B     |
| 16  | NO PIN        |
| 17  | COMMON ANODE  |
| 18  | NO PIN        |

**ABSOLUTE MAXIMUM RATING AT T<sub>A</sub>=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)             | 60                                       | mA                 |
| Continuous Forward Current Per Segment                                               | 25                                       | mA                 |
| Derating Linear From 25 <sup>0</sup> C Per Segment                                   | 0.33                                     | mA/ <sup>0</sup> C |
| Reverse Voltage Per Segment                                                          | 5                                        | V                  |
| Operating Temperature Range                                                          | -35 <sup>0</sup> C to +85 <sup>0</sup> C |                    |
| Storage Temperature Range                                                            | -35 <sup>0</sup> C to +85 <sup>0</sup> C |                    |
| Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at 260 <sup>0</sup> C |                                          |                    |

**ELECTRICAL / OPTICAL CHARACTERISTICS AT T<sub>A</sub>=25°C**

| PARAMETER                         | SYMBOL            | MIN. | TYP. | MAX. | UNIT | TEST CONDITION       |
|-----------------------------------|-------------------|------|------|------|------|----------------------|
| Average Luminous Intensity        | I <sub>v</sub>    | 320  | 900  |      | μcd  | I <sub>F</sub> =1mA  |
| Peak Emission Wavelength          | λ <sub>p</sub>    |      | 611  |      | nm   | I <sub>F</sub> =20mA |
| Spectral Line Half-Width          | Δλ                |      | 17   |      | nm   | I <sub>F</sub> =20mA |
| Dominant Wavelength               | λ <sub>d</sub>    |      | 605  |      | nm   | I <sub>F</sub> =20mA |
| Forward Voltage Per Segment       | V <sub>F</sub>    |      | 2.05 | 2.6  | 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)

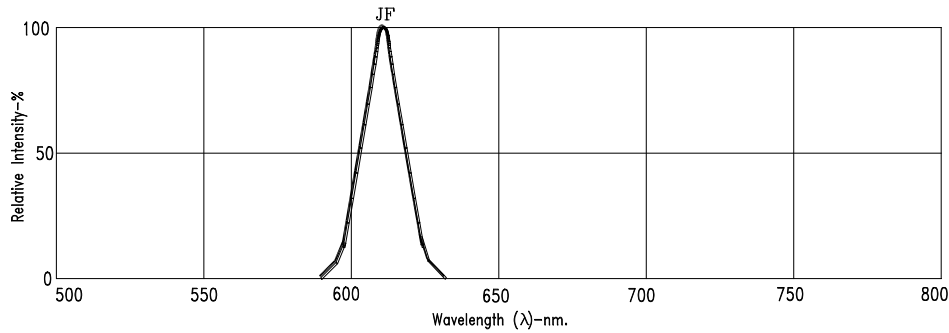


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

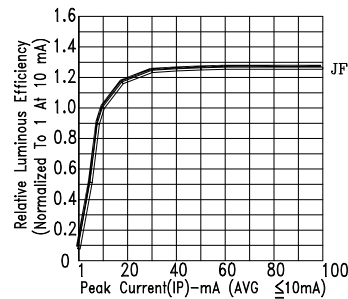


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

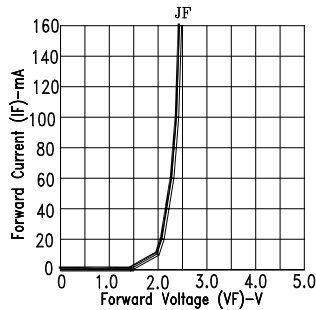


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

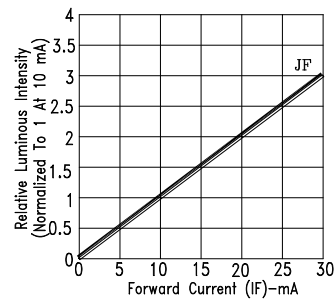


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

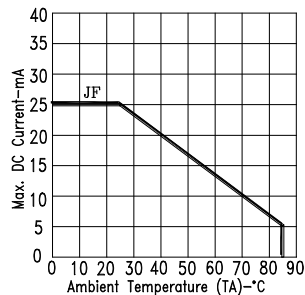


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

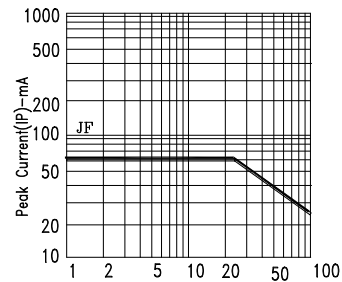


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE : JF=AlInGaP YELLOW ORANGE