

### Features

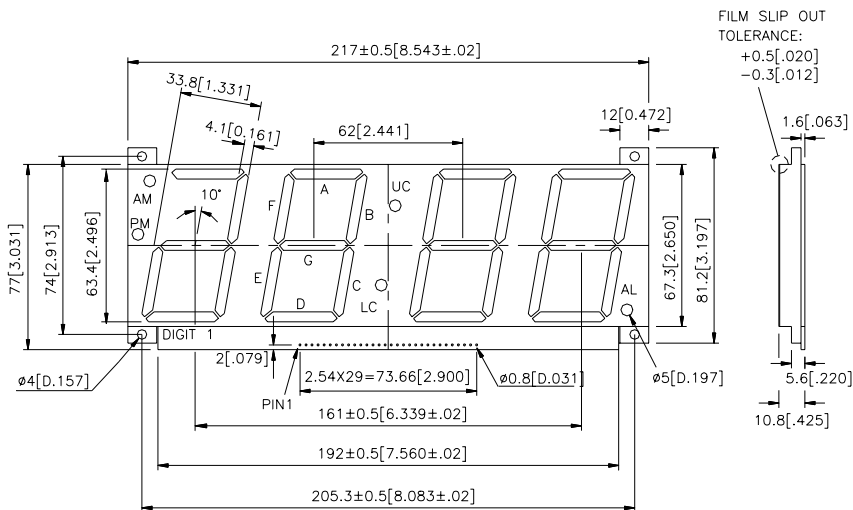
- 2.5 inch (63.4mm) height character red color.
- Continuous uniform segments.
- Wide angle, long distance viewing.
- Color filter provides high contrast.
- Low power requirements. high reliability and long life.

### Description

The LTC-25000 series devices are designed for viewing distance of up to two meters and for using in instrument, test equipment, communication equipment, business machines, computers, micro processor...ect.

### Package Dimensions

A. LTC-25501 series



Notes: All dimensions are in millimeters (inches). Tolerance:  $\pm 0.25\text{mm}$  (0.010") unless otherwise noted.

### Device

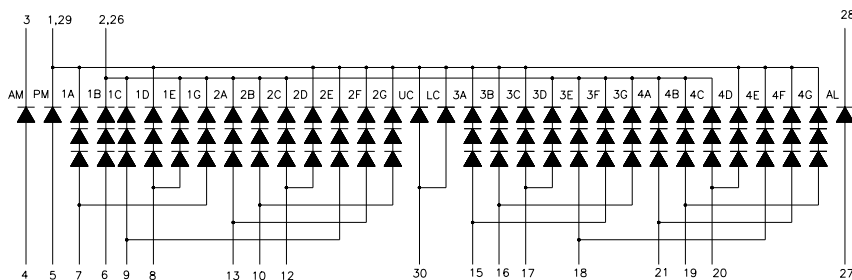
| Part No.   | Description    |       |       |       |
|------------|----------------|-------|-------|-------|
| Bright Red | Drive Mode     | Clock | AM/PM | Alarm |
| 25501PAA   | Common Cathode | 24Hr  | AM/PM | Low   |

## Pin Connection

| Pin No. | Connection                       |
|---------|----------------------------------|
| 1       | Common Cathode 1                 |
| 2       | Common Cathode 2                 |
| 3       | Cathode AM                       |
| 4       | Anode AM                         |
| 5       | Anode PM                         |
| 6       | Digit 1 Anode B                  |
| 7       | Digit 1 Anode A, Digit 1 Anode G |
| 8       | Digit 1 Anode D, Digit 1 Anode E |
| 9       | Digit 2 Anode E, Digit 1 Anode C |
| 10      | Digit 2 Anode B, Digit 2 Anode G |
| 11      | No Use                           |
| 12      | Digit 2 Anode C, Digit 2 Anode D |
| 13      | Digit 2 Anode A, Digit 2 Anode F |
| 14      | No Use                           |
| 15      | Digit 3 Anode A, Digit 3 Anode F |
| 16      | Digit 3 Anode B, Digit 3 Anode G |
| 17      | Digit 3 Anode C, Digit 3 Anode D |
| 18      | Digit 3 Anode E, Digit 4 Anode E |
| 19      | Digit 4 Anode B, Digit 4 Anode G |
| 20      | Digit 4 anode C, Digit 4 Anode D |
| 21      | Digit 4 Anode A, Digit 4 Anode F |
| 22      | No Connection                    |
| 23      | No Connection                    |
| 24      | No Connection                    |
| 25      | No Connection                    |
| 26      | Common Cathode 2                 |
| 27      | Anode AL                         |
| 28      | Cathode AL                       |
| 29      | Common Cathode 1                 |
| 30      | Anode UC, Anode LC               |

## Internal Circuit Diagram

A. LTC-25501 series



## Absolute Maximum Ratings at Ta=25°C

| Parameter                                                                             | Bright Red     | Unit        |
|---------------------------------------------------------------------------------------|----------------|-------------|
| Power Dissipation Per Segment (Dot)                                                   | 110(40)        | mW          |
| Peak forward Current Per Segment<br>(1/10 duty Cycle, 0.1ms Pulse Width)              | 60             | mA          |
| Continuous forward Current Per Segment<br>Derating Linar From 25°C Per segment        | 15<br>0.20     | mA<br>mA/°C |
| Reverse Voltage Per Segment (Dot)                                                     | 15(5)          | V           |
| Operating Temperature Range                                                           | -25°C to +65°C |             |
| Storage Temperature Range                                                             | -25°C to +65°C |             |
| Ma x. solder Temperature 260°C from 3 Seconds at 2 mm from The Case or Reflector Edge |                |             |

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

| Parameter                                 | Symbol            | Min. | Typ.     | Max.     | Unit | Test Condition       |
|-------------------------------------------|-------------------|------|----------|----------|------|----------------------|
| Average Luminous Intensity                | I <sub>v</sub>    | 320  | 820      |          | μ cd | I <sub>F</sub> =10mA |
| Peak Emission Wavelength                  | λ <sub>P</sub>    |      | 697      |          | nm   | I <sub>F</sub> =20mA |
| Spectral Line Half-Width                  | Δ λ               |      | 90       |          | nm   | I <sub>F</sub> =20mA |
| Dominant Wavelength                       | λ <sub>d</sub>    |      | 657      |          | nm   | I <sub>F</sub> =20mA |
| Forward Voltage, any Segment or D.P.(Dot) | V <sub>F</sub>    |      | 6.3(2.1) | 8.4(2.6) | V    | I <sub>F</sub> =20mA |
| Reverse Current, any Segment or D.P.(Dot) | I <sub>R</sub>    |      |          | 100      | μ A  | V <sub>R</sub> =15V  |
| 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)

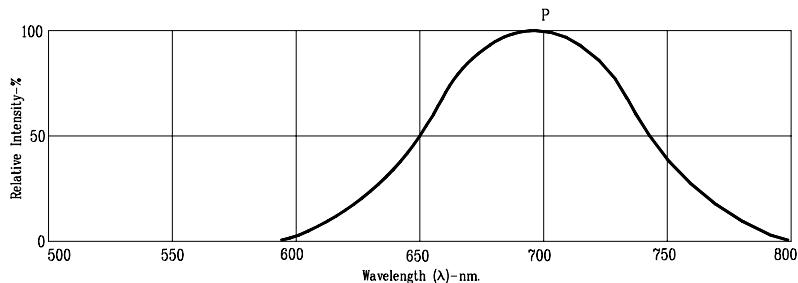


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

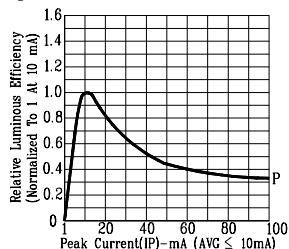


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

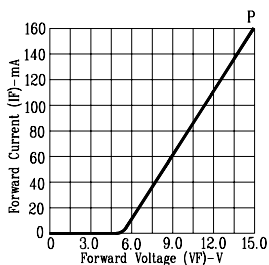


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

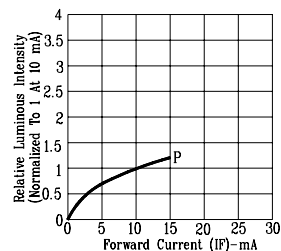


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

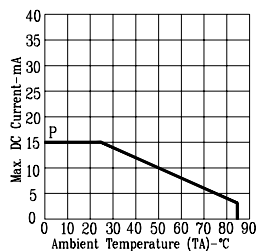


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

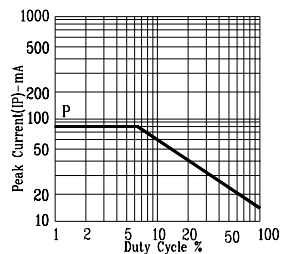


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: P=BRIGHT RED (REFRESH RATE 1KHz)