

## **FEATURES**

- \* 0.3 inch (7.62 mm ) DIGIT HEIGHT
- \* EXCELLENT SEGMENT UNIFORMITY
- \* LOW POWER REQUIREMENT
- \* HIGH BRIGHTNESS AND HIGH CONTRAST
- \* WIDE VIEWING ANGLE
- \* SOLID STATE RELIABILITY
- \* BINNED FOR LUMINOUS INTENSITY

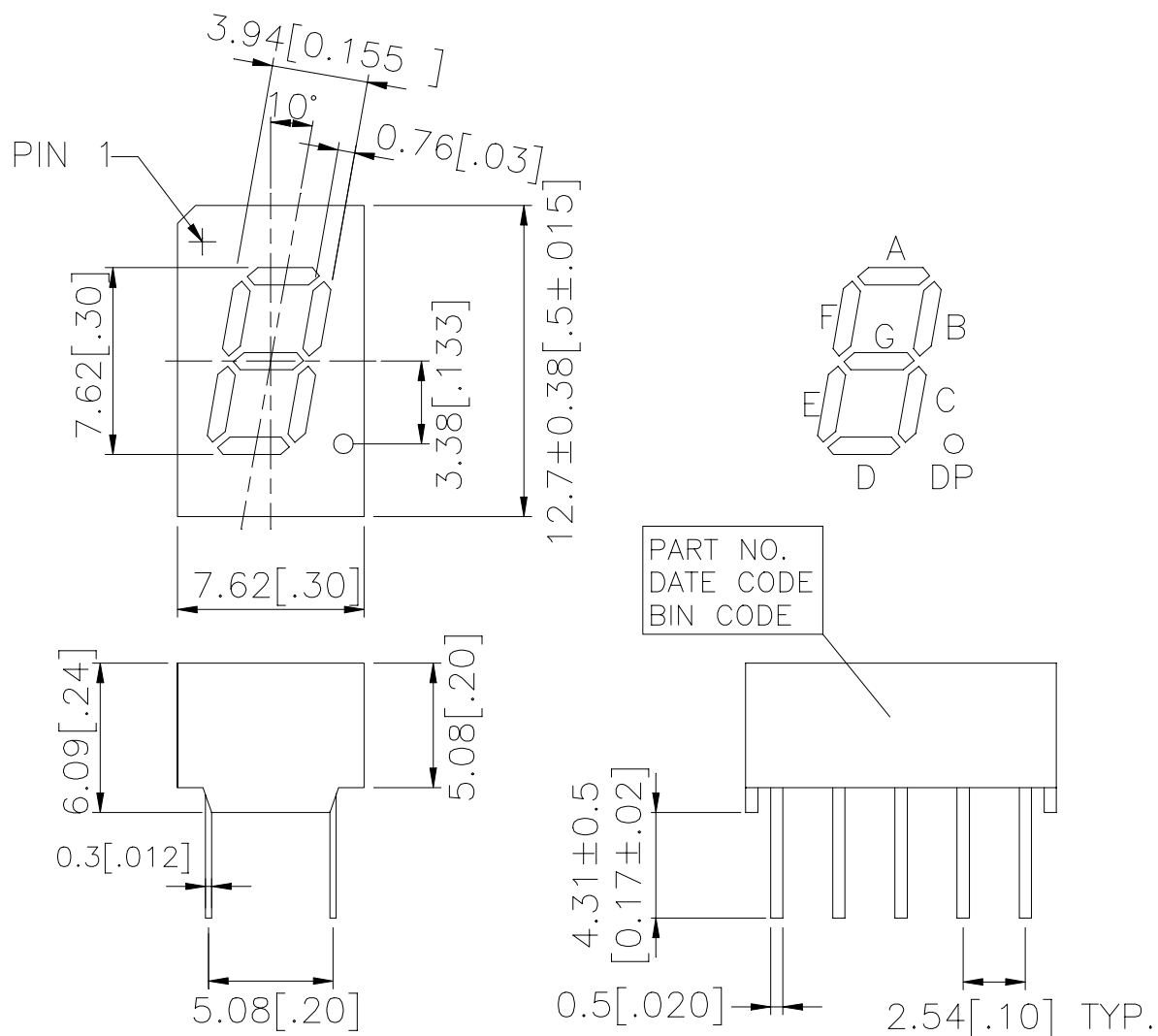
## **DESCRIPTION**

The LSHD-7503 is a 0.3 inch (7.62 mm) digit height single-digit display. This device uses AS-AlInGaP RED LED chips (AlInGaP epi on GaAs substrate). The display has light gray face and white segments.

## **DEVICE**

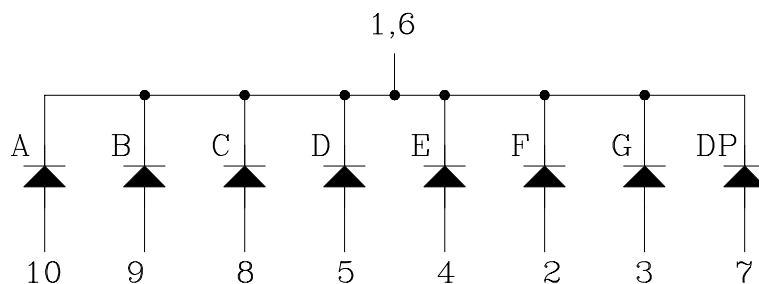
| <b>PART NO.</b> | <b>DESCRIPTION</b>                  |
|-----------------|-------------------------------------|
| AlInGaP RED     | Common Cathode<br>Rt. Hande Decimal |
| LSHD-7503       |                                     |

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| <b>No.</b> | <b>CONNECTION</b> |
|------------|-------------------|
| 1          | Common Cathode    |
| 2          | Anode F           |
| 3          | Anode G           |
| 4          | Anode E           |
| 5          | Anode D           |
| 6          | Common Cathode    |
| 7          | Anode DP          |
| 8          | Anode C           |
| 9          | Anode B           |
| 10         | Anode A           |

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

| PARAMETER                                                                                | MAXIMUM RATING                            | UNIT               |
|------------------------------------------------------------------------------------------|-------------------------------------------|--------------------|
| Power Dissipation Per Segment                                                            | 70                                        | mW                 |
| Peak Forward Current Per Segment<br>( Frequency 1Khz, 15% duty cycle)                    | 90                                        | mA                 |
| Continuous Forward Current Per Segment                                                   | 25                                        | mA                 |
| Forward Current Derating from 25 <sup>0</sup> C                                          | 0.28                                      | mA/ <sup>0</sup> C |
| Reverse Voltage Per Segment                                                              | 5                                         | V                  |
| Operating Temperature Range                                                              | -35 <sup>0</sup> C to +105 <sup>0</sup> C |                    |
| Storage Temperature Range                                                                | -35 <sup>0</sup> C to +105 <sup>0</sup> C |                    |
| Soldering Conditions : 1/16 inch below seating plane for 3 seconds at 260 <sup>0</sup> C |                                           |                    |

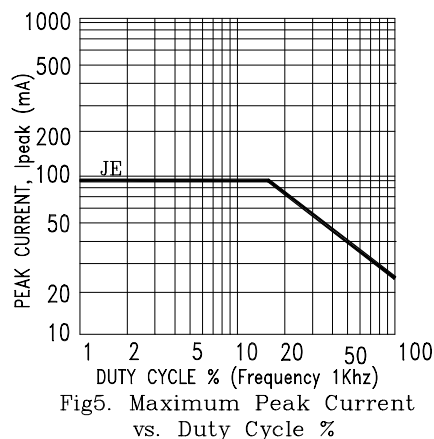
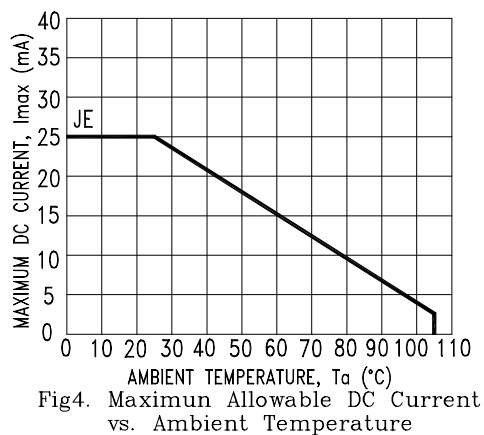
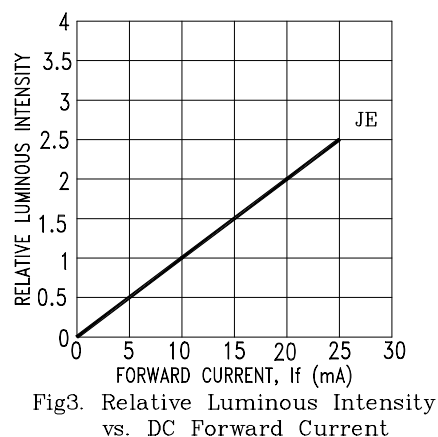
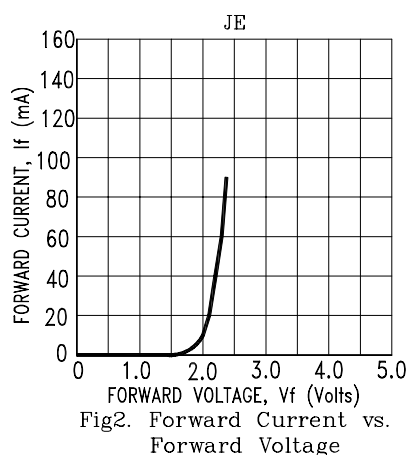
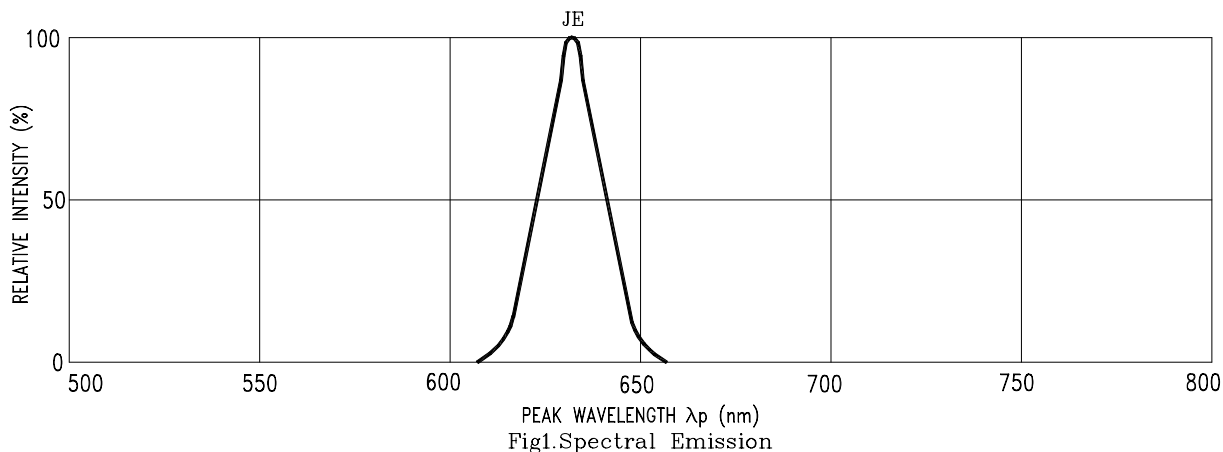
**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta = 25°C**

| PARAMETER                              | SYMBOL            | MIN         | TYP          | MAX   | UNIT | TEST<br>CONDITION                             |
|----------------------------------------|-------------------|-------------|--------------|-------|------|-----------------------------------------------|
| Average Luminous Intensity Per Segment | I <sub>v</sub>    | 320<br>5400 | 923<br>12000 |       | μcd  | I <sub>F</sub> = 1mA<br>I <sub>F</sub> = 10mA |
| Peak Emission Wavelength               | λ <sub>p</sub>    |             | 632          |       | nm   | I <sub>F</sub> = 20mA                         |
| Spectral Line Half-Width               | Δλ                |             | 20           |       | nm   | I <sub>F</sub> = 20mA                         |
| Dominant Wavelength                    | λ <sub>d</sub>    |             | 624          |       | nm   | I <sub>F</sub> = 20mA                         |
| Forward Voltage Per Segment            | V <sub>F</sub>    |             | 2.1          | 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> = 1mA                          |

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 : JE=AlInGaP RED