## 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

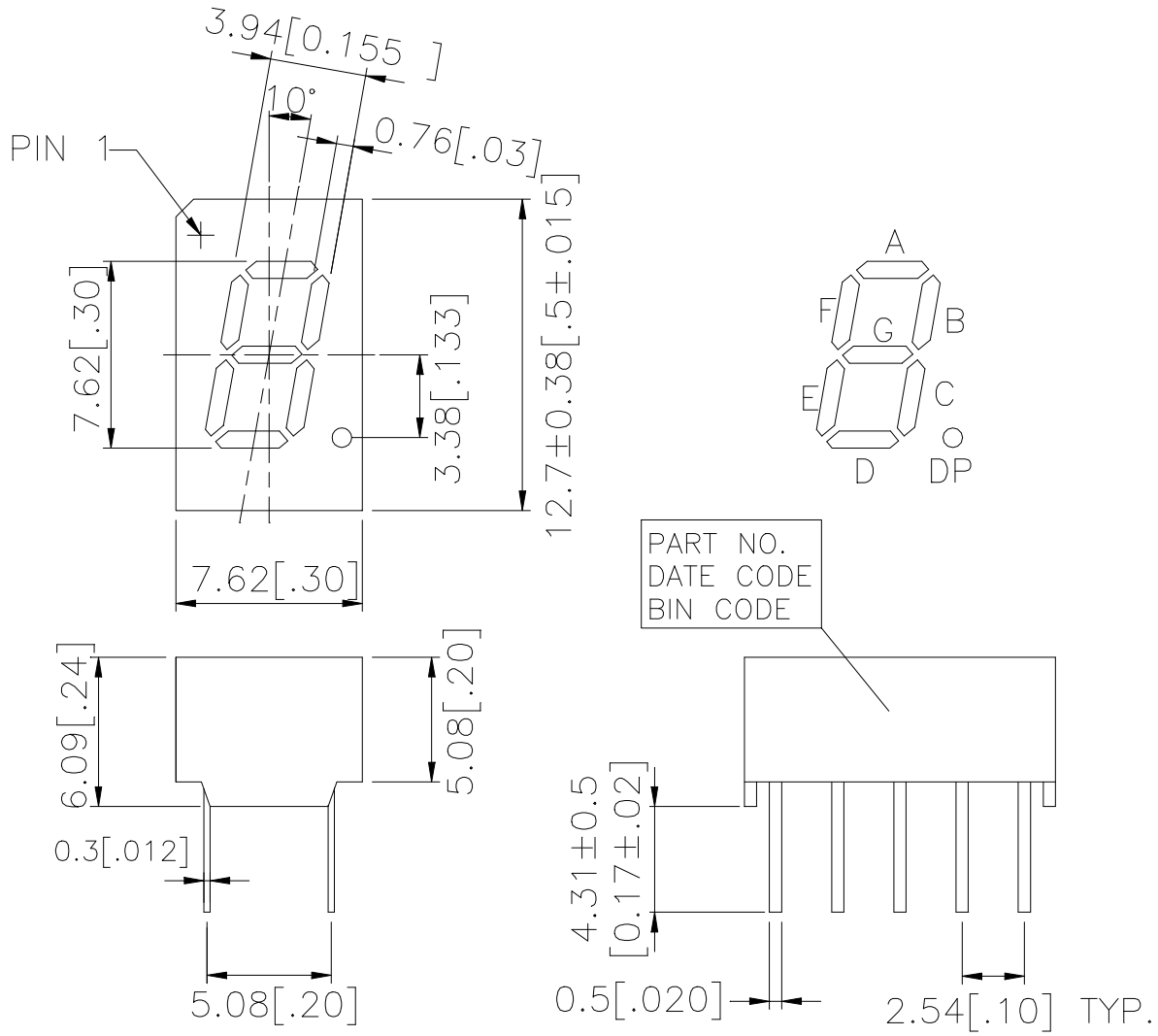
## DESCRIPTION

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

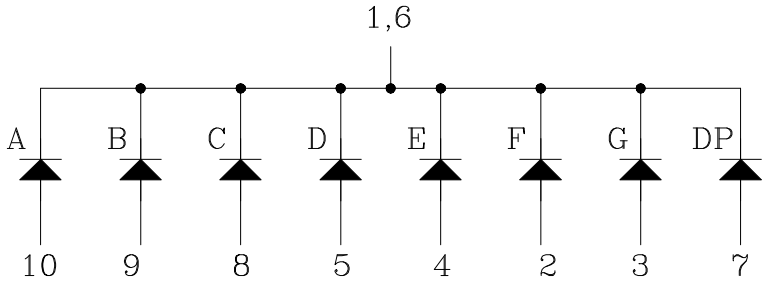
| PART NO. | DESCRIPTION |
|---|---|
| AlInGaP RED | Common Cathode |
| LSHD-7503 | Rt. Hande Decimal |

## PACKAGE DIMENSIONS




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

## INTERNAL CIRCUIT DIAGRAM



## PIN CONNECTION

| No. | CONNECTION |
|---|---|
| 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 ( Frequency 1Khz, 15% duty cycle) | 90 | mA |
| Continuous Forward Current Per Segment | 25 | mA |
| Forward Current Derating from $25^0$C | 0.28 | mA/$^0$C |
| Reverse Voltage Per Segment | 5 | V |
| Operating Temperature Range | -$35^0$C to +$105^0$C | |
| Storage Temperature Range | -$35^0$C to +$105^0$C | |
| Soldering Conditions : 1/16 inch below seating plane for 3 seconds at $260^0$C | | |

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

| PARAMETER | SYMBOL | MIN | TYP | MAX | UNIT | TEST CONDITION |
|---|---|---|---|---|---|---|
| Average Luminous Intensity Per Segment | $I_V$ | 320<br>5400 | 923<br>12000 | | μcd | $I_F$ = 1mA<br>$I_F$ = 10mA |
| Peak Emission Wavelength | λp | | 632 | | nm | $I_F$ = 20mA |
| Spectral Line Half-Width | Δλ | | 20 | | nm | $I_F$ = 20mA |
| Dominant Wavelength | λd | | 624 | | nm | $I_F$ = 20mA |
| Forward Voltage Per Segment | $V_F$ | | 2.1 | 2.6 | V | $I_F$ = 20mA |
| Reverse Current Per Segment | $I_R$ | | | 100 | μA | $V_R$ = 5V |
| Luminous Intensity Matching Ratio | $I_V$-m | | | 2 : 1 | | $I_F$ = 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)

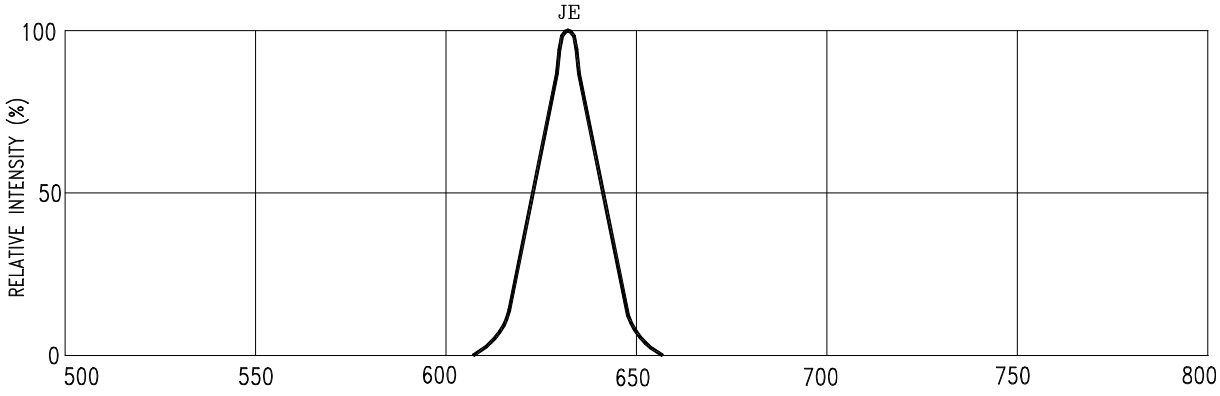


Fig1.Spectral Emission

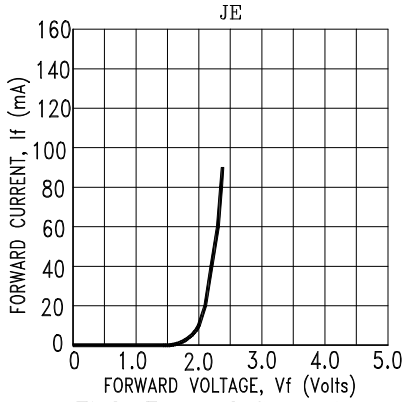


Fig2. Forward Current vs. Forward Voltage

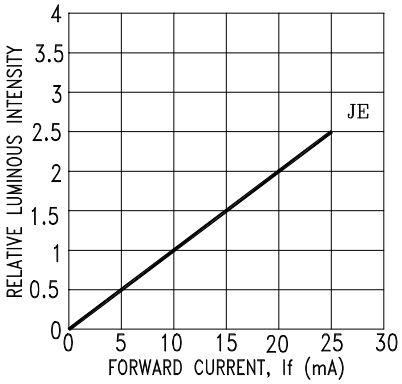


Fig3. Relative Luminous Intensity vs. DC Forward Current

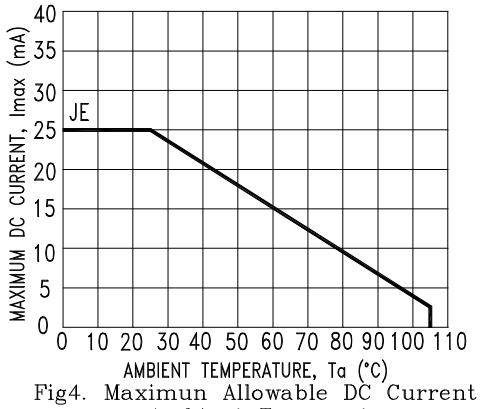


Fig4. Maximun Allowable DC Current vs. Ambient Temperature

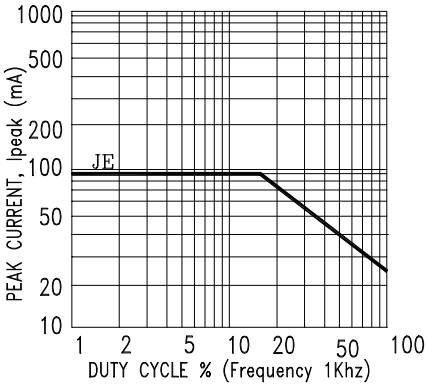


Fig5. Maximum Peak Current vs. Duty Cycle %

NOTE : JE=AlInGaP RED