

## **FEATURES**

- \* 3.0 -INCH ( 76.2 -mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* EXCELLENT CHARACTERS APPEARANCE.
- \* HIGH BRIGHTNESS & HIGH CONTRAST.
- \* WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.
- \* STACKABLE VERTICALLY AND HORIZONTALLY.

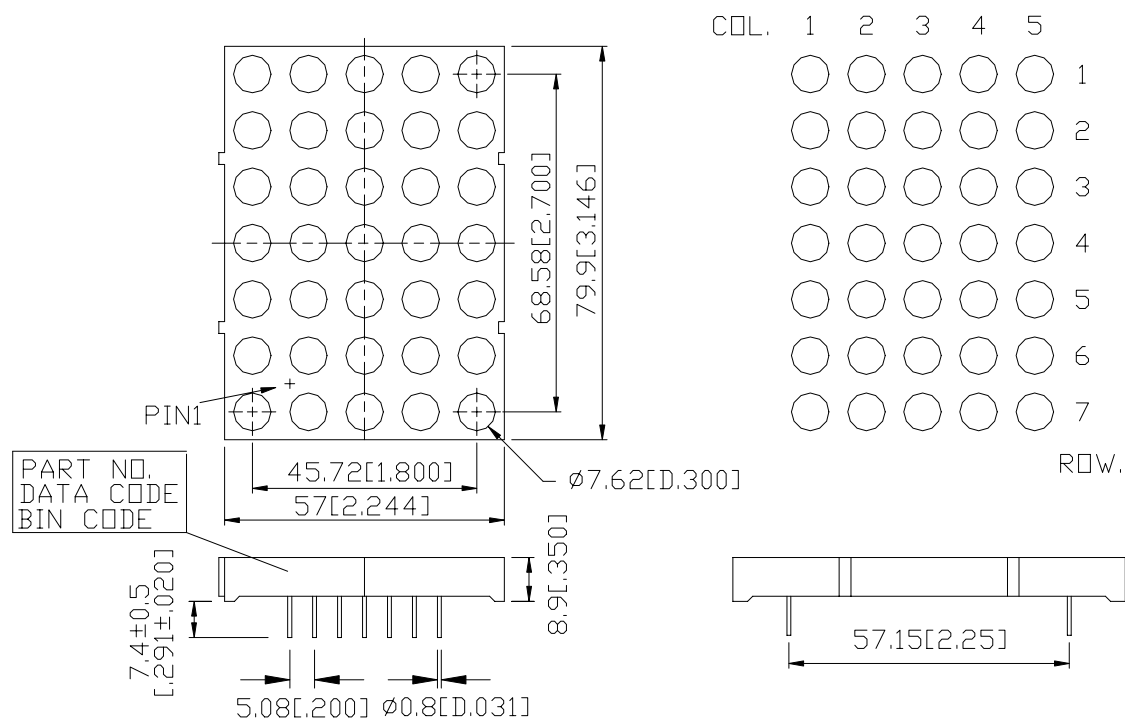
## **DESCRIPTION**

The is a 3.0 -inch ( 76.2 -mm) matrix height  $5 \times 7$  dot-matrix display. This device utilizes ultra red orange LED chips, which are made from GaAsP on a transparent GaP substrate, and has a gray face and white dots.

## **DEVICE**

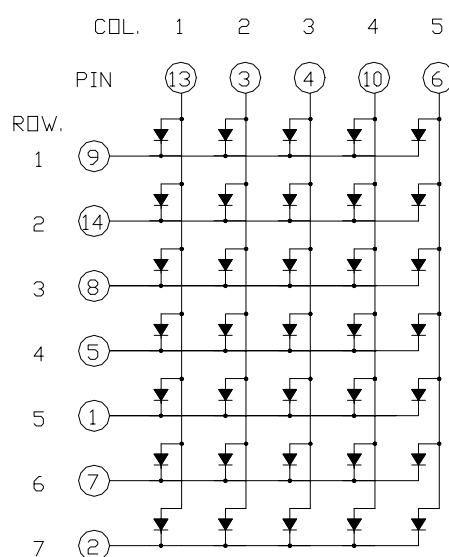
| PART NO.   | DESCRIPTION  |
|------------|--------------|
| RED ORANGE | ANODE COLUMN |
| LTP-3057AE | CATHODE ROW  |

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| <b>No.</b> | <b>CONNECTION</b> |
|------------|-------------------|
| 1          | CATHODE ROW 5     |
| 2          | CATHODE ROW 7     |
| 3          | ANODE COLUMN 2    |
| 4          | ANODE COLUMN 3    |
| 5          | CATHODE ROW 4     |
| 6          | ANODE COLUMN 5    |
| 7          | CATHODE ROW 6     |
| 8          | CATHODE ROW 3     |
| 9          | CATHODE ROW 1     |
| 10         | ANODE COLUMN 4    |
| 11         | NO CONNECTION     |
| 12         | NO CONNECTION     |
| 13         | ANODE COLUMN 1    |
| 14         | CATHODE ROW 2     |

**ABSOLUTE MAXIMUM RATING AT T<sub>A</sub>=25°C**

| PARAMETER                                                                            | MAXIMUM RATING                           | UNIT               |
|--------------------------------------------------------------------------------------|------------------------------------------|--------------------|
| Average Power Dissipation Per Dot                                                    | 64                                       | mW                 |
| Peak Forward Current Per Dot                                                         | 90                                       | mA                 |
| Continuous Forward Current Per Dot                                                   | 11                                       | mA                 |
| Derating Linear From 25 <sup>0</sup> C Per Dot                                       | 0.15                                     | mA/ <sup>0</sup> C |
| Reverse Voltage Per Dot                                                              | 10                                       | 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>    | 3000 | 9600 |      | μcd  | I <sub>F</sub> =80mA, 1/16 Duty |
| Peak Emission Wavelength          | λ <sub>p</sub>    |      | 630  |      | nm   | I <sub>F</sub> =20mA            |
| Spectral Line Half-Width          | Δλ                |      | 40   |      | nm   | I <sub>F</sub> =20mA            |
| Dominant Wavelength               | λ <sub>d</sub>    |      | 621  |      | nm   | I <sub>F</sub> =20mA            |
| Forward Voltage Per Dot           | V <sub>F</sub>    |      | 4    | 5.2  | V    | I <sub>F</sub> =20mA            |
|                                   |                   |      | 5.2  | 6.8  | V    | I <sub>F</sub> =80mA            |
| Reverse Current Per Dot           | I <sub>R</sub>    |      |      | 100  | μA   | V <sub>R</sub> =10V             |
| 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'clariage) eye-response curve.

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

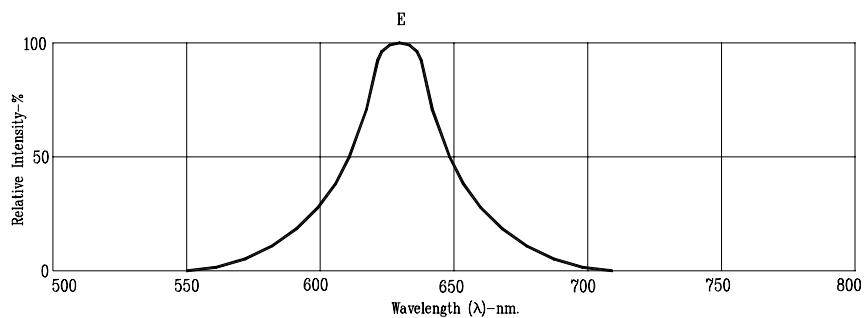


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

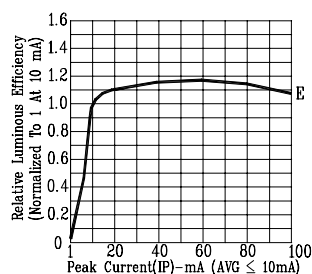


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

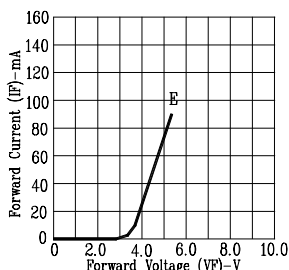


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

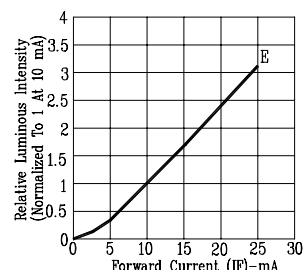


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

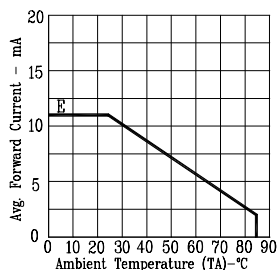


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE

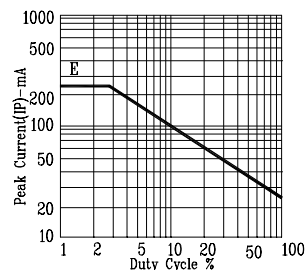


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: E=RED ORANGE