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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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**FEATURES**

- \* 1.85 inch ( 47.0 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* 8x 8 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCII AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.

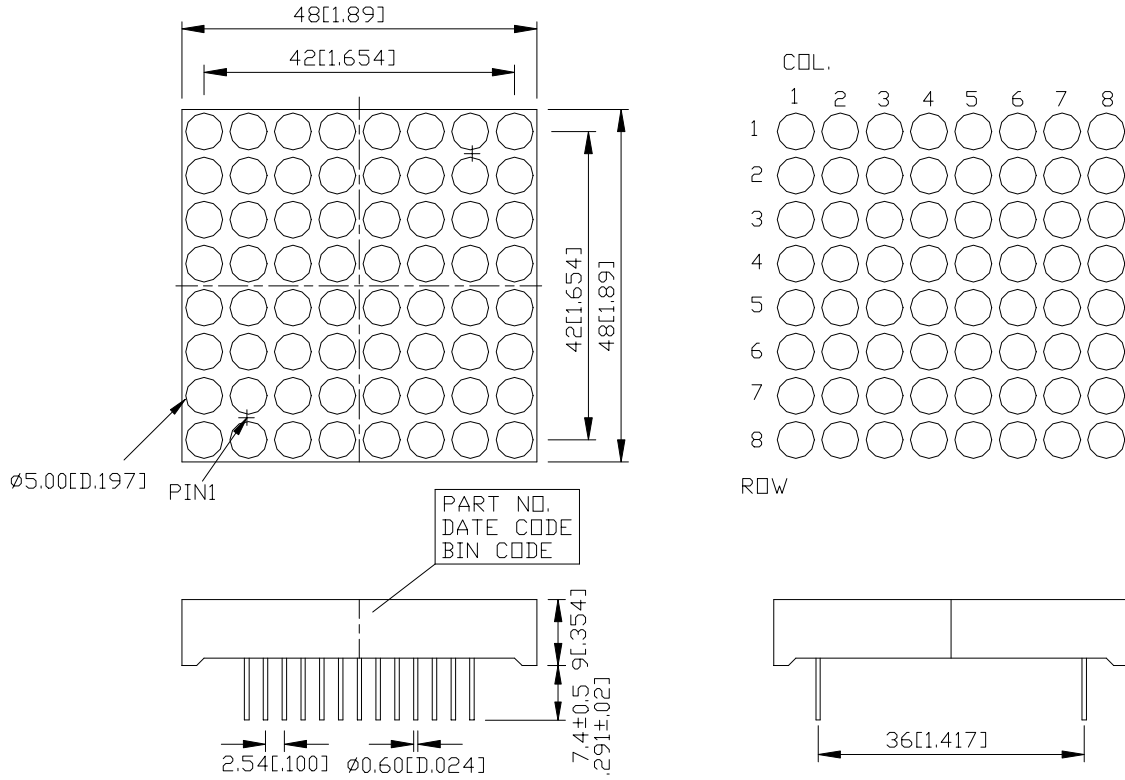
**DESCRIPTION**

The LTP-18088E is a 1.85 inch ( 47.0 mm) matrix height 8 x 8 dot matrix displays. This device utilizes Red Orange LED chips, which are made from GaAsP on GaP substrate, and has a black face and white dot color.

**DEVICE**

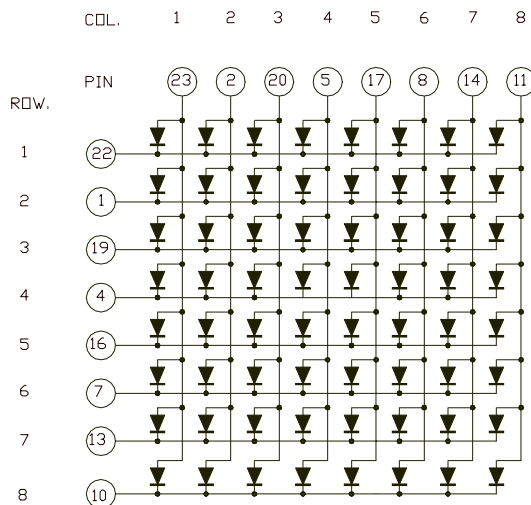
| <b>PART NO.</b> | <b>DESCRIPTION</b> |
|-----------------|--------------------|
| Red Orange      | ANODE COLUMN       |
| LTP-18088E      | CATHODE ROW        |

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| <b>NO</b> | <b>CONNECTION</b> | <b>NO</b> | <b>CONNECTION</b> |
|-----------|-------------------|-----------|-------------------|
| 1         | CATHODE ROW 2     | 13        | CATHODE ROW 7     |
| 2         | ANODE COLUMN 2    | 14        | ANODE COLUMN 7    |
| 3         | NO PIN            | 15        | NO PIN            |
| 4         | CATHODE ROW 4     | 16        | CATHODE ROW 5     |
| 5         | ANODE COLUMN 4    | 17        | ANODE COLUMN 5    |
| 6         | NO PIN            | 18        | NO PIN            |
| 7         | CATHODE ROW 6     | 19        | CATHODE ROW 3     |
| 8         | ANODE COLUMN 6    | 20        | ANODE COLUMN 3    |
| 9         | NO PIN            | 21        | NO PIN            |
| 10        | CATHODE ROW 8     | 22        | CATHODE ROW 1     |
| 11        | ANODE COLUMN 8    | 23        | ANODE COLUMN 1    |
| 12        | NO PIN            | 24        | NO PIN            |

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

| PARAMETER   | MAXIMUM RATING | UNIT  |
|---|----------------|-------|
| Average Power Dissipation Per Dot                                       | 36             | mW    |
| Peak Forward Current Per Dot  | 125            | mA    |
| Continuous Forward Current Per Dot                                      | 15             | mA    |
| Derating Linear From 25°C Per Dot                                       | 0.20           | mA/°C |
| Reverse Voltage Per Dot   | 5              | V     |
| Operating Temperature Range   | -35°C to +85°C |       |
| Storage Temperature Range   | -35°C to +85°C |       |
| Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at 260°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>    | 6300 | 12000 |      | μcd  | I <sub>F</sub> =80mA , 1/16Duty |
| Peak Emission Wavelength          | λ <sub>p</sub>    |      | 660   |      | nm   | I <sub>F</sub> =20mA            |
| Spectral Line Half-Width          | Δλ                |      | 35    |      | nm   | I <sub>F</sub> =20mA            |
| Dominant Wavelength               | λ <sub>d</sub>    |      | 638   |      | nm   | I <sub>F</sub> =20mA            |
| Forward Voltage Per Dot           | V <sub>F</sub>    |      | 1.8   | 2.4  | V    | I <sub>F</sub> =20mA            |
|                                   |                   |      | 2.0   | 2.7  | V    | I <sub>F</sub> =80mA            |
| Reverse Current Per Dot           | 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 (commission Internationale DeL'Eclairage) eye-response curve.

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

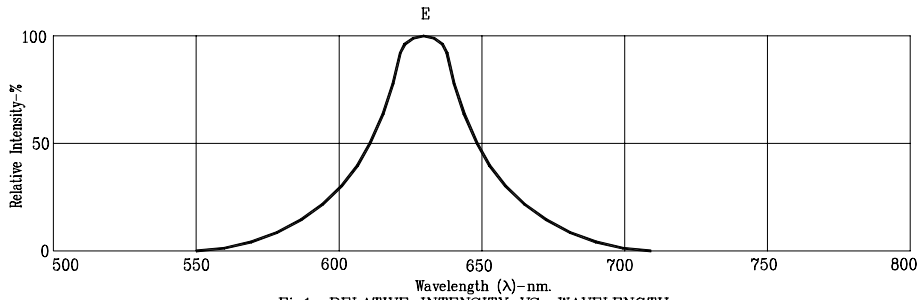


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

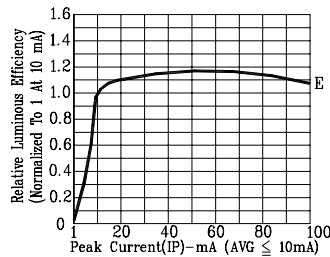


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

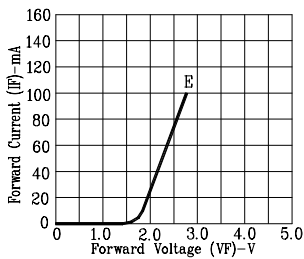


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

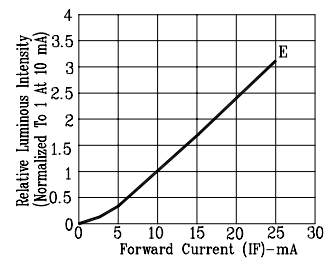


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

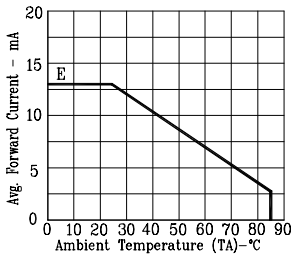


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

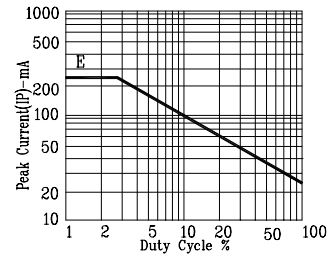


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: E=RED ORANGE