

FEATURES

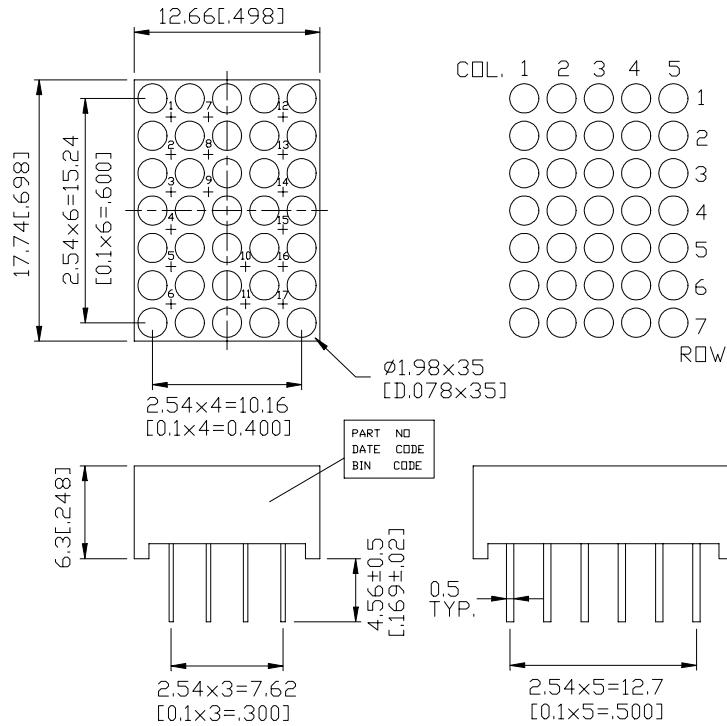
- * 0.7 inch (17.22 mm) MATRIX HEIGHT.
- * LOW POWER REQUIREMENT.
- * SINGLE PLANE, WIDE VIEWING ANGLE.
- * SOLID STATE RELIABILITY.
- * 5×7 ARRAY WITH X-Y SELECT.
- * COMPATIBLE WITH USASCII AND EBCDIC CODES.
- * STACKABLE HORIZONTALLY.
- * CATEGORIZED FOR LUMINOUS INTENSITY.

DESCRIPTION

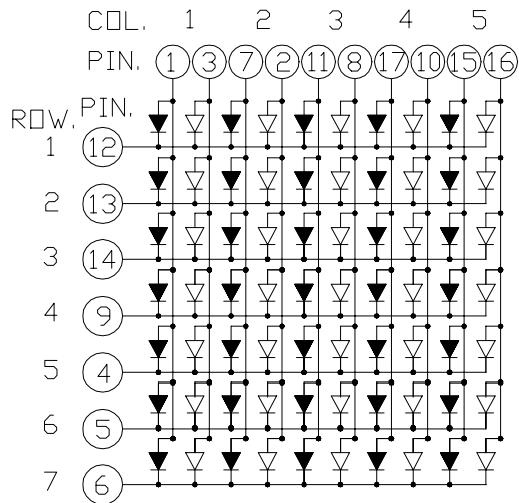
The LTP-7057M is a 0.7 inch (17.22 mm) matrix height 5×7 dot matrix display. This device is multi-color applicable display. The green LED chips, which are made from GaP on a transparent GaP substrate. The red orange LED chips, which are made from GaAsP on a transparent GaP substrate. The device has gray face and white dots.

DEVICE

| PART NO. | DESCRIPTION |
|-----------------|--------------------|
| MULTI-COLOR | Anode Column |
| LTP-7057M | Cathode Row |

PACKAGE DIMENSIONS

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

INTERNAL CIRCUIT DIAGRAM

NOTES: THE "↑" STANDS FOR GREEN CHIPS.
THE "↓" STANDS FOR RED ORANGE CHIPS.

PIN CONNECTION

| No. | CONNECTION |
|-----|---------------------------|
| 1 | ANODE COLUMN 1 RED ORANGE |
| 2 | ANODE COLUMN 2 GREEN |
| 3 | ANODE COLUMN 1 GREEN |
| 4 | CATHODE ROW 5 |
| 5 | CATHODE ROW 6 |
| 6 | CATHODE ROW 7 |
| 7 | ANODE COLUMN 2 RED ORANGE |
| 8 | ANODE COLUMN 3 GREEN |
| 9 | CATHODE ROW 4 |
| 10 | ANODE COLUMN 4 GREEN |
| 11 | ANODE COLUMN 3 RED ORANGE |
| 12 | CATHODE ROW 1 |
| 13 | CATHODE ROW 2 |
| 14 | CATHODE ROW 3 |
| 15 | ANODE COLUMN 5 RED ORANGE |
| 16 | ANODE COLUMN 5 GREEN |
| 17 | ANODE COLUMN 4 RED ORANGE |

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| PARAMETER | GREEN | UNIT |
|--|----------------|-------------|
| Average Power Dissipation Per Dot | 64 | mW |
| Peak Forward Current Per Dot | 90 | mA |
| Average Forward Current Per Dot | 11 | mA |
| Derating Linear From 25°C Per Dot | 0.15 | mA/°C |
| Reverse Voltage Per Segment | 5 | V |
| Operating Temperature Range | -35°C to +85°C | |
| Storage Temperature Range | -35°C to +85°C | |
| Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane. | | |

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

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|-----------------------------------|------------------|-------------|-------------|-------------|-------------|-------------------------------|
| Average Luminous Intensity | I _v | 630 | 2000 | | ucd | I _p =80mA 1/16Duty |
| Peak Emission Wavelength | λ _p | | 565 | | nm | I _F =20mA |
| Spectral Line Half-Width | Δλ | | 30 | | nm | I _F =20mA |
| Dominant Wavelength | λ _d | | 569 | | nm | I _F =20mA |
| Forward Voltage any Dot | V _F | | 2.1 | 2.6 | V | I _F =20mA |
| | | | 3.0 | 3.7 | V | I _F =80mA |
| Reverse Current any Dot | I _R | | | 100 | μA | V _R =5V |
| Luminous Intensity Matching Ratio | I _{v-m} | | | 2:1 | | I _p =80mA 1/16Duty |

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision International De L'Eclairage) eye-response curve.

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| PARAMETER | RED ORANGE | UNIT |
|--|-------------------|-------------|
| Average Power Dissipation Per Dot | 64 | mW |
| Peak Forward Current Per Dot | 90 | mA |
| Average Forward Current Per Dot | 11 | mA |
| Derating Linear From 25°C Per Dot | 0.15 | mA/°C |
| Reverse Voltage Per Segment | 5 | V |
| Operating Temperature Range | -35°C to +85°C | |
| Storage Temperature Range | -35°C to +85°C | |
| Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane. | | |

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

RED ORANGE

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|-----------------------------------|------------------|-------------|-------------|-------------|-------------|-------------------------------|
| Average Luminous Intensity | I _v | 630 | 2000 | | ucd | I _p =80mA 1/16Duty |
| Peak Emission Wavelength | λ _p | | 630 | | nm | I _F =20mA |
| Spectral Line Half-Width | Δλ | | 40 | | nm | I _F =20mA |
| Dominant Wavelength | λ _d | | 621 | | nm | I _F =20mA |
| Forward Voltage any Dot | V _F | | 2.0 | 2.6 | V | I _F =20mA |
| | | | 2.6 | 3.4 | V | I _F =80mA |
| Reverse Current any Dot | I _R | | | 100 | μA | V _R =5V |
| Luminous Intensity Matching Ratio | I _{v-m} | | | 2:1 | | I _p =80mA 1/16Duty |

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision International De L'Eclairage) eye-response curve.

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

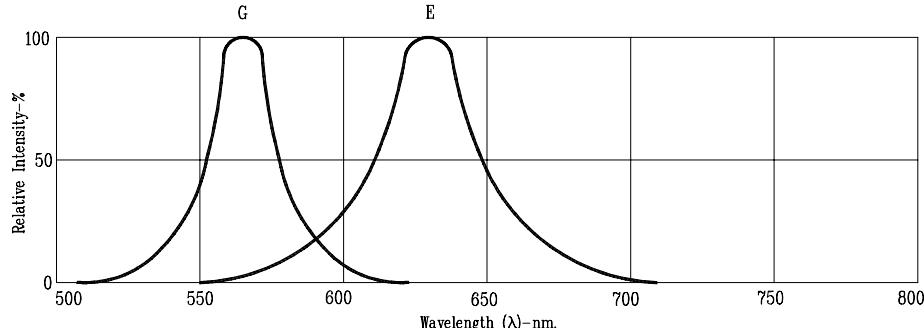
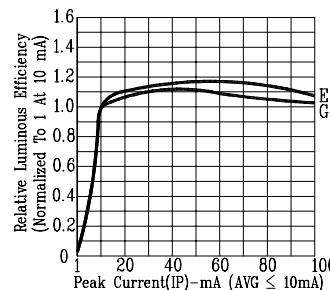
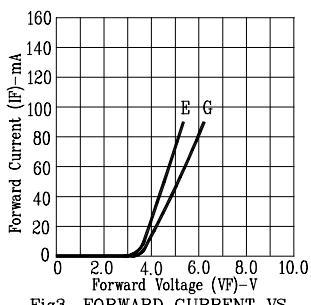
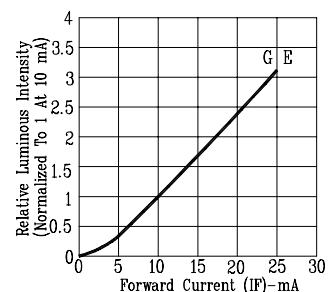
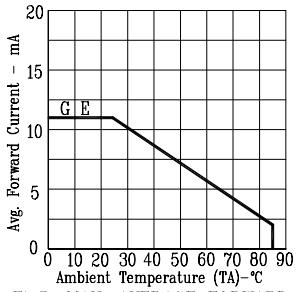
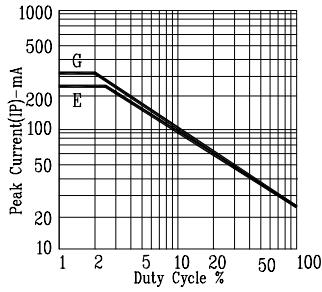


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

Fig2. RELATIVE LUMINOUS EFFICIENCY
(LUMINOUS INTENSITY PER UNIT
CURRENT) VS. PEAK CURRENT
(REFRESH RATE 1KHz)Fig3. FORWARD CURRENT VS.
FORWARD VOLTAGEFig4. RELATIVE LUMINOUS INTENSITY
VS. FORWARD CURRENTFig5. MAX AVERAGE FORWARD
CURRENT VS. AMBIENT
TEMPERATUREFig6. MAX. PEAK CURRENT VS.
DUTY CYCLE %
(REFRESH RATE 1KHz)

NOTE: G=GREEN E=RED ORANGE