LITEON
OPTOELECTRONICS

# LED Display

## Product Data Sheet

## LTP-2257KA

**Spec No.: DS-30-99-083**

Effective Date: 03/29/2000

Revision: -

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

## FEATURES

* 1.97 inch (50.15 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.

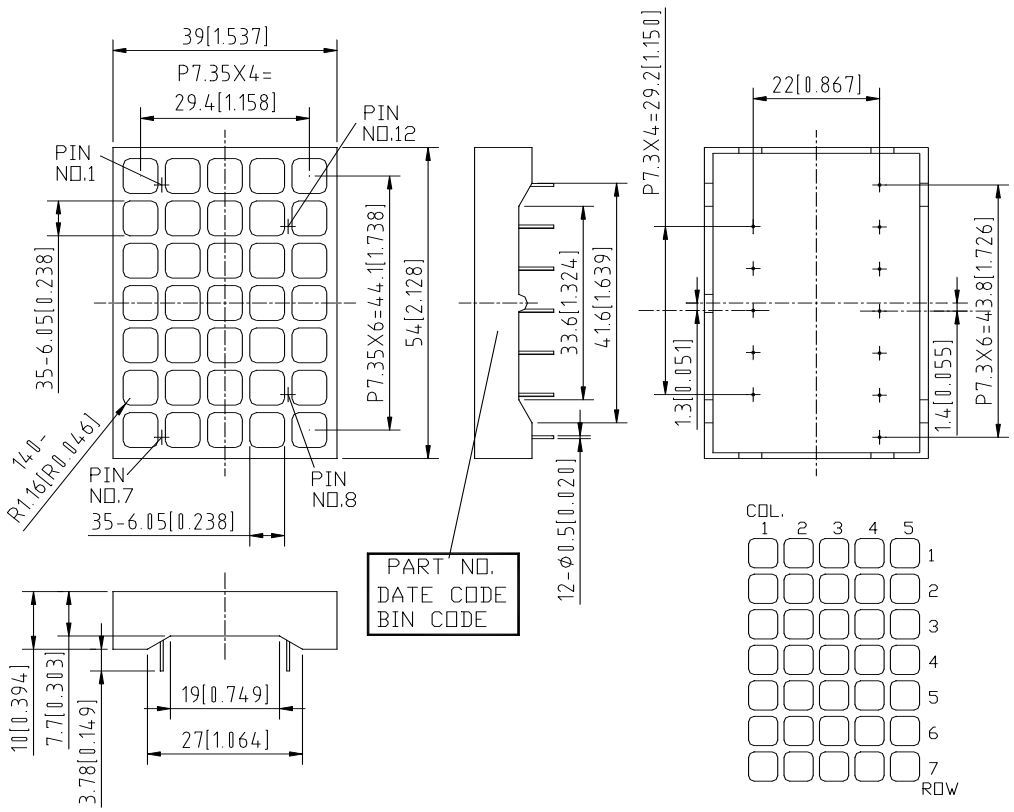
## DESCRIPTION

The LTP-2257KA is a 1.97 inch (50.15 mm) matrix height 5×7 dot matrix display. This device utilizes AlInGaP Red-Orange LED chips, which are made from AlInGaP on GaAs substrate, and has a black face and white dot color.

## DEVICE

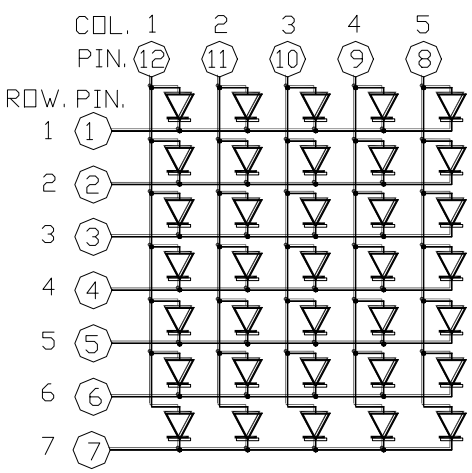
| PART NO. | DESCRIPTION |
|---|---|
| AlInGaP RED ORANGE | ANODE COLUMN |
| LTP-2257KA | CATHODE ROW |

## PACKAGE DIMENSIONS




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

## INTERNAL CIRCUIT DIAGRAM



## PIN CONNECTION

| No. | CONNECTION |
|---|---|
| 1 | CATHODE ROW 1 |
| 2 | CATHODE ROW 2 |
| 3 | CATHODE ROW 3 |
| 4 | CATHODE ROW 4 |
| 5 | CATHODE ROW 5 |
| 6 | CATHODE ROW 6 |
| 7 | CATHODE ROW 7 |
| 8 | ANODE COLUMN 5 |
| 9 | ANODE COLUMN 4 |
| 10 | ANODE COLUMN 3 |
| 11 | ANODE COLUMN 2 |
| 12 | ANODE COLUMN 1 |

## ABSOLUTE MAXIMUM RATING AT Ta=25°C

| PARAMETER | MAXIMUM RATING | UNIT |
|---|---|---|
| Average Power Dissipation Per Dot | 36 | mW |
| Peak Forward Current Per Dot | 100 | mA |
| Average Forward Current Per Dot<br>Derating Linear From 25℃ Per Dot | 13<br>0.17 | mA<br>mA/℃ |
| Reverse Voltage Per Dot | 5 | V |
| Operating Temperature Range | -35℃ to +85℃ | |
| Storage Temperature Range | -35℃ to +85℃ | |
| Solder Temperature: max 260℃ for max 3sec at 1.6mm[1/16inch] below seating plane. | | |

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

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|---|---|---|---|---|---|---|
| Average Luminous Intensity | $I_V$ | 2100 | 5000 | | μcd | $I_p$=32mA<br>1/16 Duty |
| Peak Emission Wavelength | λp | | 621 | | nm | $I_F$=20mA |
| Spectral Line Half-Width | Δλ | | 18 | | nm | $I_F$=20mA |
| Dominant Wavelength | λd | | 615 | | nm | $I_F$=20mA |
| Forward Voltage any Dot | $V_F$ | | 2.05 | 2.6 | V | $I_F$=20mA |
| Reverse Current any Dot | $I_R$ | | | 100 | μA | $V_R$=15V |
| Luminous Intensity Matching Ratio | $I_{V-m}$ | | | 2:1 | | Ip=32mA<br>1/16 Duty |

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)

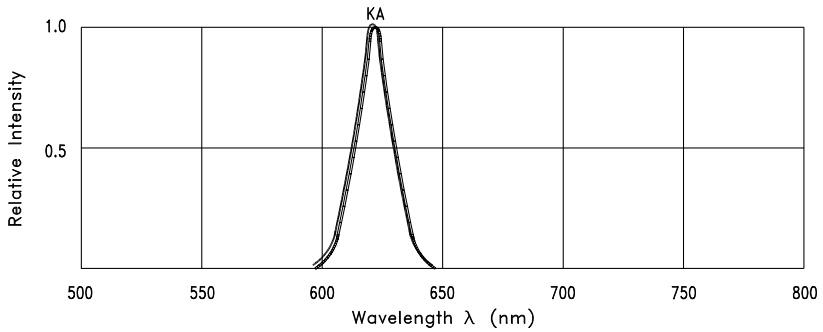



Fig1. Relative Intensity vs. Wavelength

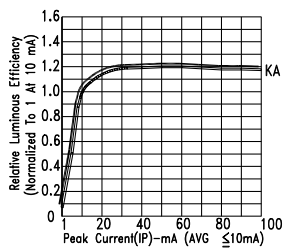



Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

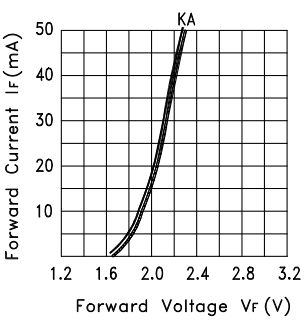



Fig3. Forward Current vs. Forward Voltage

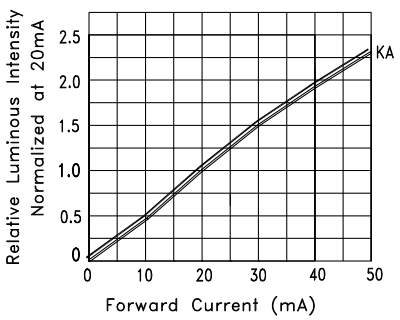



Fig4. Relative Luminous Intensity vs. Forward Current

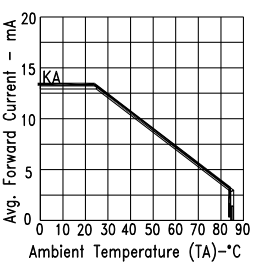



Fig5. Max. Average Forward Current vs. Ambient Temperature.

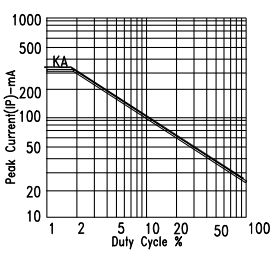



Fig6. Max. Peak Current vs Duty Cycle % (Refresh Rate 1KHz)

NOTE : AlInGaP Red Orange