



# LED Display Product Data Sheet LTP-3157AE-NB

Spec No.: DS-30-99-467

Effective Date: 05/11/2000

Revision: -

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

## **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.

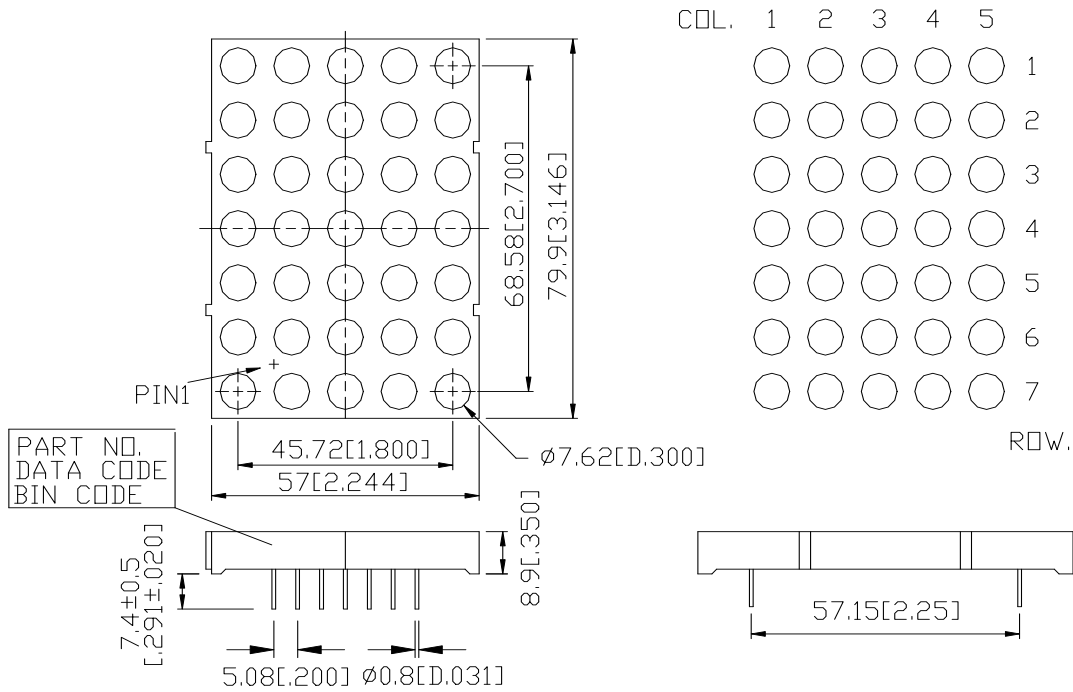
## **DESCRIPTION**

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

## **DEVICE**

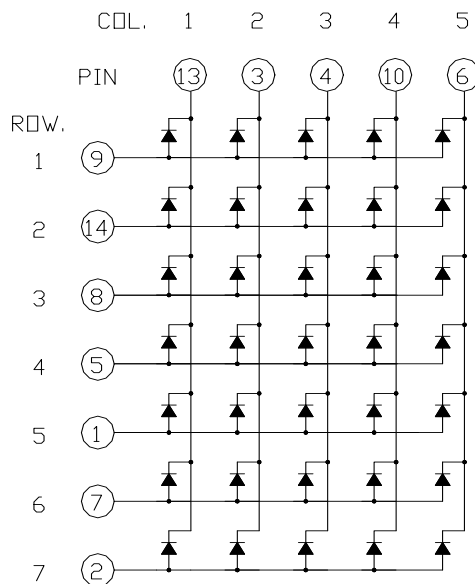
<b>PART NO.</b>	<b>DESCRIPTION</b>
RED ORANGE	CATHODE COLUMN
LTP-3157AE-NB	ANODE ROW

## 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	ANODE ROW 5
2	ANODE ROW 7
3	CATHODE COLUMN 2
4	CATHODE COLUMN 3
5	ANODE ROW 4
6	CATHODE COLUMN 5
7	ANODE ROW 6
8	ANODE ROW 3
9	ANODE ROW 1
10	CATHODE COLUMN 4
11	NO CONNECTION
12	NO CONNECTION
13	CATHODE COLUMN 1
14	ANODE 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°C Per Dot	0.15	mA/°C
Reverse Voltage Per Dot	10	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>	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>		4.0	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 (commission international DE L'clairage) eye-response curve.

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

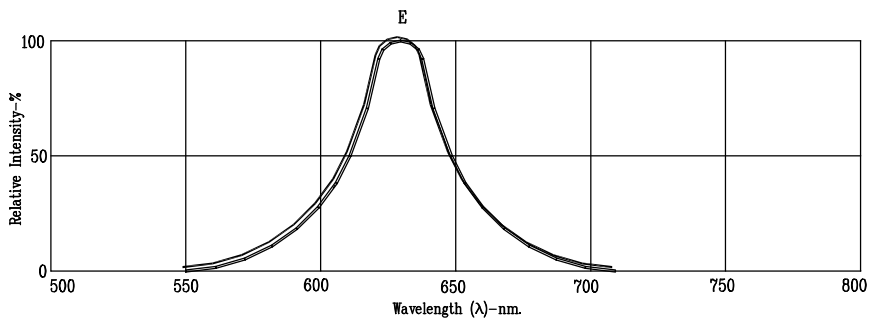


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

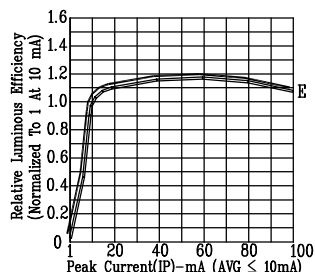


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

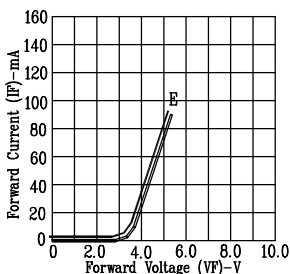


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

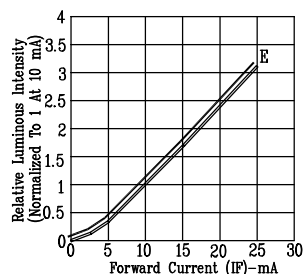


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

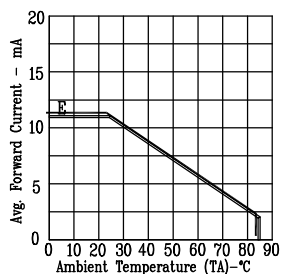


Fig5. MAX AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

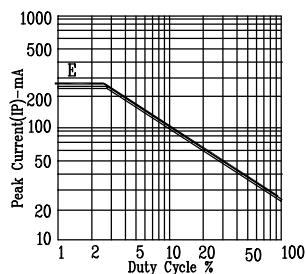


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: E=RED ORANGE