



# **LED Display**

## **Product Data Sheet**

### **LTP-4157AHR**

Spec No.: DS-30-94-191

Effective Date: 12/21/2000

Revision: -

**LITE-ON DCC**

**RELEASE**

**BNS-OD-FC001/A4**

**FEATURES**

- \* 4 inch (101.6 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE
- \* SOLID STATE RELIABILITY.
- \* 5x7 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCLL AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.

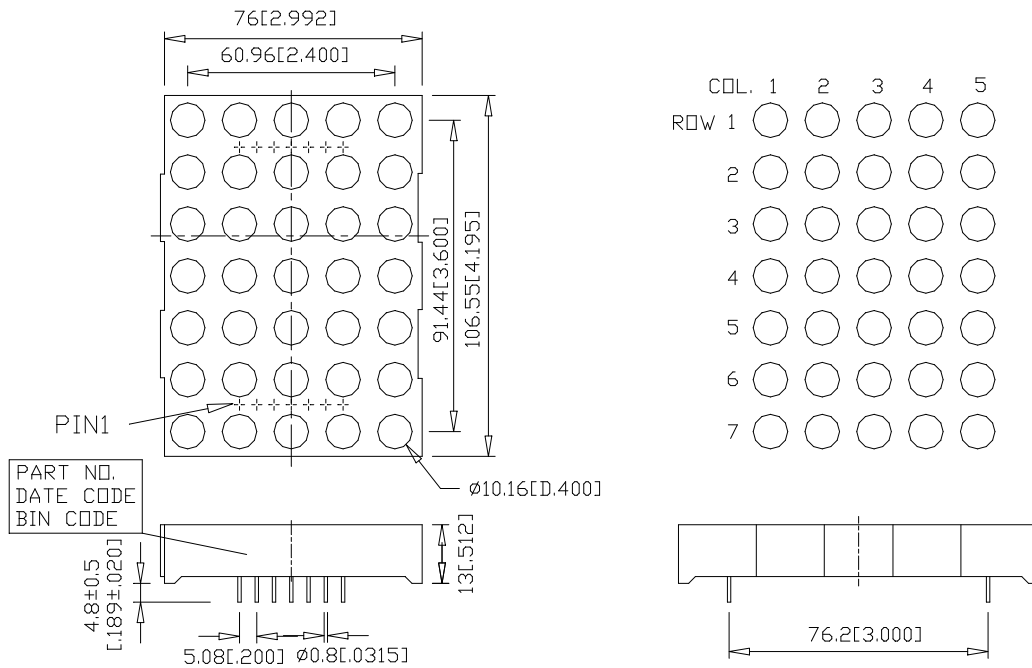
**DESCRIPTION**

The LTP-4157AHR is a 4 inch (101.6 mm) matrix height 5x7 dot matrix display. This device utilizes high efficiency red LED chips, which are made from GaAsP on a transparent GaP substrate, and has a red face and red segments.

**DEVICE**

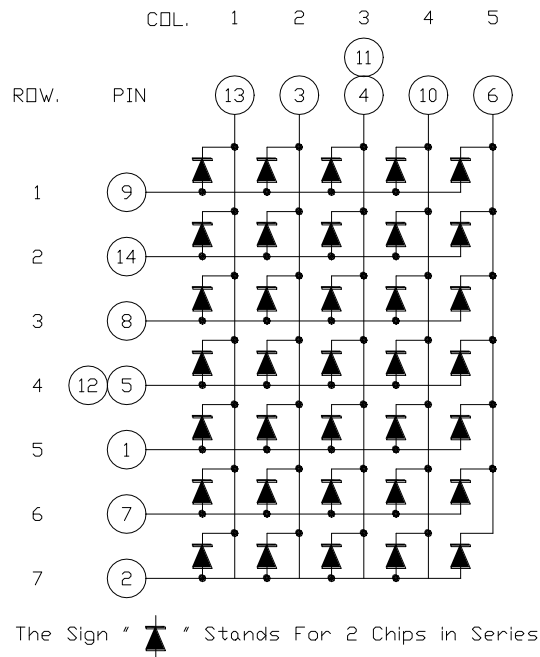
<b>PART NO.</b>	<b>DESCRIPTION</b>
Hi-Eff. Red	Cathode Column
LTP-4157AHR	Anode Row

## 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	CATHODE COLUMN 3
12	ANODE ROW 4
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
Average 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>	5100	9600		μcd	I <sub>p</sub> =80mA 1/16DUTY
Peak Emission Wavelength	λ <sub>p</sub>		635		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		40		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		623		nm	I <sub>F</sub> =20mA
Forward Voltage any 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 any 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>p</sub> =80mA 1/16DUTY

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)

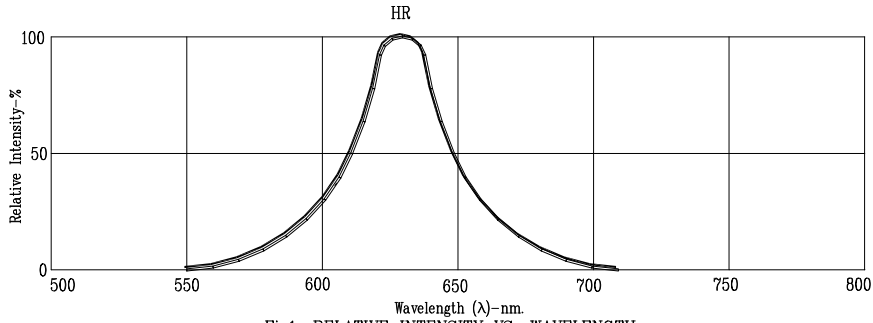


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

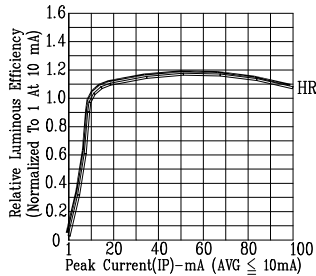


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

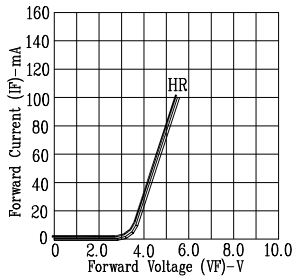


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

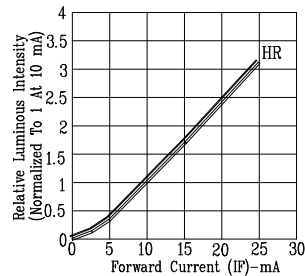


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

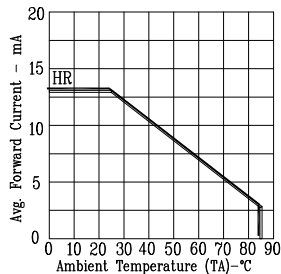


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

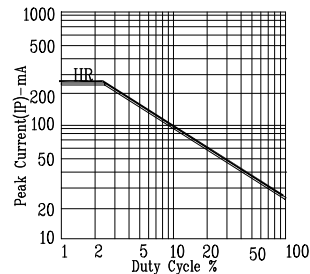


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: HR=HI-EFF. RED