



# **LED Display**

## **Product Data Sheet**

### **LTP-2B88AE**

Spec No.: DS-30-95-009

Effective Date: 12/21/2000

Revision: -

**LITE-ON DCC**

**RELEASE**

**BNS-OD-FC001/A4**

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**FEATURES**

- \* 2.3 inch (58.42 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE
- \* SOLID STATE RELIABILITY.
- \* 8x8 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCLL AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.

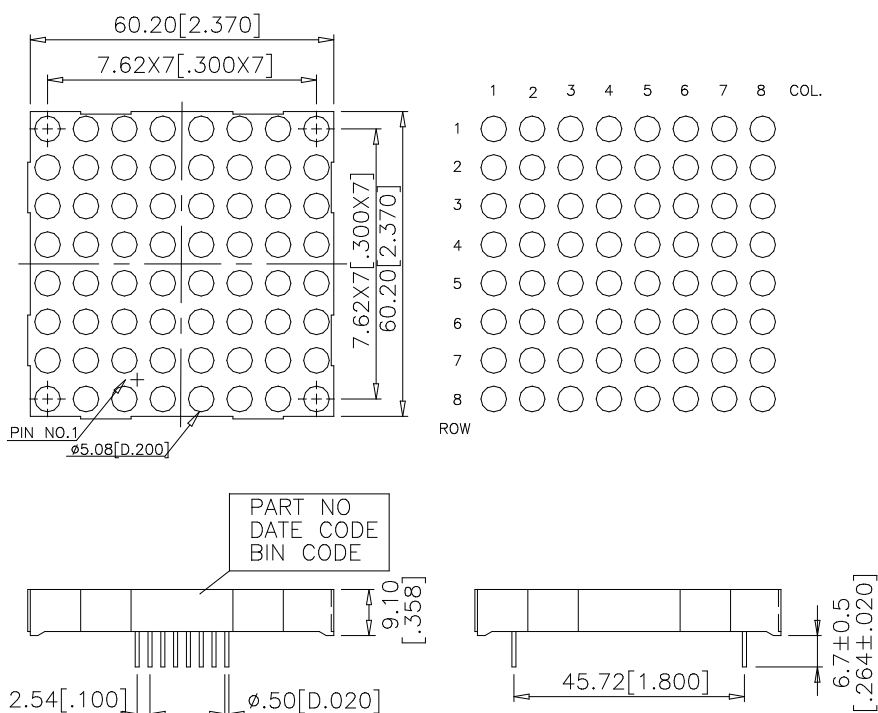
**DESCRIPTION**

The LTP-2B88AE is a 2.3 inch (58.42 mm) matrix height 8x8 dot matrix display. This device utilizes red orange LED chips, which are made from GaAsP on a transparent GaP substrate, and has a gray face and white dot color.

**DEVICE**

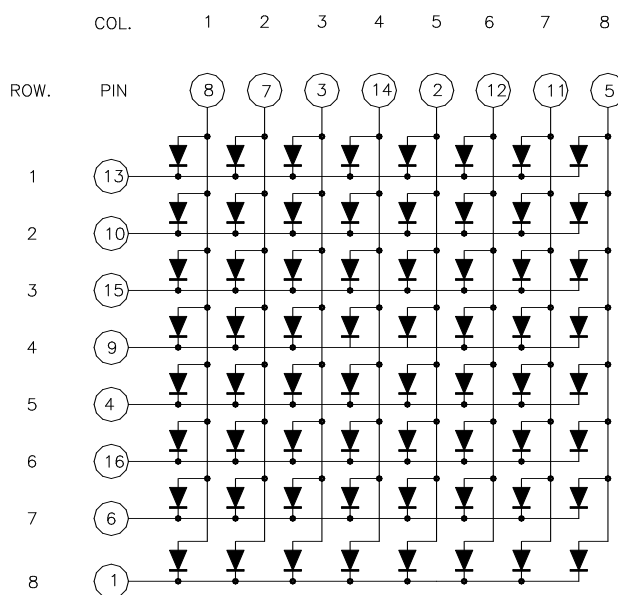
PART NO.	DESCRIPTION
Red Orange	Anode Column
LTP-2B88AE	Cathode Row

## 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	CATHODE ROW 8
2	ANODE COL. 5
3	ANODE COL. 3
4	CATHODE ROW 5
5	ANODE COL. 8
6	CATHODE ROW 7
7	ANODE COL. 2
8	ANODE COL. 1
9	CATHODE ROW 4
10	CATHODE ROW 2
11	ANODE COL. 7
12	ANODE COL. 6
13	CATHODE ROW 1
14	ANODE COL. 4
15	CATHODE ROW 3
16	CATHODE ROW 6

**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	100	mA
Average Forward Current Per Dot	13	mA
Derating Linear From 25 <sup>0</sup> C Per Dot	0.17	mA/ <sup>0</sup> C
Reverse Voltage Per Dot	5	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>	1780	4800		μcd	I <sub>p</sub> =80mA 1/16DUTY
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 any Dot	V <sub>F</sub>		2	2.6	V	I <sub>F</sub> =20mA
			2.6	3.4	V	I <sub>F</sub> =80mA
Reverse Current any 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>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)

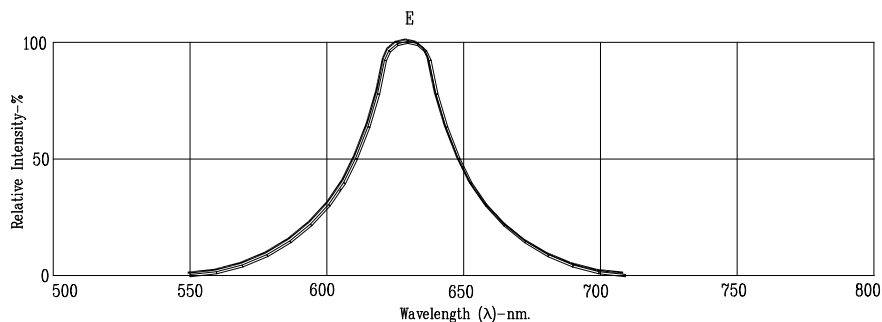


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

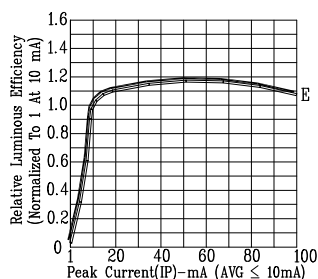


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

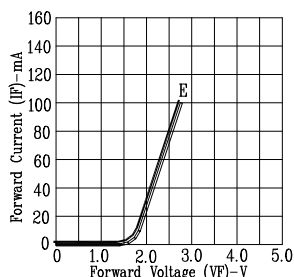


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

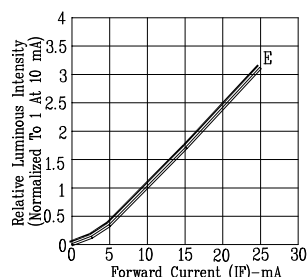


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

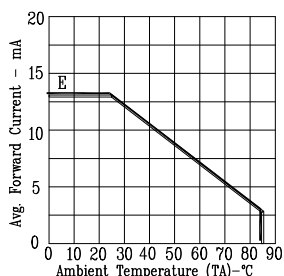


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

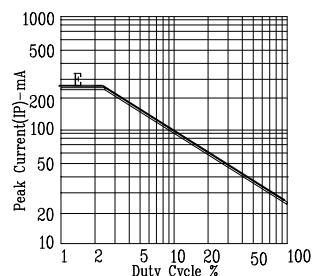


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: E=RED ORANGE