



# LED Display Product Data Sheet LTP-2344E

Spec No.: DS-30-97-261

Effective Date: 12/12/2000

Revision: -

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

**FEATURES**

- \* 1.854 INCH (47.1mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE
- \* SOLID STATE RELIABILITY.
- \* 4x4 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCLL AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.

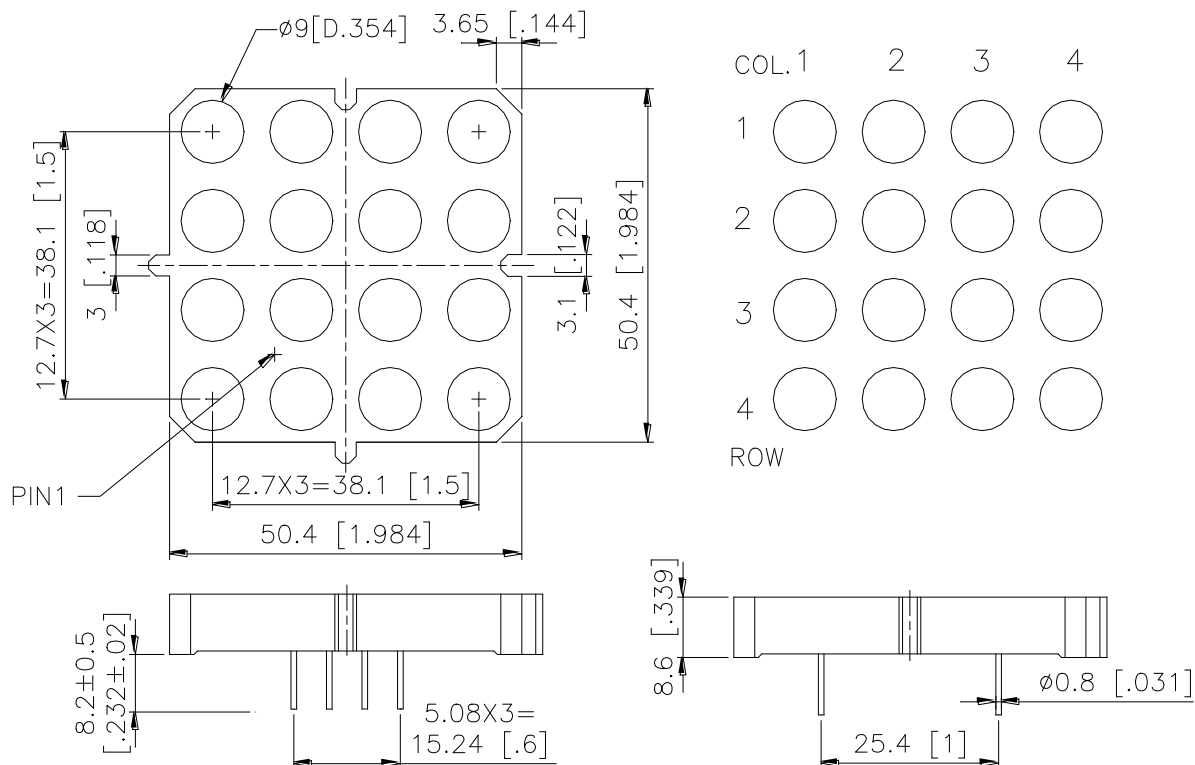
**DESCRIPTION**

The LTP-2344E is a 1.854inch (47.1mm) matrix height 4x4 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**

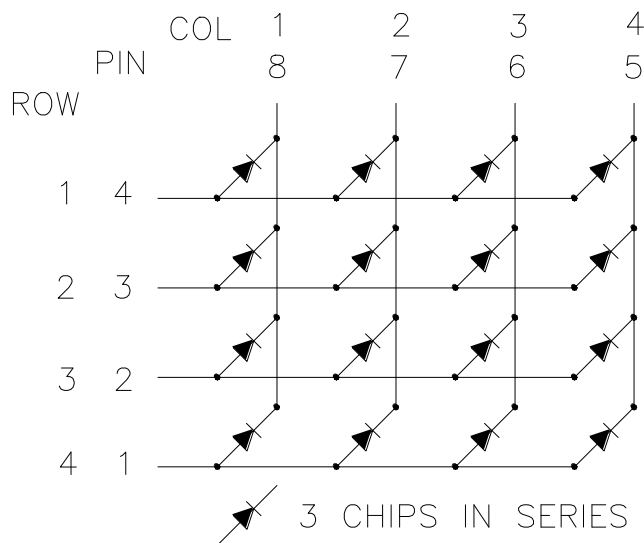
<b>PART NO.</b>	<b>DESCRIPTION</b>
Red Orange	Cathode Column
LTP-2344E	Anode Row

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

NO.	CONNECTION		
1	ANODE	ROW	4
2	ANODE	ROW	3
3	ANODE	ROW	2
4	ANODE	ROW	1
5	CATHODE	COLUMN	4
6	CATHODE	COLUMN	3
7	CATHODE	COLUMN	2
8	CATHODE	COLUMN	1

**ABSOLUTE MAXIMUM RATING AT T<sub>A</sub>=25°C**

PARAMETER	MAXIMUM RATING	UNIT
Average Power Dissipation Per Dot	96	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	15	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>	5000	11000		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>		6.0	7.8	V	I <sub>F</sub> =20mA
			7.8	10.2	V	I <sub>F</sub> =80mA
Reverse Current any Dot	I <sub>R</sub>			100	μA	V <sub>R</sub> =15V
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)

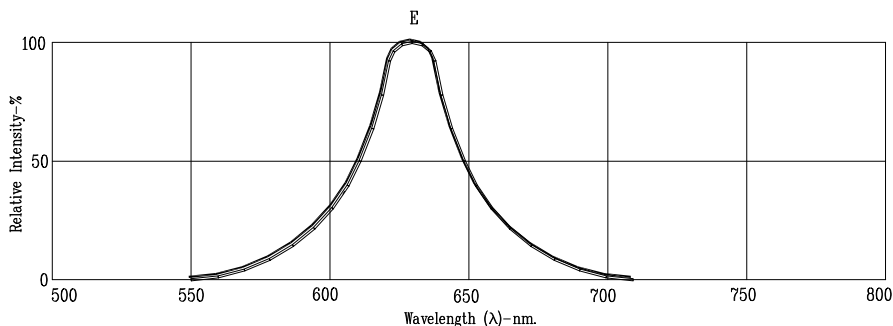


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

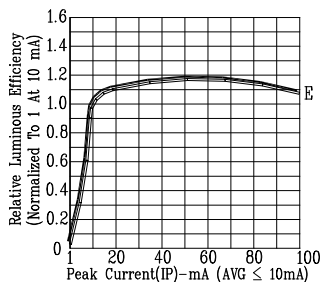


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

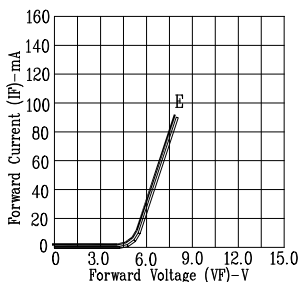


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

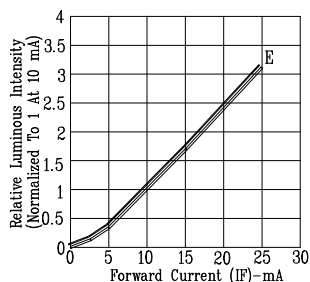


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

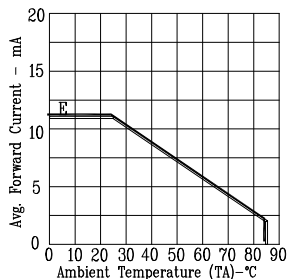


Fig5. MAX AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE

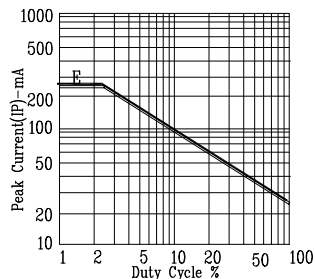


Fig6. MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: E=RED ORANGE