



# LED Display Product Data Sheet LTP-12788E

Spec No.: DS30-2002-118

Effective Date: 05/13/2002

Revision: -

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

**FEATURES**

- \* 1.22 inch (31.0 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* 8x8 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCII AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.

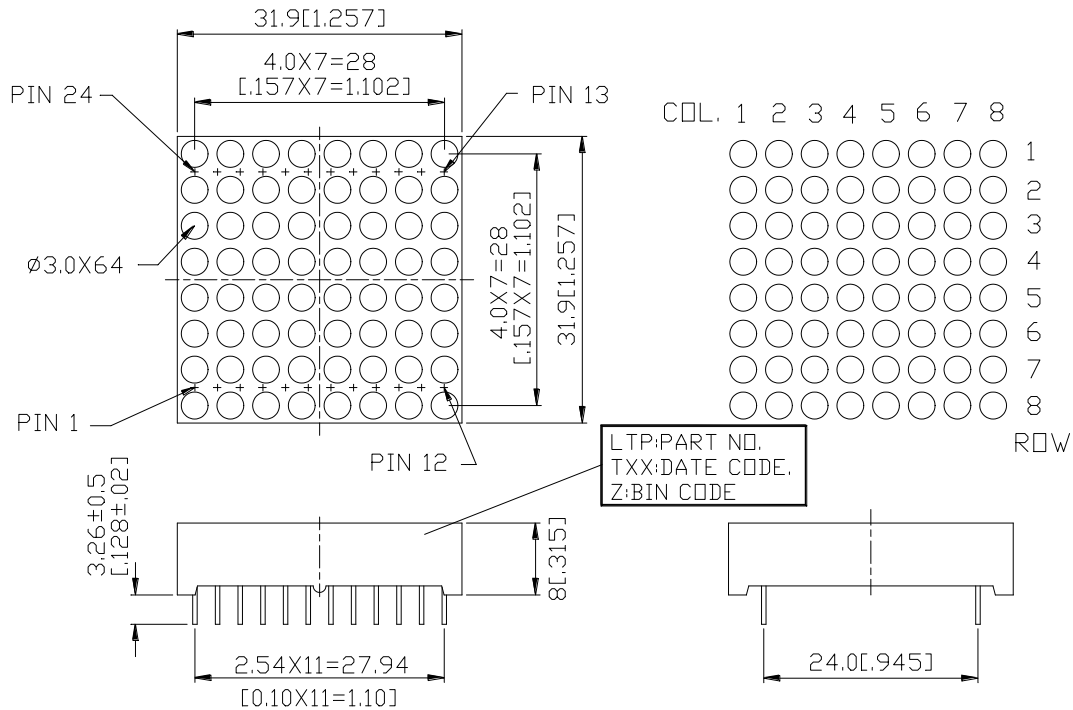
**DESCRIPTION**

The LTP-12788E is a 1.22 inch (31.0 mm) matrix height 8x8 dot matrix display. The LED Red Orange chips, which are made from GaAsP on GaP substrate. The device has black face and white dots.

**DEVICE.**

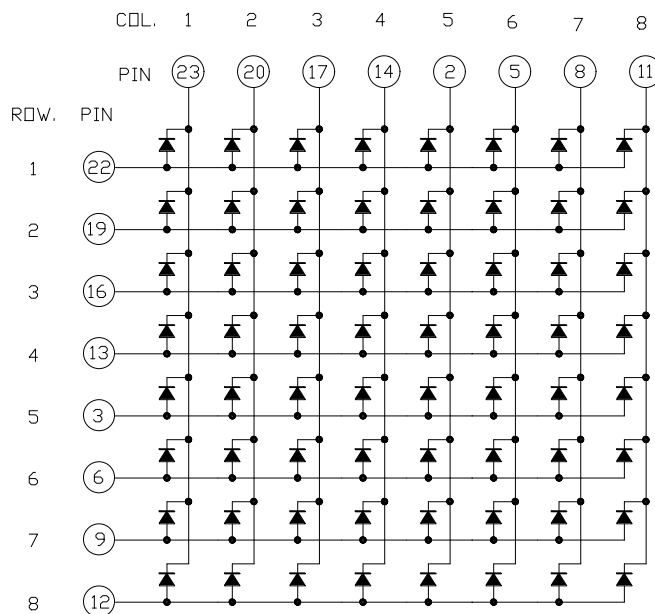
<b>PART NO.</b>	<b>DESCRIPTION</b>
Red Orange	ANODE ROW
LTP-12788E	CATHODE COLUMN

## 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	NO	CONNECTION
1	NO CONNECT	13	ANODE ROW 4
2	CATHODE COLUMN 5	14	CATHODE COLUMN 4
3	ANODE ROW 5	15	NO CONNECT
4	NO CONNECT	16	ANODE ROW 3
5	CATHODE COLUMN 6	17	CATHODE COLUMN 3
6	ANODE ROW 6	18	NO CONNECT
7	NO CONNECT	19	ANODE ROW 2
8	CATHODE COLUMN 7	20	CATHODE COLUMN 2
9	ANODE ROW 7	21	NO CONNECT
10	NO CONNECT	22	ANODE ROW 1
11	CATHODE COLUMN 8	23	CATHODE COLUMN 1
12	ANODE ROW 8	24	NO CONNECT

**ABSOLUTE MAXIMUM RATING AT Ta=25°C**

PARAMETER	AlInGaP HYPER RED	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°C Per Dot	0.17	mA/°C
Reverse Voltage Per Dot	5	V
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Temperature: max 260°C 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 <sub>v</sub>	1500	4000		μcd	I <sub>p</sub> =32mA 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>		2.1	2.6	V	I <sub>F</sub> =20mA
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> =32mA 1/16Duty

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

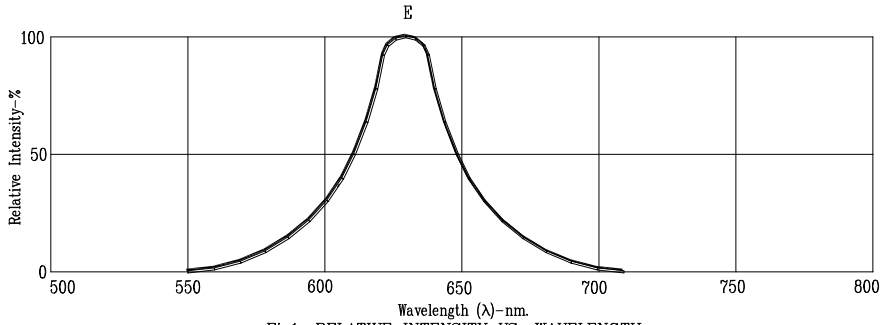


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

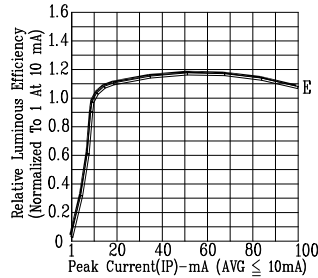


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

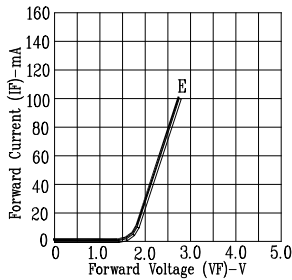


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

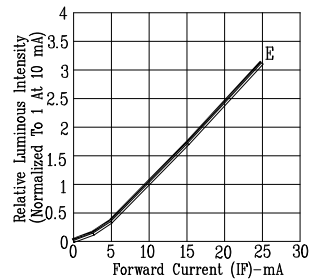


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

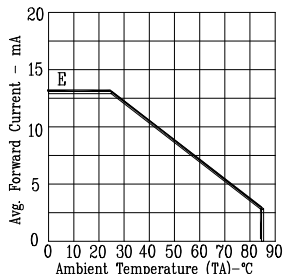


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

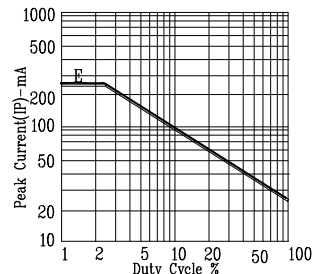


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: E=RED ORANGE