



LED Display Product Data Sheet LTP-2144A2-NB

Spec No.: DS30-2000-427

Effective Date: 01/09/2001

Revision: -

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

FEATURES

- * 2 inch (47.1 mm) 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.

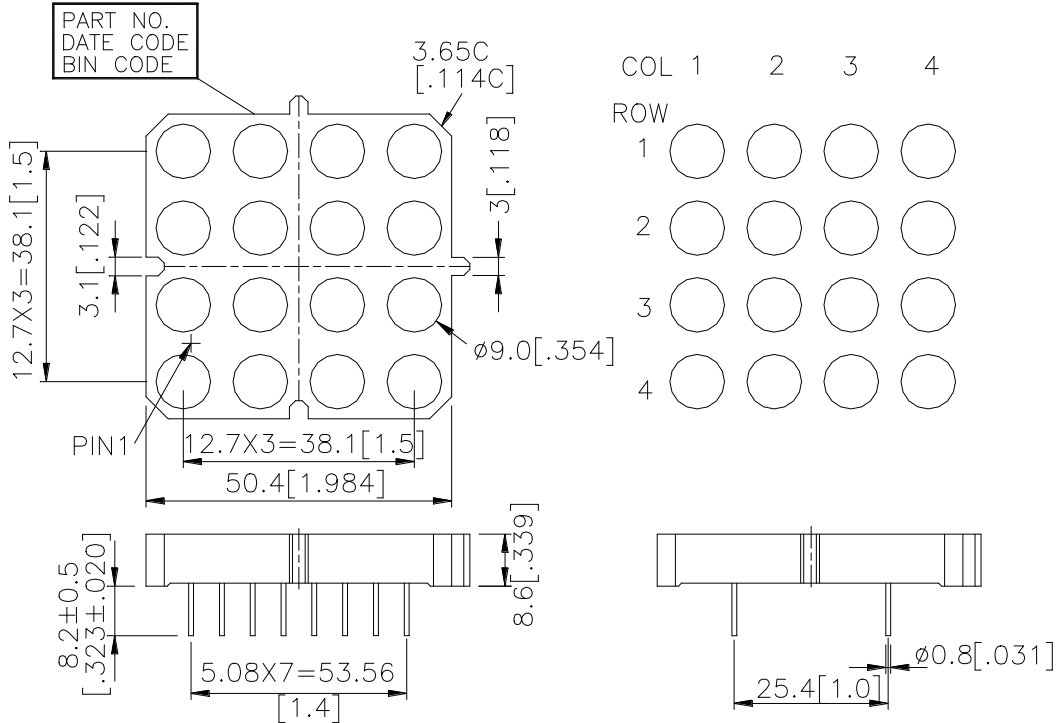
DESCRIPTION

The LTP-2144A2-NB is a 2 inch (47.1 mm) matrix height 4x4 dot matrix display. This device utilizes red orange LED chips, which are made from GaAsP on a transparent GaP substrate, the device utilizes green LED chips, which are made from GaP on a transparent GaP substrate, and has a black face and white dots.

DEVICE

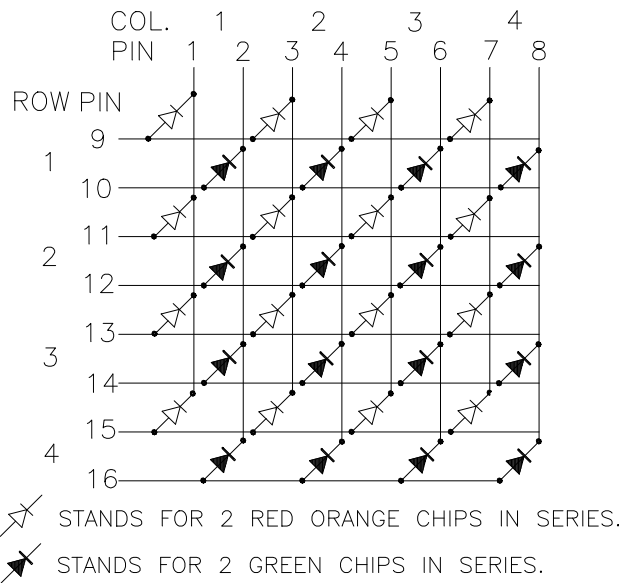
PART NO.	DESCRIPTION
Red Orange & Green	Cathode Column
LTP-2144A2-NB	Anode Row

PACKAGE DIMENSIONS



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

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

No.	CONNECTION
1	CATHODE COL. 1 (RED ORANGE)
2	CATHODE COL. 1 (GREEN)
3	CATHODE COL. 2 (RED ORANGE)
4	CATHODE COL. 2 (GREEN)
5	CATHODE COL. 3 (RED ORANGE)
6	CATHODE COL. 3 (GREEN)
7	CATHODE COL. 4 (RED ORANGE)
8	CATHODE COL. 4 (GREEN)
9	ANODE ROW 1 (RED ORANGE)
10	ANODE ROW 1 (GREEN)
11	ANODE ROW 2 (RED ORANGE)
12	ANODE ROW 2 (GREEN)
13	ANODE ROW 3 (RED ORANGE)
14	ANODE ROW 3 (GREEN)
15	ANODE ROW 4 (RED ORANGE)
16	ANODE ROW 4 (GREEN)

ABSOLUTE MAXIMUM RATING AT T_A=25°C

PARAMETER	RED ORANGE	GREEN	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°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_A=25°C

GREEN

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	2600	9600		μcd	I _p =80mA 1/16DUTY
Peak Emission Wavelength	λ _p		565		nm	I _F =20mA
Spectral Line Half-Width	Δλ		30		nm	I _F =20mA
Dominant Wavelength	λ _d		569		nm	I _F =20mA
Forward Voltage any Dot	V _F		4.2	5.2	V	I _F =20mA
			6	7.4	V	I _F =80mA
Reverse Current any Dot	I _R			100	μA	V _R =10V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 1/16DUTY

RED ORANGE

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	2600	9600		μcd	I _p =80mA 1/16DUTY
Peak Emission Wavelength	λ _p		630		nm	I _F =20mA
Spectral Line Half-Width	Δλ		40		nm	I _F =20mA
Dominant Wavelength	λ _d		621		nm	I _F =20mA
Forward Voltage any Dot	V _F		4	5.2	V	I _F =20mA
			5.2	6.8	V	I _F =80mA
Reverse Current any Dot	I _R			100	μA	V _R =10V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 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)

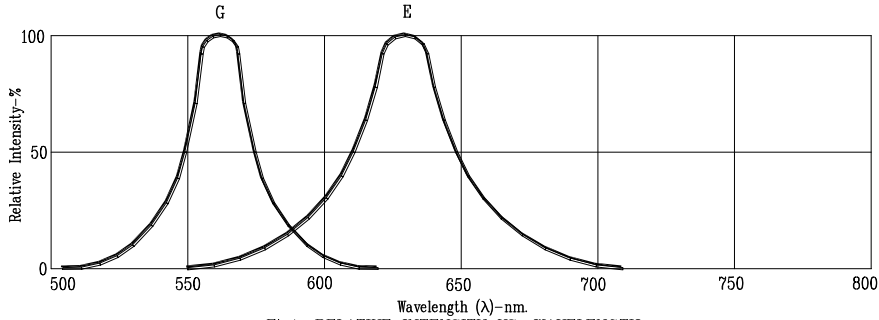


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

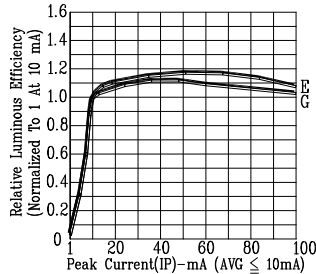


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

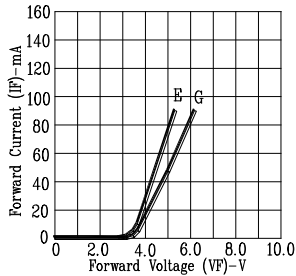


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

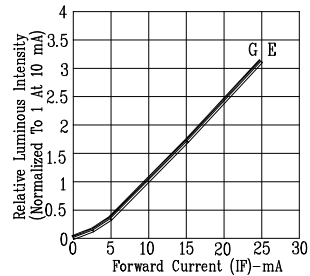


Fig4. RELATIVE LUMINOUS INTENSITY (NORMALIZED TO 1 AT 10 mA) VS. FORWARD CURRENT

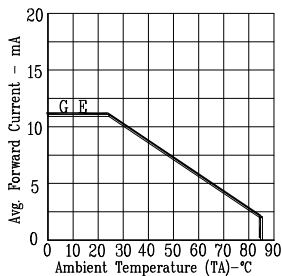


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

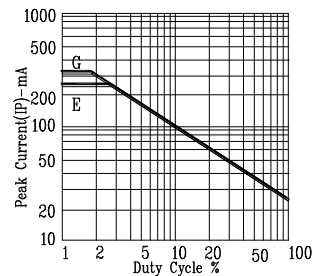


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN & E=RED ORANGE