



# LED Display Product Data Sheet LTP-2N188AKY

Spec No.: DS30-2002-079

Effective Date: 03/28/2002

Revision: -

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

## **FEATURE**

- \* 2.3 INCH (58.42mm ) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* EXCELLENT CHARACTERS APPEARANCE .
- \* HIGH BRIGHTNESS & HIGH CONTRAST .
- \* WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY .

## **DESCRIPTION**

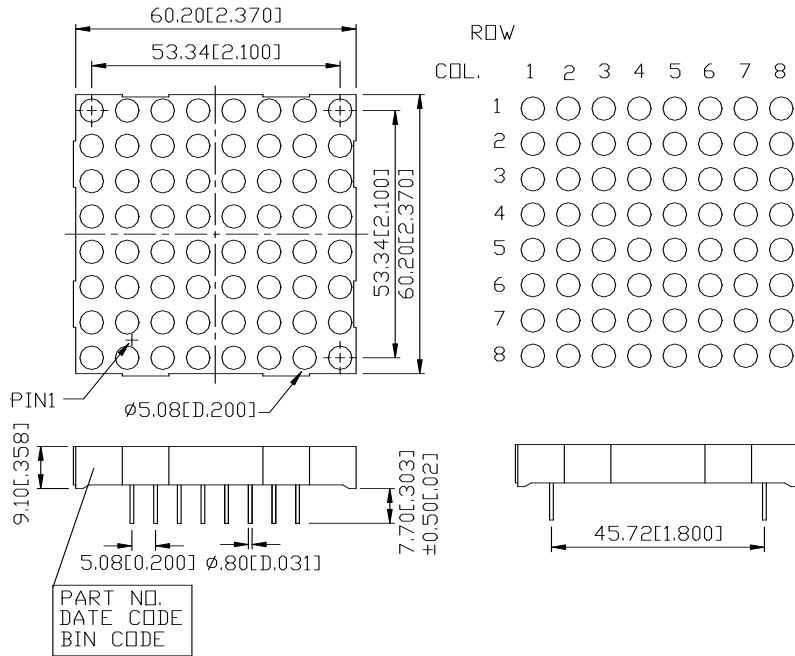
The LTP-2N188AKY is a 2.3 inch ( 58.42 mm) matrix height 8x8 dot matrix displays. This device utilizes AllnGaP Amber yellow LED chips which are made from AllnGaP on a non-transparent GaAs substrate, with a gray face and white dot color.

## **DEVICE**

PART NO.	DESCRIPTION
AllnGaP Amber YELLOW	ANODE ROW
LTP-2N188AKY	CATHODE COLUMN

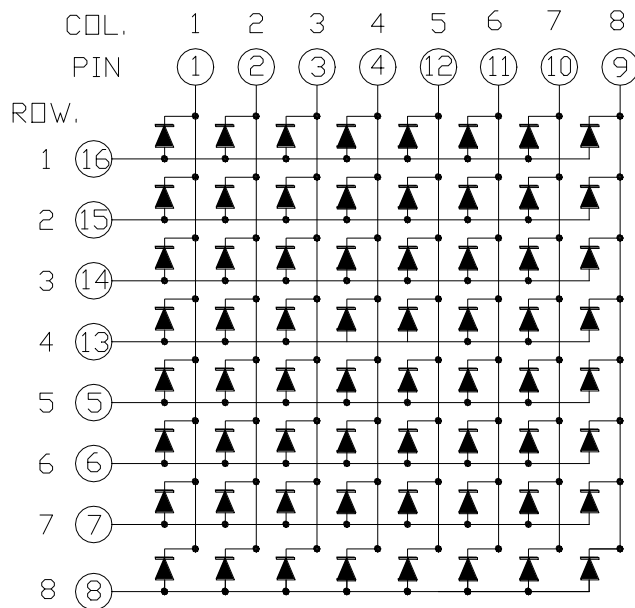
- \* Strongly suggest the application is designed by constant current source, because the chip brightness is highly sensitive to forward voltage.

## PACKAGE DIMENSION



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

NO.	CONNECTION
1.	CATHODE COL. 1
2.	CATHODE COL. 2
3.	CATHODE COL. 3
4.	CATHODE COL. 4
5.	ANODE ROW 5
6.	ANODE ROW 6
7.	ANODE ROW 7
8.	ANODE ROW 8
9.	CATHODE COL. 8
10.	CATHODE COL. 7
11.	CATHODE COL. 6
12.	CATHODE COL. 5
13.	ANODE ROW 4
14.	ANODE ROW 3
15.	ANODE ROW 2
16.	ANODE ROW 1

## ABSOLUTE MAXIMUM RATING AT Ta=25°C

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Dot	35	mW
Peak Forward Current Per Dot	60	mA
Continuous 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 : 1/16 Inch Below Seating Plane For 3 Second At 260°C		

## ELECTRICAL OPTICAL CHARACTERISTICS CURVES AT Ta=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	1300	3600		mc d	I <sub>p</sub> =80mA 1/16 DUTY
Peak Emission Wavelength	λ <sub>p</sub>		595		nm	I <sub>f</sub> =20mA
Special Line Half-Width	Δλ		15	20	nm	I <sub>f</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		592		nm	I <sub>f</sub> =20mA
Forward Voltage, Per Dot	V <sub>f</sub>		2.0	2.6	V	I <sub>f</sub> =20mA
			2.1	2.8	V	I <sub>f</sub> =80mA
Reverse Current, Per Dot	I <sub>r</sub>			100	uA	V <sub>r</sub> =5V
Luminous Intensity Matching Ratio	I <sub>v-m</sub>			2:1		I <sub>f</sub> =10mA

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 CHARACTERISTICS CURVES ( 25°C Ambient Temperature Unless Otherwise Note)

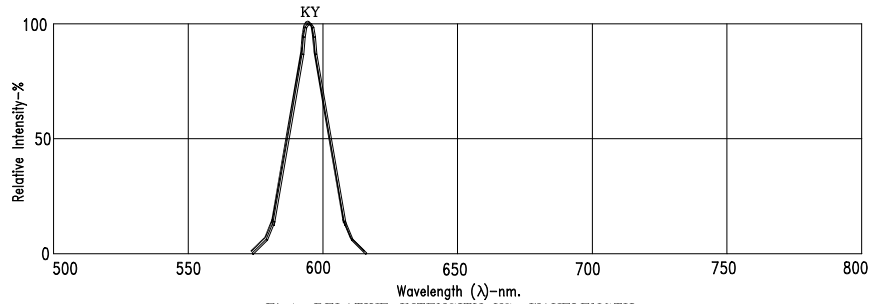


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

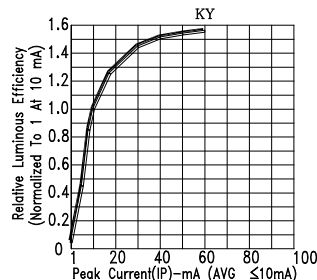


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

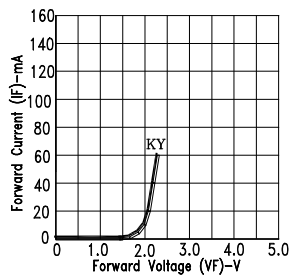


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

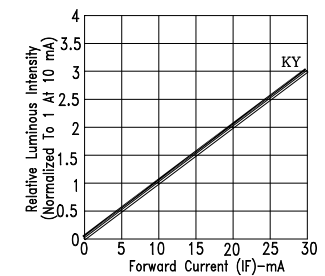


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

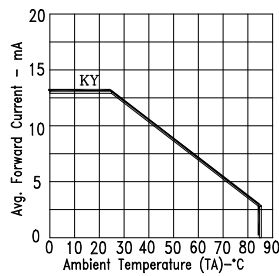


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE

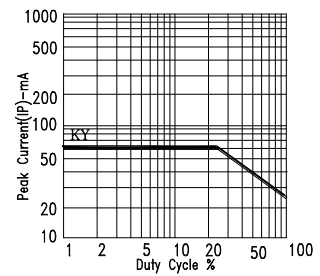


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)