

**FEATURES**

- \* 1.85 INCH ( 47.0 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* EXCELLENT CHARACTERS APPEARANCE.
- \* HIGH BRIGHTNESS & HIGH CONTRAST.
- \* WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.
- \* STACKABLE VERTICALLY AND HORIZONTALLY

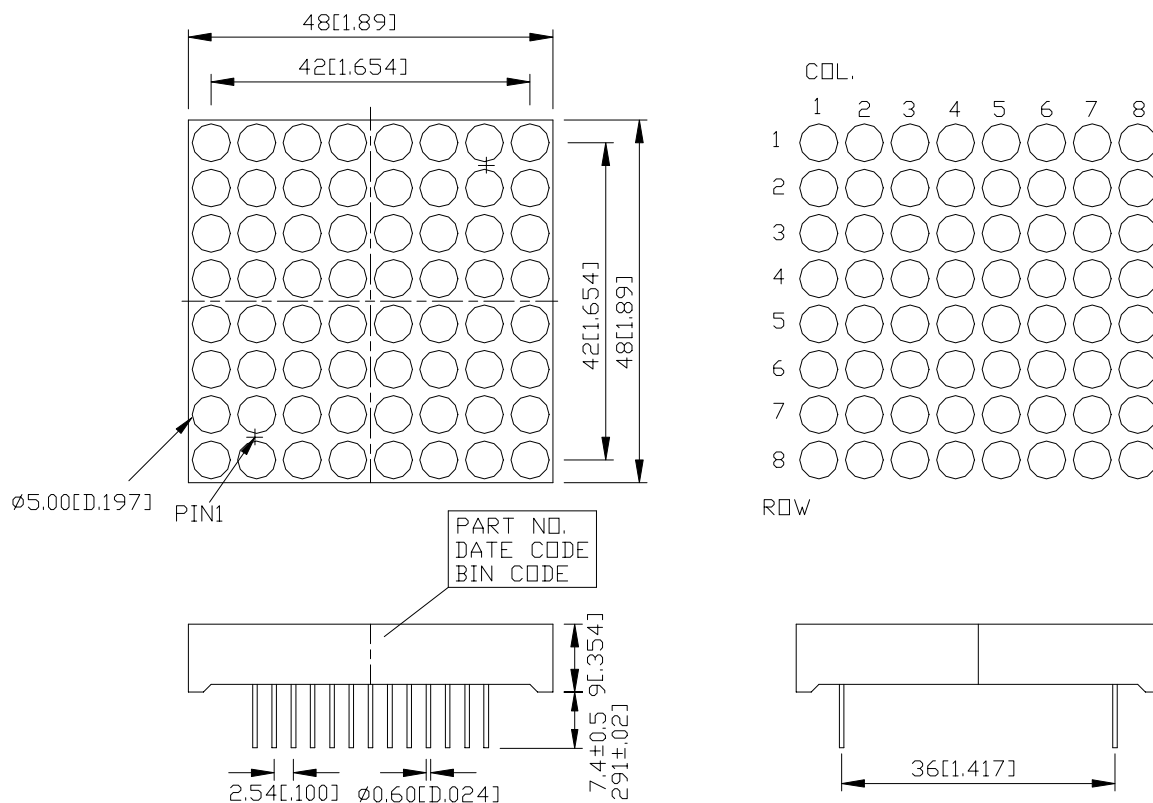
**DESCRIPTION**

The LTP-18088KD is a 1.85 inch ( 47.0 mm) matrix height 8 x 8 dot matrix displays. This device utilizes AlInGaP Hyper Red LED chips, which are made from AlInGaP on a non-transparent GaAs substrate, and has a black face and white segments.

**DEVICE**

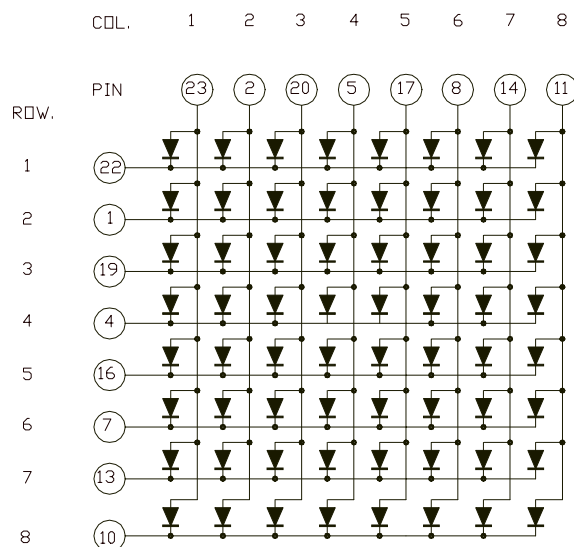
PART NO.	DESCRIPTION
AlInGaP HYPER RED	Anode Column
LTP-18088KD	Cathode Row

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

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

PARAMETER	MAXIMUM RATING	UNIT
Average Power Dissipation Per Dot	40	mW
Peak Forward Current Per Dot	90	mA
Continuous Forward Current Per Dot	15	mA
Derating Linear From 25 <sup>0</sup> C Per Dot	0.2	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>	1650	3500		μcd	I <sub>F</sub> =32mA , 1/16Duty
Peak Emission Wavelength	λ <sub>p</sub>		650		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		20		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		639		nm	I <sub>F</sub> =20mA
Forward Voltage Per Dot	V <sub>F</sub>		2.1	2.6	V	I <sub>F</sub> =20mA
			2.3	2.8	V	I <sub>F</sub> =80mA
Reverse Current Per 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 (Commision International De L'Eclairage) eye-response curve.

**TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES**

(25°C Ambient Temperature Unless Otherwise Noted)

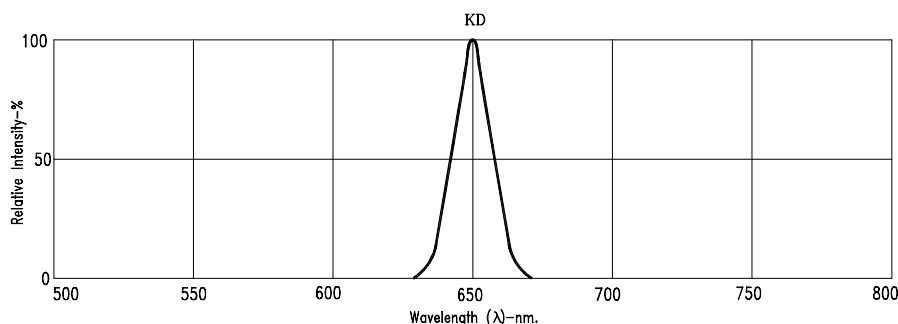


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

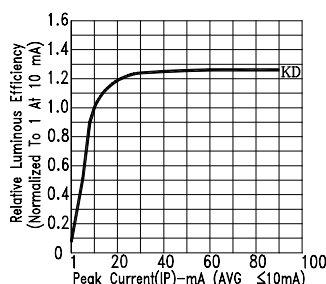


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

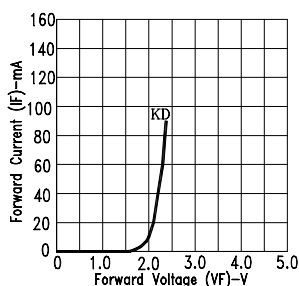


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

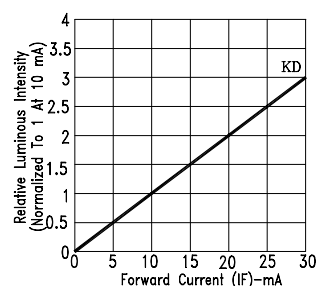


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

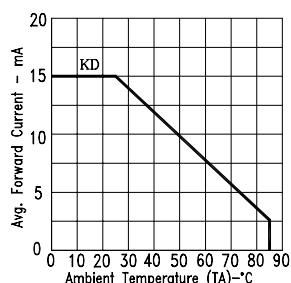


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

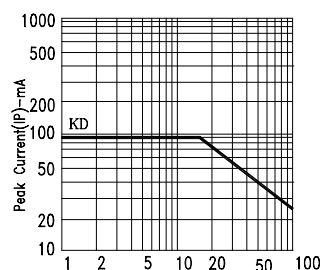


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE : KD=AlInGaP HYPER RED