

**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

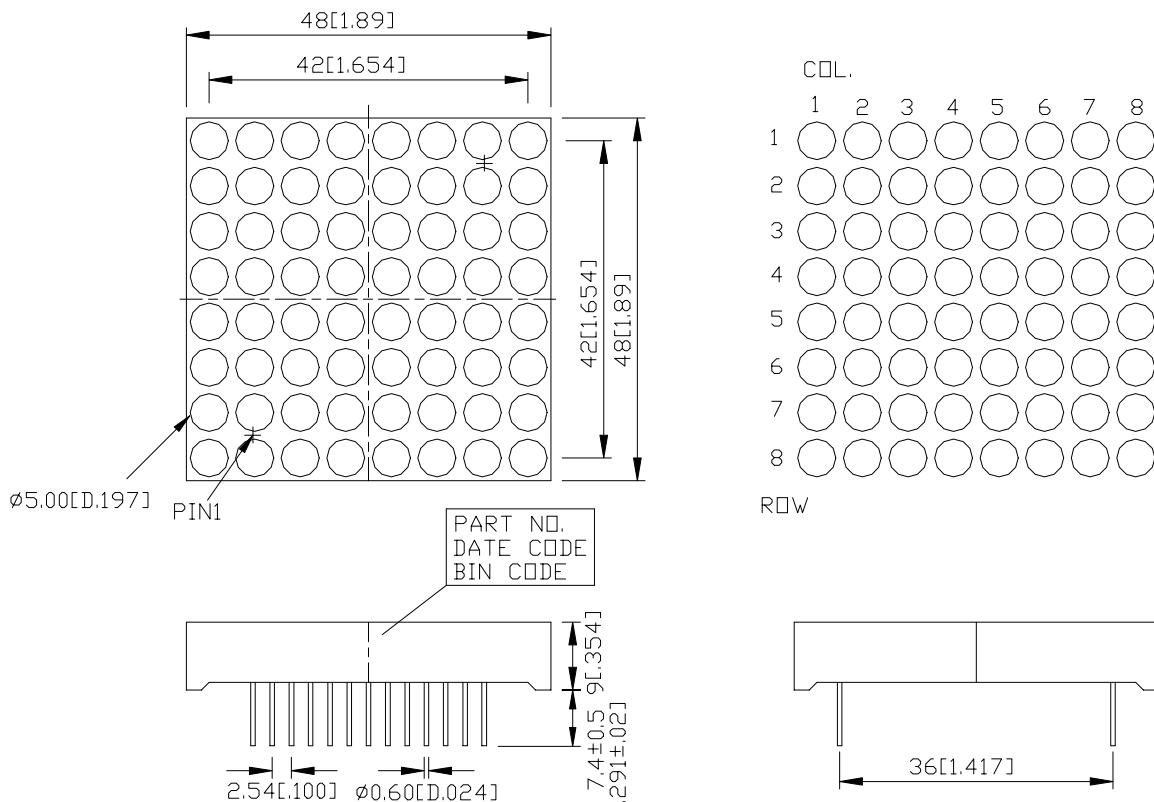
**DESCRIPTION**

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**

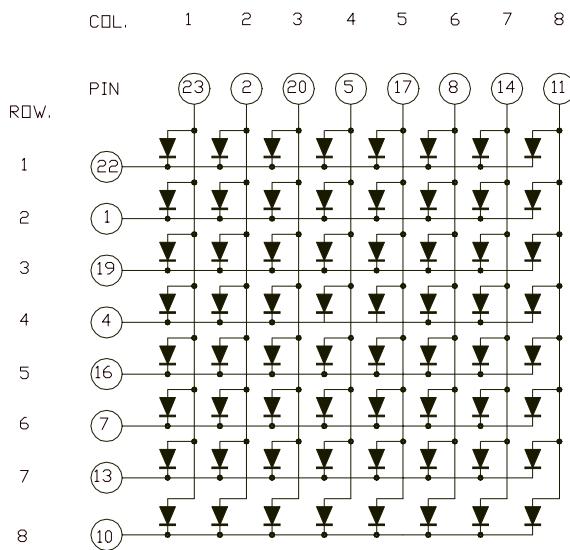
<b>PART NO.</b>	<b>DESCRIPTION</b>
AlInGaP HYPER RED	Anode Column
LTP-18088KD	Cathode Row

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

NO	CONNECTION	NO	CONNECTION
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  $T_A=25^\circ\text{C}$ 

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 $25^\circ\text{C}$ Per Dot	0.2	mA/ $^\circ\text{C}$
Reverse Voltage Per Dot	5	V
Operating Temperature Range	$-35^\circ\text{C}$ to $+85^\circ\text{C}$	
Storage Temperature Range	$-35^\circ\text{C}$ to $+85^\circ\text{C}$	
Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at $260^\circ\text{C}$		

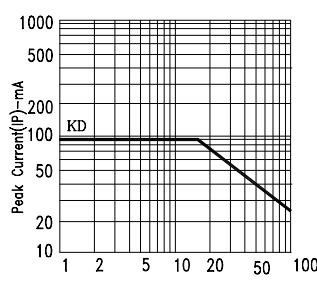
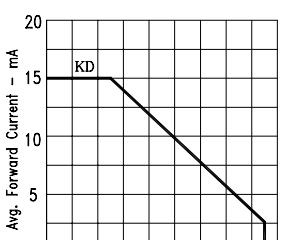
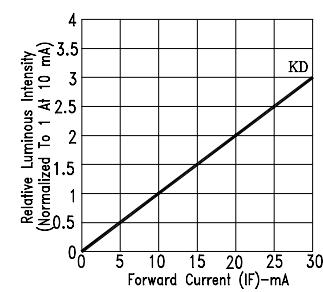
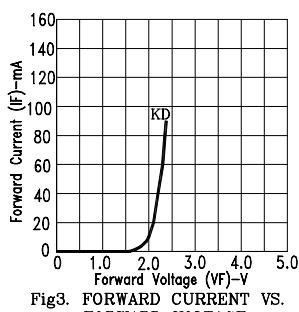
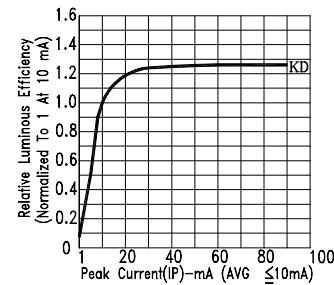
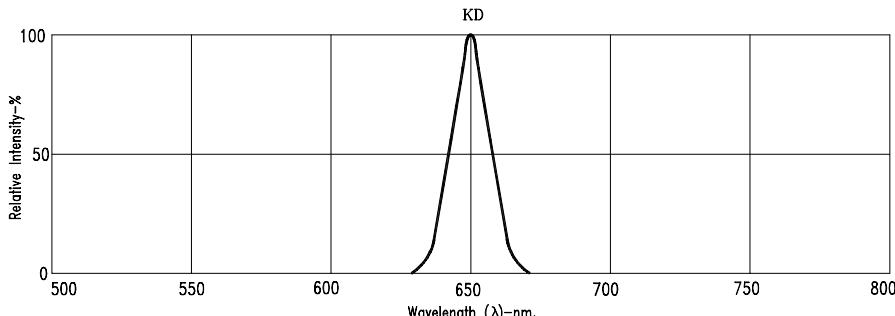
ELECTRICAL / OPTICAL CHARACTERISTICS AT  $T_A=25^\circ\text{C}$ 

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	$I_v$	1650	3500		$\mu\text{cd}$	$I_p=32\text{mA}$ , 1/16Duty
Peak Emission Wavelength	$\lambda_p$		650		nm	$I_F=20\text{mA}$
Spectral Line Half-Width	$\Delta\lambda$		20		nm	$I_F=20\text{mA}$
Dominant Wavelength	$\lambda_d$		639		nm	$I_F=20\text{mA}$
Forward Voltage Per Dot	$V_F$		2.1	2.6	V	$I_F=20\text{mA}$
			2.3	2.8	V	$I_F=80\text{mA}$
Reverse Current Per Dot	$I_R$			100	$\mu\text{A}$	$V_R=5\text{V}$
Luminous Intensity Matching Ratio	$I_v\text{-m}$			2:1		$I_p=32\text{mA}$ , 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)



NOTE : KD=AlInGaP HYPER RED