

**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.

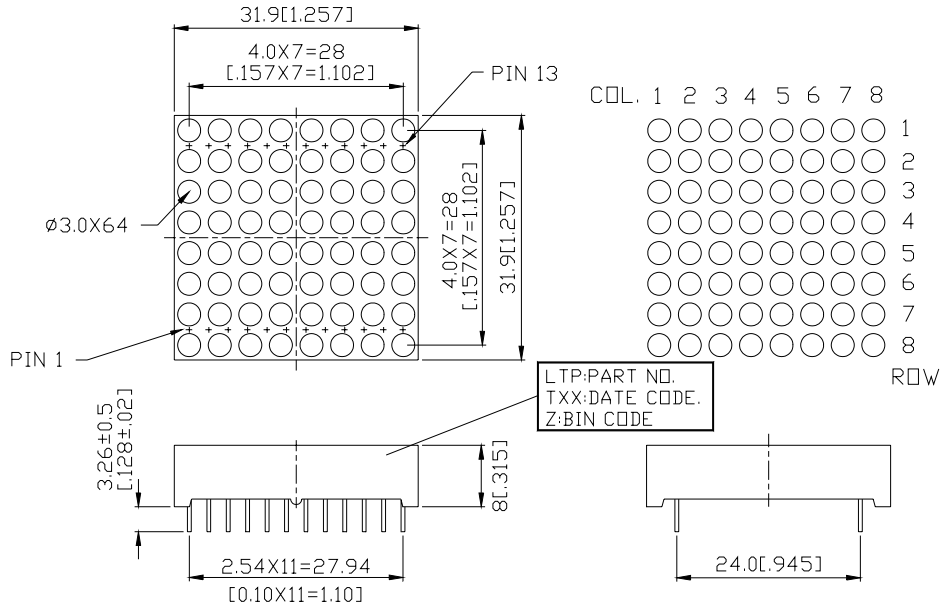
**DESCRIPTION**

The LTP-12188M-07 is a 1.22 inch (31.0 mm) matrix height 8x8 dot matrix display. This device uses AS-AllnGap GREEN LED chips (AllnGap epi on GaP substrate),and AS-AllnGap HYPER RED LED chips (AllnGap epi on a GaAs substrate). The display has black face and water clear dots.

**DEVICE**

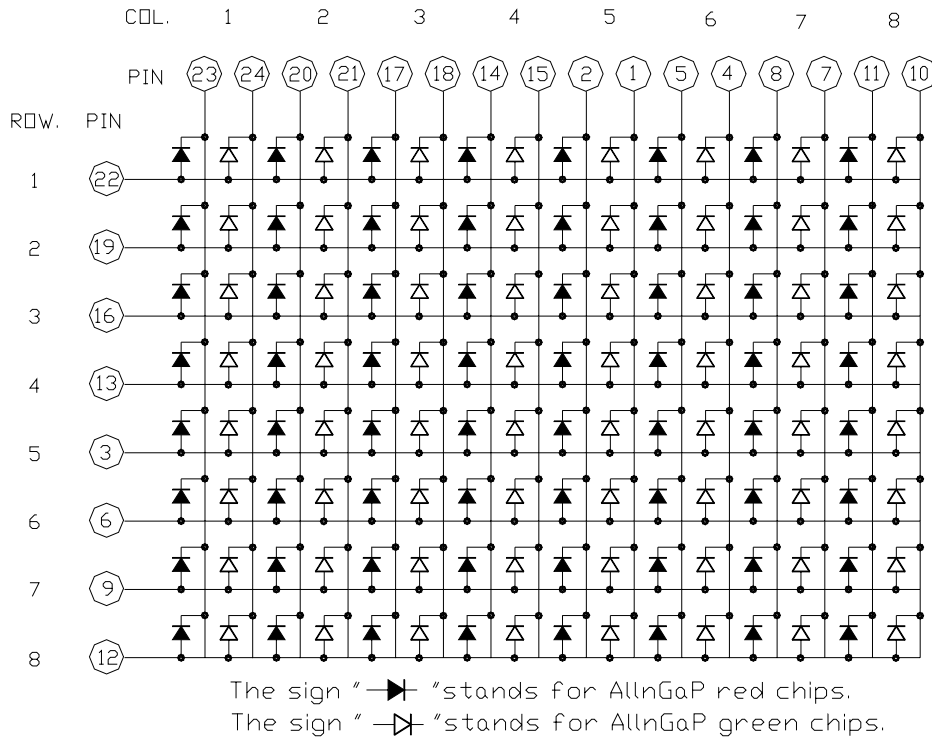
<b>PART NO.</b>	<b>DESCRIPTION</b>
MULTI-COLOR	ANODE ROW
LTP-12188M-07	CATHODE COLUMN

### PACKAGE DIMENSIONS



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

### INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

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

**ABSOLUTE MAXIMUM RATING**

PARAMETER	AllnGaP GREEN	AllnGaP HYPER RED	UNIT
Average Power Dissipation Per Dot	70	70	mW
Peak Forward Current Per Dot	60	90	mA
Average Forward Current Per Dot	25	25	mA
Derating Linear From 25°C Per Dot	0.33	0.33	mA/°C
Reverse Voltage Per Dot	5	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**
**AllnGaP GREEN**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	5400	9360		μcd	I <sub>p</sub> =40mA 1/8Duty
Peak Emission Wavelength	λ <sub>p</sub>		571		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		15		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		572		nm	I <sub>F</sub> =20mA
Forward Voltage any Dot	V <sub>F</sub>		2.05	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> =40mA 1/8Duty

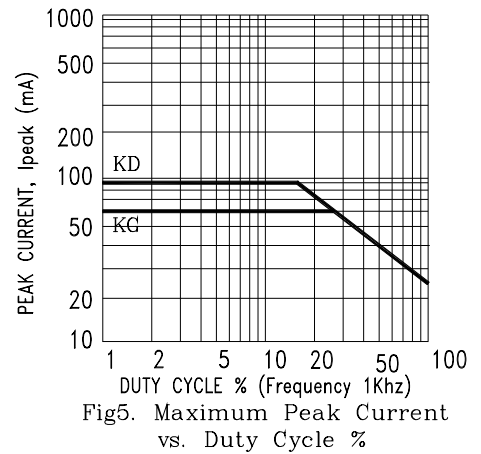
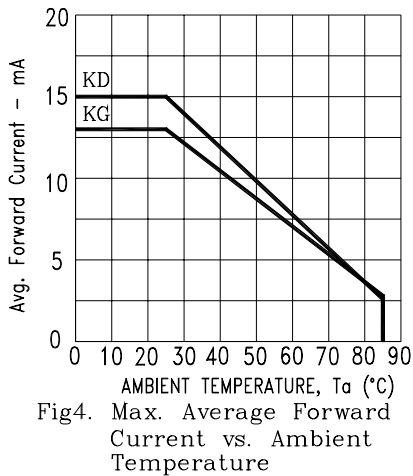
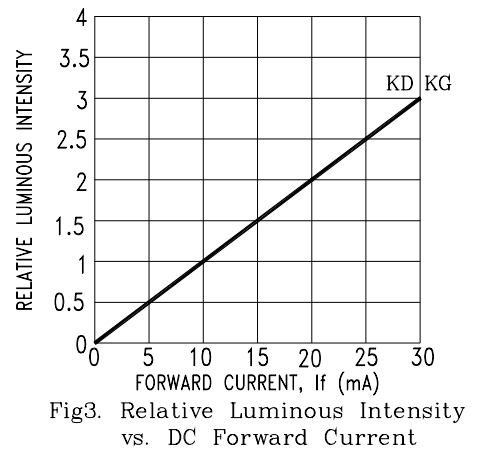
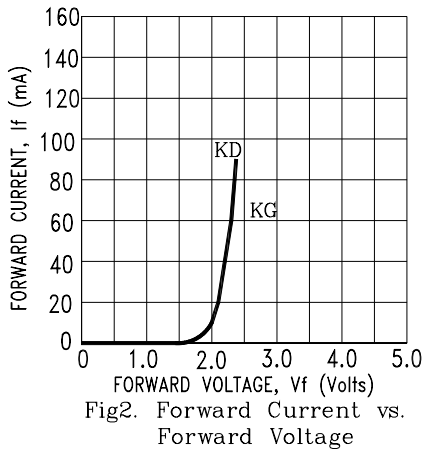
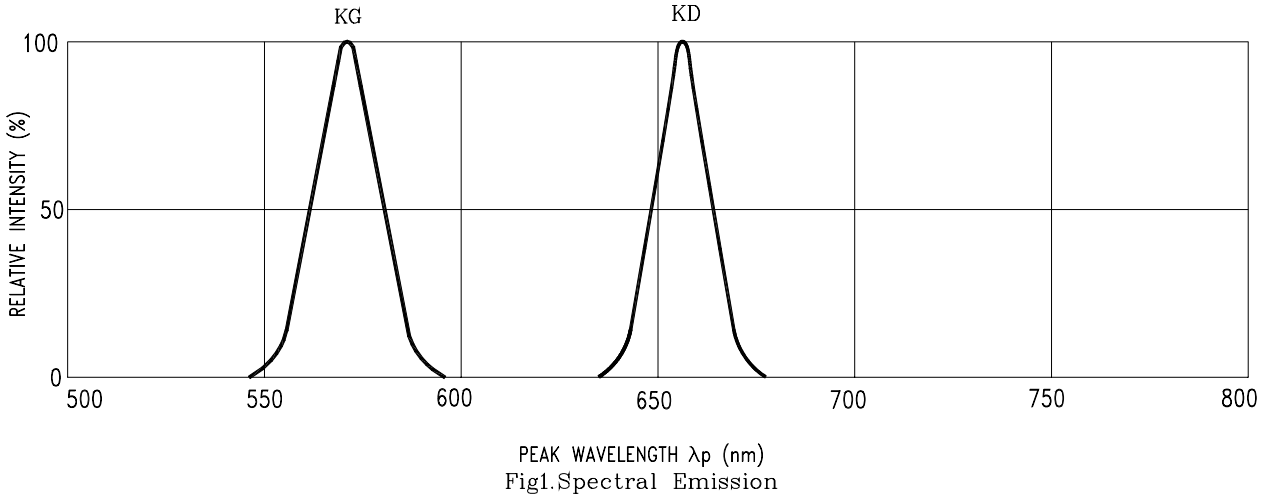
**AllnGaP HYPER RED**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	4300	7020		μcd	I <sub>p</sub> =40mA 1/8Duty
Peak Emission Wavelength	λ <sub>p</sub>		656		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		22		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		640		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> =40mA 1/8Duty

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

### TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : KD=AlInGaP HYPER RED  
KG=AlInGaP GREEN