

**FEATURES**

- \* 1.85 inch ( 47.0 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* 8× 8 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCII AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.

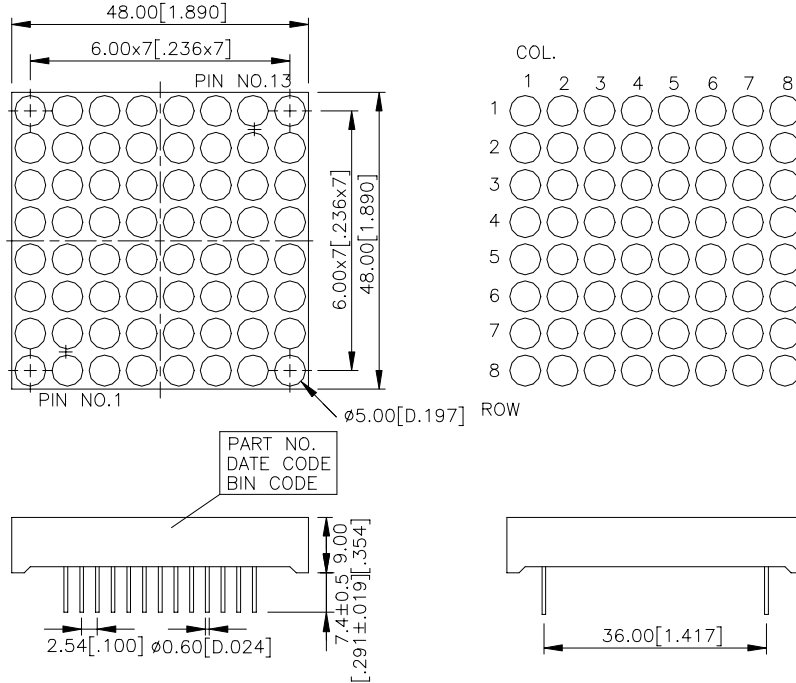
**DESCRIPTION**

The LTP-18388A-EC is a 1.85 inch (47.0 mm) matrix height 8× 8 dot matrix display. The device is multicolor applicable display which has black face and semi-transparent dot color. The red orange LED chips is made from GaAsP on a GaP substrate. The green LED chips is made from GaP on a GaP substrate.

**DEVICE**

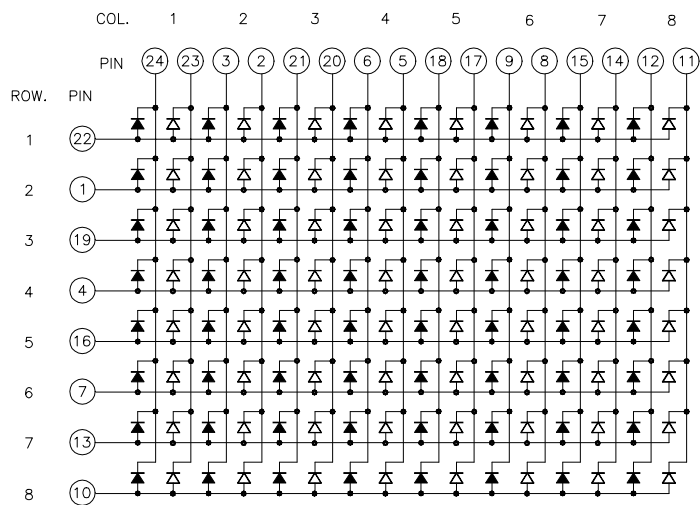
<b>PART NO.</b>	<b>DESCRIPTION</b>
RED ORANGE	CATHODE COLUMN ANODE ROW
GREEN	
LTP-18388A-EC	

## PACKAGE DIMENSIONS



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

## INTERNAL CIRCUIT DIAGRAM



The sign " " stands for RED ORANGE color chips.  
 The sign " " stands for GREEN color chips.

**PIN CONNECTION**

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

**ABS011LUTE MAXIMUM RATING AT Ta=25°C**

PARAMETER	GREEN	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	100	mA
Average 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: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane.		

**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C****GREEN**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	1500	4800		μcd	I <sub>p</sub> =80mA 1/16Duty
Peak Emission Wavelength	λ <sub>p</sub>		565		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		30		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		569		nm	I <sub>F</sub> =20mA
Forward Voltage any Dot	V <sub>F</sub>		2.1	2.6	V	I <sub>F</sub> =20mA
			3.0	3.7		I <sub>F</sub> =80mA
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>F</sub> =10mA

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

### ABS011LUTE MAXIMUM RATING AT Ta=25°C

PARAMETER	RED ORANGE	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	100	mA
Average Forward Current Per Dot	13	mA
Derating Linear From 25°C Per Dot	0.17	mA/°C
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Operating Temperature Range	-35°C to +85°C	
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Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane.		

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

#### ORANGE

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	1500	4800		μcd	I <sub>p</sub> =80mA 1/16Duty
Peak Emission Wavelength	λ <sub>p</sub>		630		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		40		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		621		nm	I <sub>F</sub> =20mA
Forward Voltage any Dot	V <sub>F</sub>		2.0	2.6	V	I <sub>F</sub> =20mA
			2.6	3.4		I <sub>F</sub> =80mA
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>F</sub> =10mA

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)

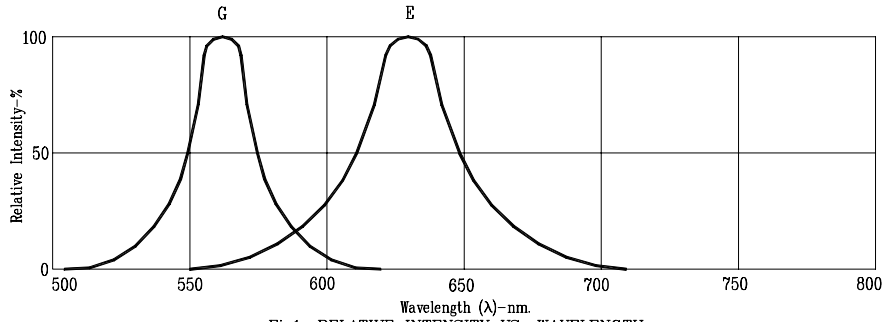


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

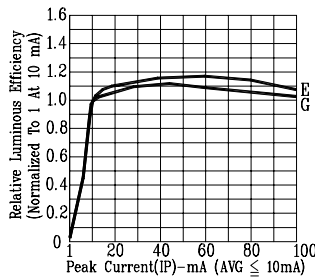


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

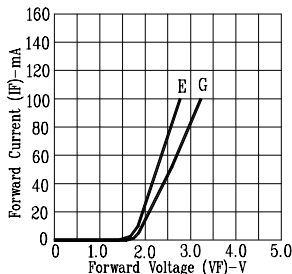


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

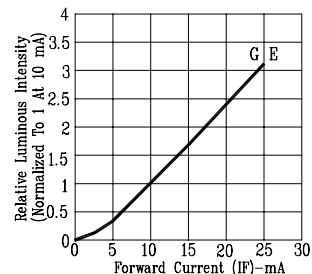


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

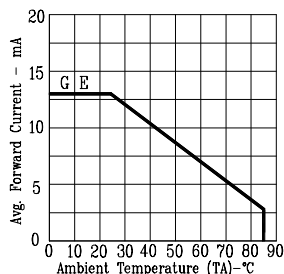


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

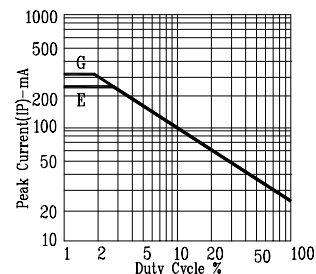


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN E=RED ORANGE