

FEATURES

- * 1.85 inch (47 mm) MATRIX HEIGHT
- * LOW POWER REQUIREMENT
- * SINGLE PLANE, WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * 8x8 ARRAY WITH X-Y SELECT
- * COMPATIBLE WITH USASCLL AND EBCDIC CODES
- * STACKABLE HORIZONTALLY
- * CATEGORIZED FOR LUMINOUS INTENSITY
- * **LEAD-FREE PACKAGE**

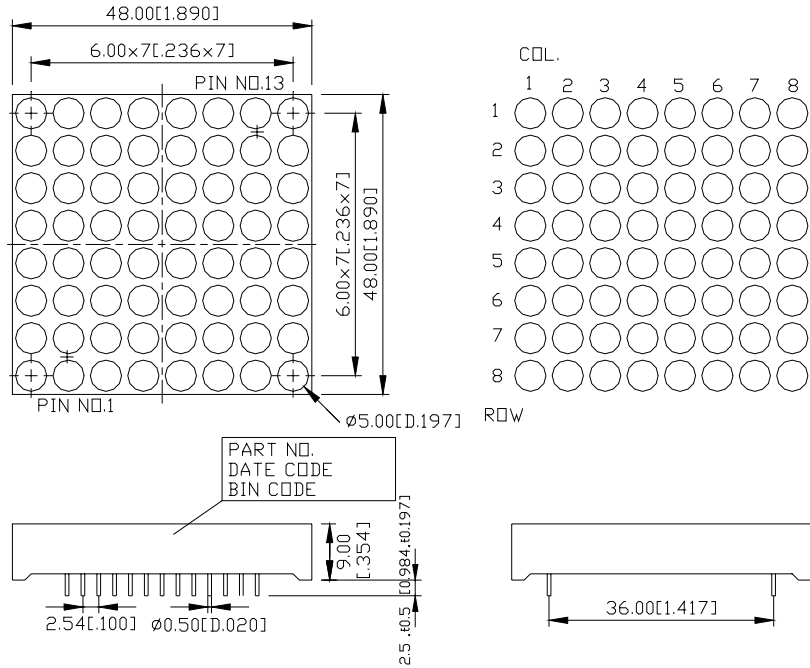
DESCRIPTION

The LTP-18588M-02 is a 1.85 inch (47 mm) matrix height 8x8 dot matrix display. This device uses RED ORANGE (GaAsP epi on GaP substrate) and GREEN LED chips (GaP epi on GaP substrate). The display has black face and white segments.

DEVICE

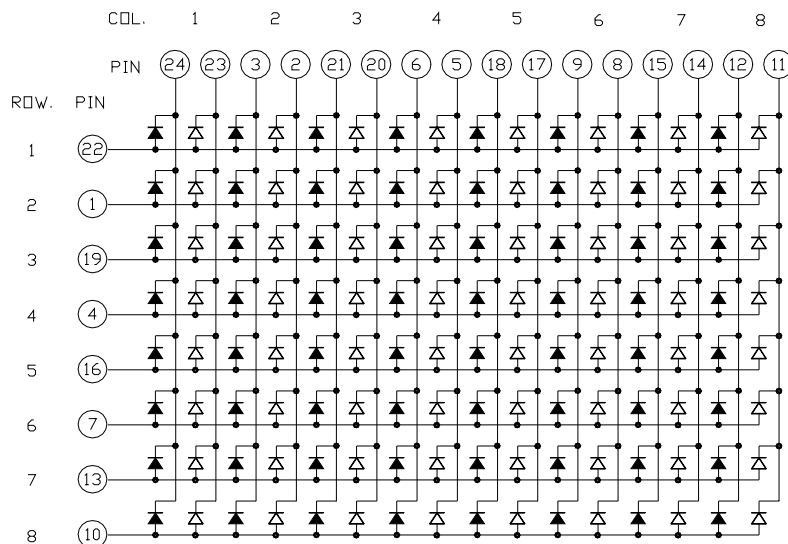
PART NO.	DESCRIPTION
Red Orange & Green	Cathode Column
LTP-18588M-02	Anode Row



PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are ± 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 COULMN 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)



ABSOLUTE MAXIMUM RATING

PARAMETER	GREEN	RED ORANGE	UNIT
Average Power Dissipation Per Dot	36		mW
Peak Forward Current Per Chip (Frequency 1Khz, 10% duty cycle)	100		mA
Continuous Forward Current Per Chip	13		mA
Derating Linear From 25°C Per Chip	0.17		mA/°C
Reverse Voltage Per Chip t	5		V
Operating Temperature Range	-35 ⁰ C to +85 ⁰ C		
Storage Temperature Range	-35 ⁰ C to +85 ⁰ C		
Soldering Conditions : 1/16 inch below seating plane for 3 seconds at 260 ⁰ C			

*** See figure 6 and 7 to establish pulsed condition**



ELECTRICAL / OPTICAL CHARACTERISTICS AT T_A=25°C

RED ORANGE

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	1500	4800		μcd	I _p =80mA 1/16DUTY
Peak Emission Wavelength	λ _p		630		nm	I _F =20mA
Spectral Line Half-Width	Δλ		40		nm	I _F =20mA
Dominant Wavelength	λ _d		621		nm	I _F =20mA
Forward Voltage any Dot	V _F		2	2.6	V	I _F =20mA
			2.6	3.4	V	I _F =80mA
Reverse Current any Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 1/16DUTY

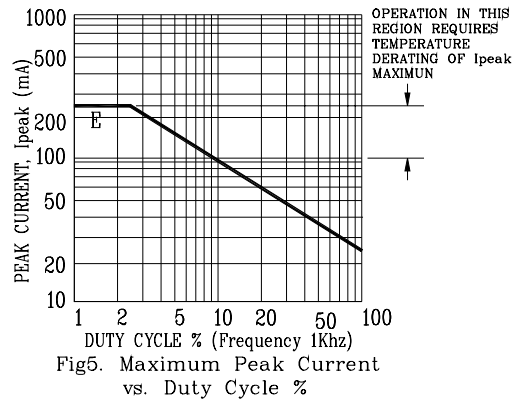
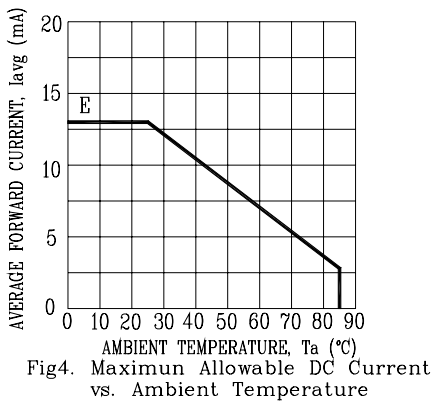
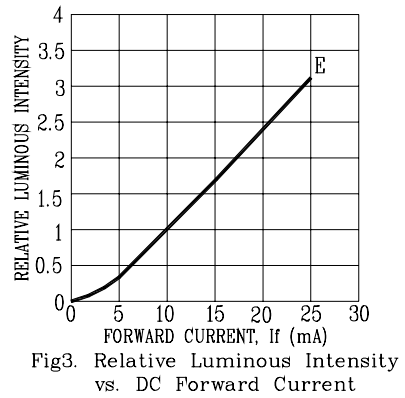
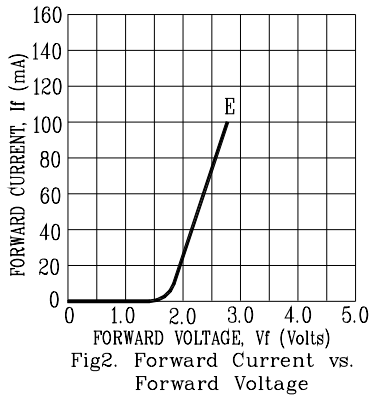
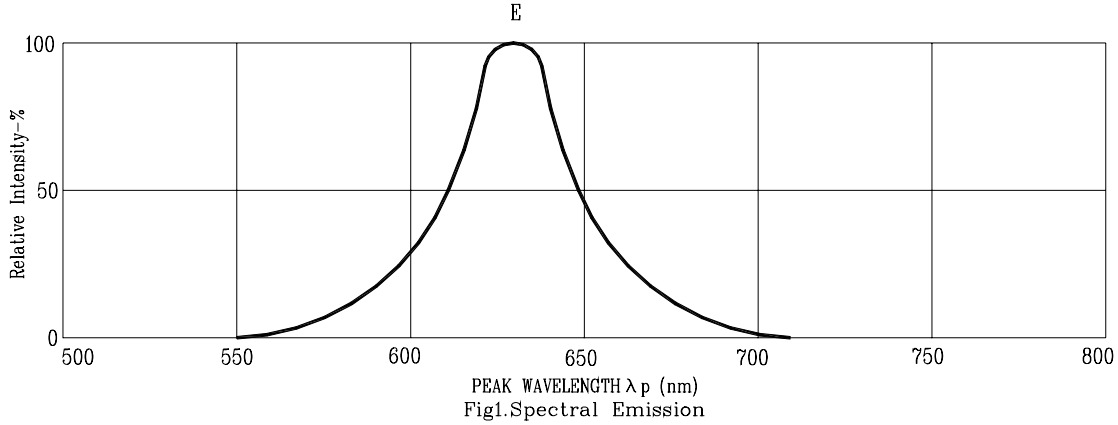
GREEN

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	1500	4800		μcd	I _p =80mA 1/16DUTY
Peak Emission Wavelength	λ _p		565		nm	I _F =20mA
Spectral Line Half-Width	Δλ		30		nm	I _F =20mA
Dominant Wavelength	λ _d		569		nm	I _F =20mA
Forward Voltage any Dot	V _F		2.1	2.6	V	I _F =20mA
			3	3.7	V	I _F =80mA
Reverse Current any Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 1/16DUTY

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: E=RED ORANGE

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(25°C Ambient Temperature Unless Otherwise Noted)

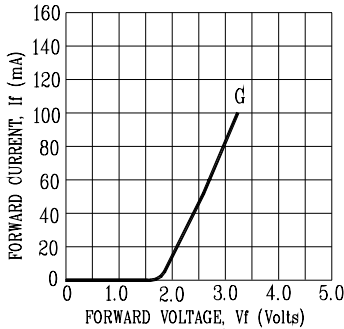
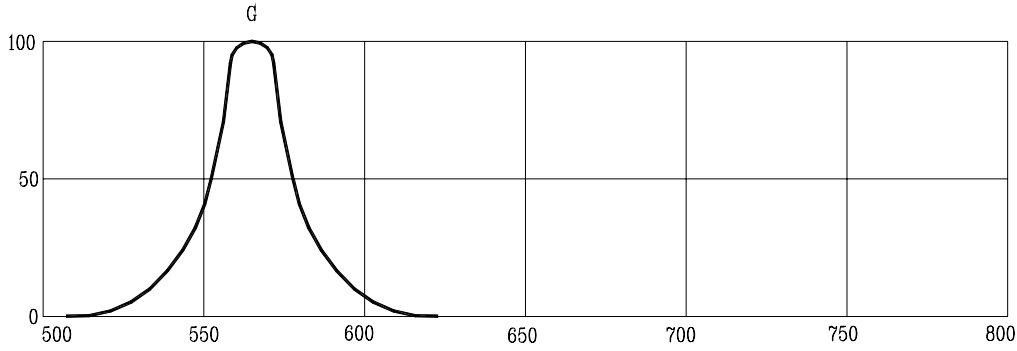


Fig2. Forward Current vs. Forward Voltage

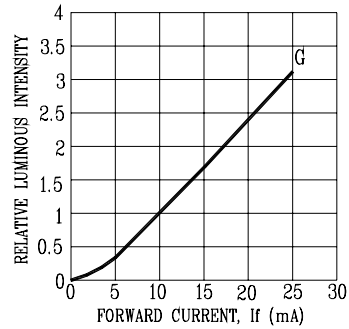


Fig3. Relative Luminous Intensity vs. DC Forward Current

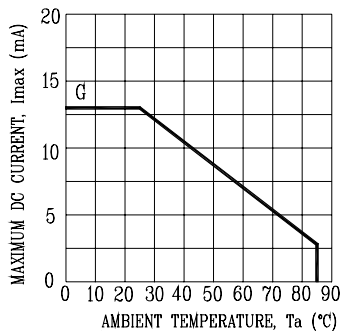


Fig4. Maximum Allowable DC Current vs. Ambient Temperature

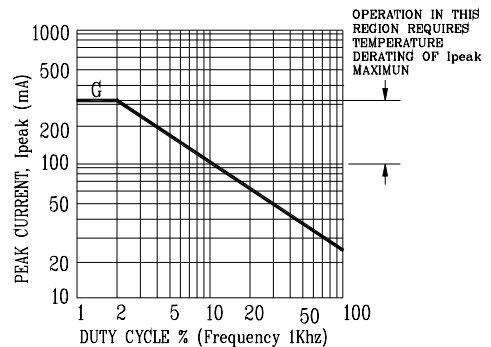


Fig5. Maximum Peak Current vs. Duty Cycle %

NOTE: G=GREEN