3 ϕ 16 $\times$ 16 Multicolor Dot Matrix LED Displays

LTP-254FFM-02 Series

Features

- 2.52 inch (64.00mm) matrix height.
- Low power requirement.
- Excellent characters and appearance.
- High contrast.
- High brightness.
- Wide viewing angle.
- 16 $\times$ 16 array with X-Y select.
- Stackable vertically and horizontally.
- Categorized for luminous intensity.

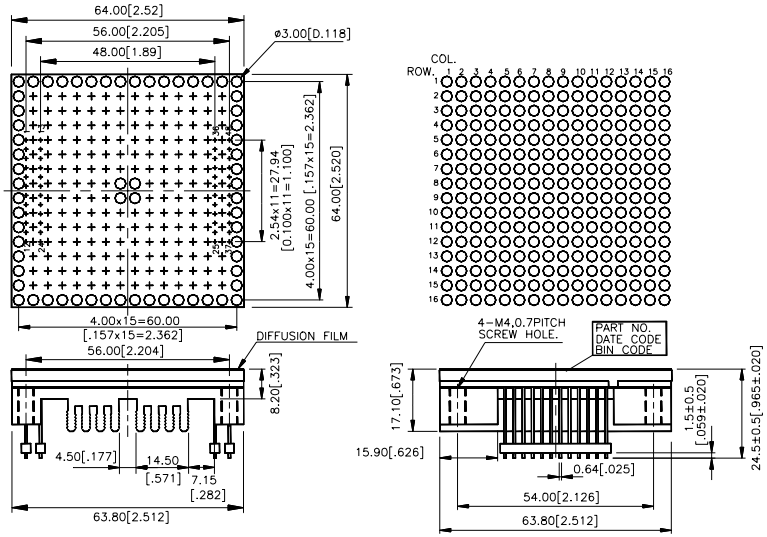
Description

The LTP-254FFM-02 is 2.52 inch (64.00mm) matrix height 16 $\times$ 16 dot matrix displays.

This display utilizes standard green & AlGaAs red LED chips.

The green LED chips are made from GaP on transparent GaP substrate. The AlGaAs red LED chips are made from AlGaAs on a GaAs substrate. and it has black face and a diffusion film is added on it.

Package Dimension



Notes : All dimensions are in millimeters(Inchs.) tolerance is : $\pm$ 0.25mm(0.01")unless otherwise Noted.

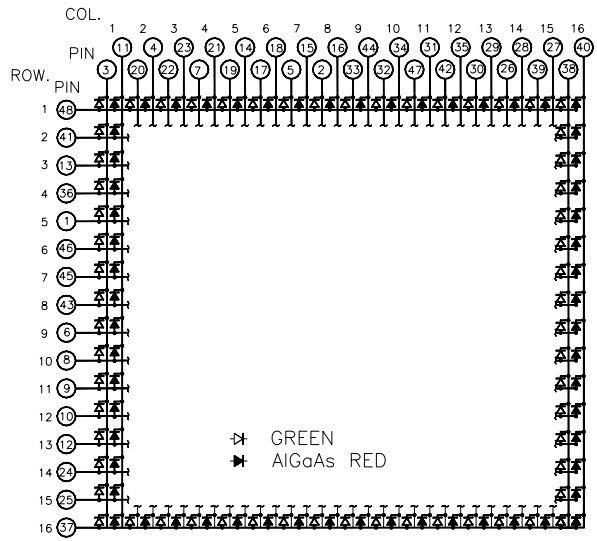
Devices

Part No.	Source Color	Description
LTP-254FFM-02	Green & AlGaAs Red	16 $\times$ 16 Dot Matrix Anode Row Cathode Column

Pin Connection (Com.=Common, An.=Anode, Ca.= Cathode, Col.=Column)

No	Connection	No	Connection	No	Connection	No	Connection
1	Com. An. Row 5	13	Com. An. Row 3	25	Com. An. Row 15	37	Com. An. Row 16
2	Ca. Column 8 Green	14	Ca. Column 5 Red	26	Ca. Column 14 Green	38	Ca. Column 16 Green
3	Ca. Column 1 Green	15	Ca. Column 7 Red	27	Ca. Column 15 Red	39	Ca. Column 15 Green
4	Ca. Column 2 Red	16	Ca. Column 8 Red	28	Ca. Column 14 Red	40	Ca. Column 16 Red
5	Ca. Column 7 Green	17	Ca. Column 6 Green	29	Ca. Column 13 Red	41	Com. An. Row 2
6	Ca. Column Row 9	18	Ca. Column 6 Red	30	Ca. Column 13 Green	42	Ca. Column 12 Green
7	Ca. Column 4 Green	19	Ca. Column 5 Green	31	Ca. Column 11 Red	43	Com. An. Row 8
8	Com. An. Row 10	20	Ca. Column 2 Green	32	Ca. Column 10Green	44	Ca. Column 1 Red
9	Com. An. Row 11	21	Ca. Column 4 Red	33	Ca. Column 9 Green	45	Com. An. Row 7
10	Com. An. Row 12	22	Ca. Column 3 Green	34	Ca. Column 10 Red	46	Com. An. Row 6
11	Ca. Column 1 Red	23	Ca. Column 3 Red	35	Ca. Column 12 Red	47	Ca. Column 11 Green
12	Com. An. Row 13	24	Com. An. Row 14	36	Com. An. Row 14	48	Com. An. Row 1

Internal Circuit Diagram



Absolute Maximum Ratings at Ta=25℃

Parameter	Green	AlGaAs Red	Unit
Power Dissipation Per Dot	75	75	mW
Peak Forward Current Per Dot	100	125	mA
Average Forward Current Per Dot Derating Linear from 25℃ Per Dot	13 0.17	15 0.20	mA mA/℃
Reverse Voltage Per Dot	5	5	V
Operating Temperature Range	-35℃ to +85℃		
Storage Temperature Range	-35℃ to +85℃		
Solder Temperature 1/16 Inch Below Seating Plane for 3 Seconds at 260℃			

Electrical Optical Characteristics at Ta=25℃

Green

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I_V		570		μcd	I_P=80mA 1/16 Duty
Peak Emission Wavelength	λP		565		nm	I_F=20mA
Spectral Line Half-Width	Δλ		30		nm	I_F=20mA
Dominant Wavelength	λd		569		nm	I_F=20mA
Forward Voltage, and Dot	V_F		2.1	2.6	V	I_F=20mA
			3.0	3.7	V	I_F=80mA
Reverse Current, and Dot	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio	I_V-m			2:1		I_F=10mA

AlGaAs Red

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I_V		900		μcd	I_P=80mA 1/16 Duty
Peak Emission Wavelength	λP		660		nm	I_F=20mA
Spectral Line Half-Width	Δλ		20		nm	I_F=20mA
Dominant Wavelength	λd		638		nm	I_F=20mA
Forward Voltage, and Dot	V_F		2.3	2.9	V	I_F=20mA
			2.5	3.1	V	I_F=80mA
Reverse Current, and Dot	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio	I_V-m			2:1		I_F=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℃ Ambient Temperatrue Unless Otherwise Noted)

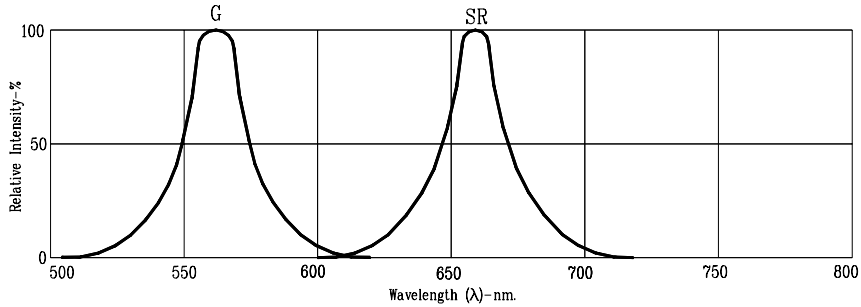


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

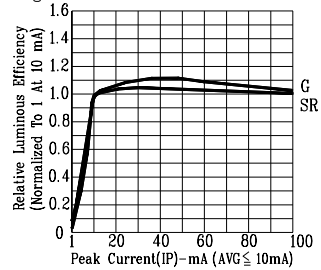


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

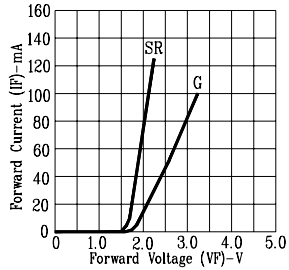


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

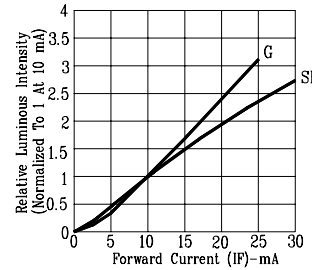


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

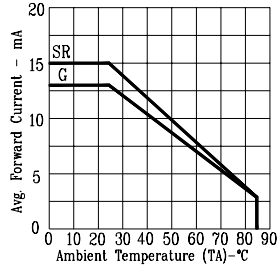


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

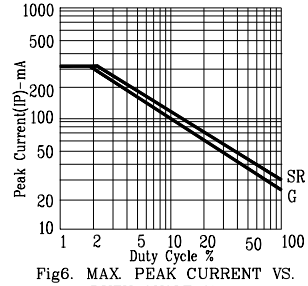


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE : G=GREEN, SR=AlGaAs RED (REFRESH RATE 1KHz)