

# 2.3 inch ( 58.42mm ) 8X8 DOT MATRIX LED DISPLAY

# UVP-2X88 SERIES

## DESCRIPTION

The UVP-2088 is 2.3 inch ( 58.42mm) height 8X8 dot matrix display.  
Single color display have the choices of three bright colors-AlGaAs red/green/red orange.  
Multicolor display are applicable to two colors : green and red orange  
All device have black face and white dot.  
The AlGaAs red LED chip are made from AlGaAs on a non-transparent GaAs substrate.  
The green LED chip are made from GaP on a transparent GaP substrate.  
The red orange LED chip are made from GaAsP on a transparent GaP substrate.

## FEATURES

- Industuy standard size
- Wide viewing angle
- Continuous uniform dot matrix.
- Excellent characters appearance
- Low power requirement

## DEVICES

PART NO.	DESCRIPTION	PACKAGE DIMENSION	INTERNAL CIRCUIT DIAGRAM
UVP-2088	Column Anode	Fig. 1	Fig. 2

## ABSOLUTE MAXIMUM RATINGS

@ T<sub>A</sub>=25°C

PARAMETER	AlGaAs RED	GREEN	RED ORANGE	UNIT
Power Dissipation Per Dot	36	36	36	mW
Peak Forward Current Per Dot	125	100	100	mA
Continuous Forward Current Per Dot	15	13	13	mA
Derating Linear From 25°C Per Dot	0.20	0.17	0.17	mA/°C
Reverse Voltage Per Dot	5	5	5	V
Operating Temperature Range	-35°Cto+85°C			
Storage Temperature Range	-35°Cto+85°C			
Solder Temperature 1/16 inch Below Seating Plane for 3 Seconds at 260°C				



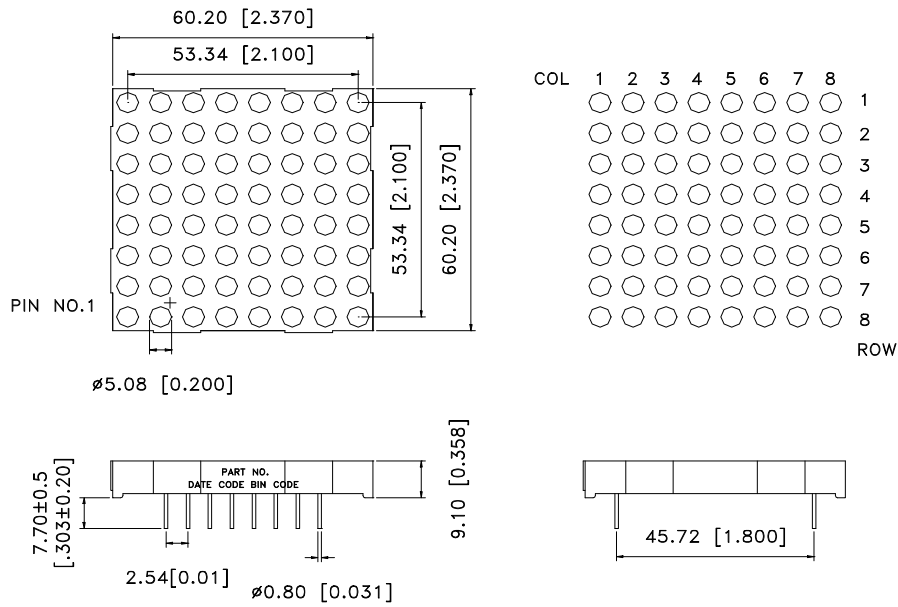
Unity Opto Technology Co., Ltd.

11/14/2000

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## PACKAGE DIMENSIONS



Unit:mm(inches)

Tolerance is  $\pm 0.25\text{mm}(0.01\text{'})$  unless otherwise noted

Fig. 1

## INTERNAL CIRCUIT DIAGRAM

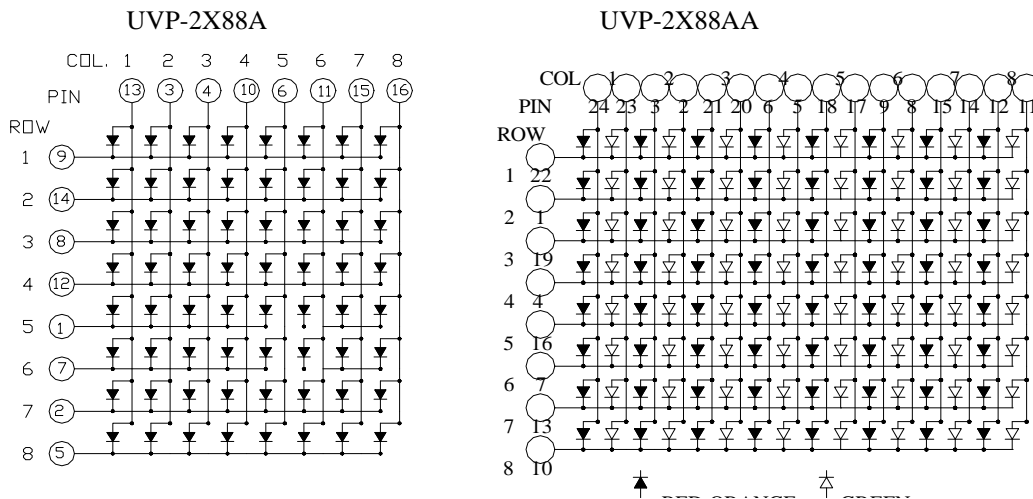


Fig. 2

**2.3 inch ( 58.42mm )  
8X8 DOT MATRIX LED DISPLAY**

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**PIN CONNECTION**

PIN NO.	CONNECTION	
	A	B
	UVP-2X88 XX	UVP-2188AA
1	CATHODE ROW 5	ANODE COLUMN 1 ORANGE
2	CATHODE ROW 7	ANODE COLUMN 1 GREEN
3	ANODE COLUMN 2	ANODE COLUMN 3 ORANGE
4	ANODE COLUMN 3	ANODE COLUMN 3 GREEN
5	CATHODE ROW 8	ANODE COLUMN 4 ORANGE
6	ANODE COLUMN 5	ANODE COLUMN 4 GREEN
7	CATHODE ROW 6	ANODE COLUMN 2 ORANGE
8	CATHODE ROW 3	ANODE COLUMN 2 GREEN
9	ANODE COLUMN 1	CATHODE ROW 5
10	ANODE COLUMN 4	CATHODE ROW 6
11	ANODE COLUMN 6	CATHODE ROW 7
12	CATHODE ROW 4	CATHODE ROW 8
13	ANODE COLUMN 1	ANODE COLUMN 8 GREEN
14	CATHODE ROW 2	ANODE COLUMN 8 ORANGE
15	ANODE COLUMN 7	ANODE COLUMN 6 GREEN
16	ANODE COLUMN 8	ANODE COLUMN 6 ORANGE
17		ANODE COLUMN 5 GREEN
18		ANODE COLUMN 5 ORANGE
19		ANODE COLUMN 7 GREEN
20		ANODE COLUMN 7 ORANGE
21		CATHODE ROW 4
22		CATHODE ROW 3
23		CATHODE ROW 2
24		CATHODE ROW 1

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**ELECTRICAL/OPTICAL CHARACTERISTICS**

**AlGaAs RED (UVP-2088AC)**

@ T<sub>A</sub>=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>V</sub>	6300	12000		μcd	I <sub>p</sub> = 80 mA 1/16 Duty
Peak Emission Wavelength	λ <sub>p</sub> /Hue		660/638		nm	I <sub>F</sub> = 20 mA
Spectral Line Half-Width	Δλ		35		nm	I <sub>F</sub> = 20 mA
Forward Voltage, any Dot	V <sub>F</sub>		1.8	2.4	V	I <sub>F</sub> = 20 mA
Reverse Current, any Dot	I <sub>R</sub>			100	μA	V <sub>R</sub> = 5 V
Luminous Intensity Matching Ra	I <sub>V-m</sub>			2:1		I <sub>F</sub> = 10 mA

**GREEN (UVP-2088AG) & (UVP-2188AA GREEN)**

@ T<sub>A</sub>=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>V</sub>	1780	4800		μcd	I <sub>p</sub> = 80 mA 1/16 Duty
Peak Emission Wavelength	λ <sub>p</sub> /Hue		565/569		nm	I <sub>F</sub> = 20 mA
Spectral Line Half-Width	Δλ		30		nm	I <sub>F</sub> = 20 mA
Forward Voltage, any Dot	V <sub>F</sub>		2.1	2.6	V	I <sub>F</sub> = 20 mA
Reverse Current, any Dot	I <sub>R</sub>			100	μA	V <sub>R</sub> = 5 V
Luminous Intensity Matching Ra	I <sub>V-m</sub>			2:1		I <sub>F</sub> = 10 mA

**RED ORANGE (UVP-2088AE) & (UVP-2188AA)**

@ T<sub>A</sub>=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>V</sub>	1780	4800		μcd	I <sub>p</sub> = 80 mA 1/16 Duty
Peak Emission Wavelength	λ <sub>p</sub> /Hue		565/569		nm	I <sub>F</sub> = 20 mA
Spectral Line Half-Width	Δλ		30		nm	I <sub>F</sub> = 20 mA
Forward Voltage, any Dot	V <sub>F</sub>		2.1	2.6	V	I <sub>F</sub> = 20 mA
Reverse Current, any Dot	I <sub>R</sub>			100	μA	V <sub>R</sub> = 5 V
Luminous Intensity Matching Ra	I <sub>V-m</sub>			2:1		I <sub>F</sub> = 10 mA

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**TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES**

( Ambient Temperature =25°C Unless Otherwise Noted )

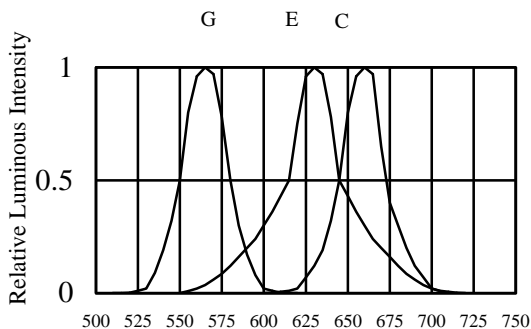


Fig 1. RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH

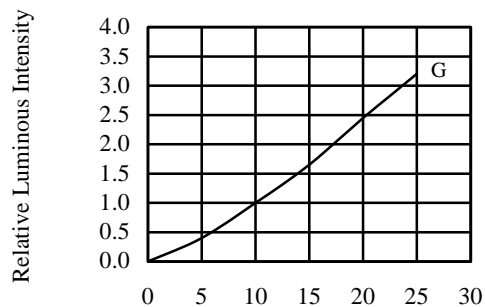


Fig 2. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

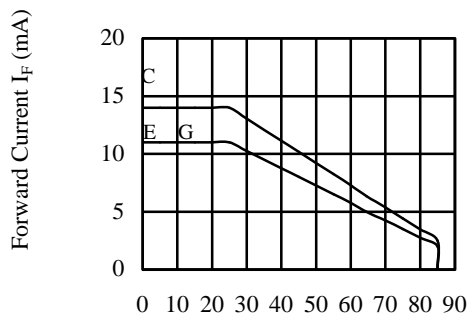


Fig 3. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

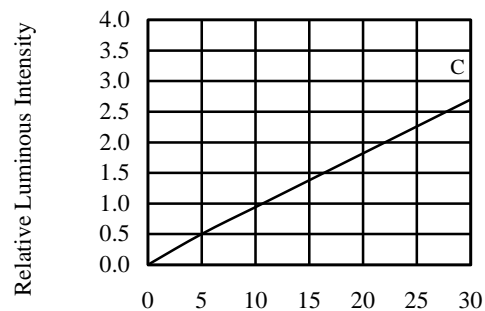


Fig 4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

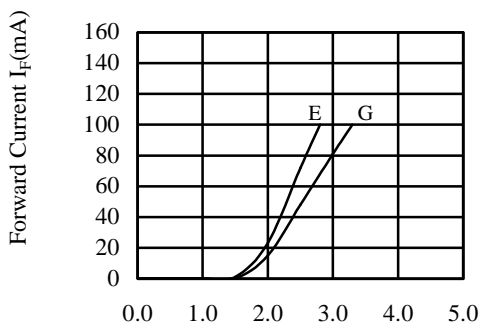


Fig 5. FORWARD CURRENT VS. FORWARD VOLTAGE

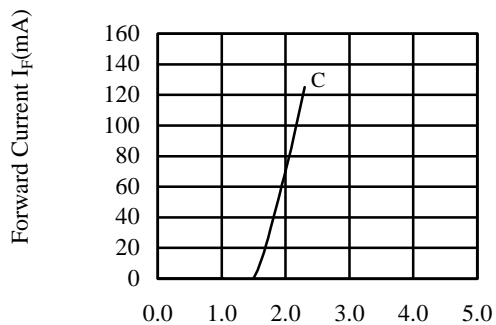


Fig 6. FORWARD CURRENT VS. FORWARD VOLTAGE