

2.0 inch (50.80mm) 4X4 DOT MATRIX LED DISPLAY

UVP-2X44 SERIES

DESCRIPTION

The UVP-2X44 is 2.0 inch (50.80mm) height 4X4 dot matrix display.

Single color display have the choices of three bright colors-AlGaAs red/green/yellow.

Multicolor display are applicable to two colors -green/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 yellow and 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-2344 | Column Cathode | Fig. 1 | Fig. 2 |

ABSOLUTE MAXIMUM RATINGS

@ T_A=25 °C

| PARAMETER | AlGaAs RED | GREEN | YELLOW | RED ORANGE | UNIT |
|---|--------------|-------|--------|------------|-------|
| Power Dissipation Per Dot | 96 | 96 | 96 | 96 | mW |
| Peak Forward Current Per Dot | 110 | 90 | 80 | 80 | mA |
| Continuous Forward Current Per Dot | 14 | 11 | 8 | 8 | mA |
| Derating Linear From 25°C Per Dot | 0.19 | 0.15 | 0.08 | 0.08 | mA/°C |
| Reverse Voltage Per Dot | 15 | 15 | 15 | 15 | 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 | | | | | |

UNi

Unity Opto Technology Co., Ltd.

11/14/2000

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PACKAGE DIMENSIONS

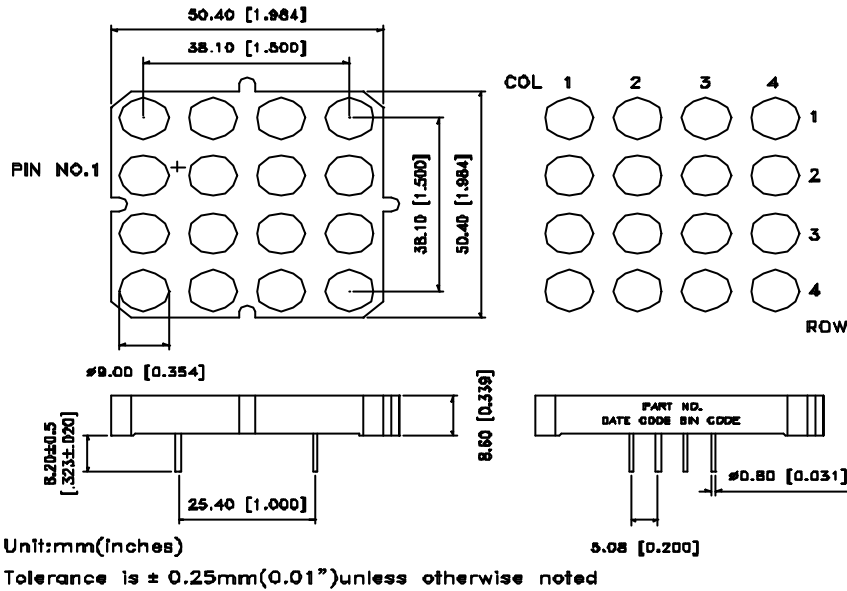
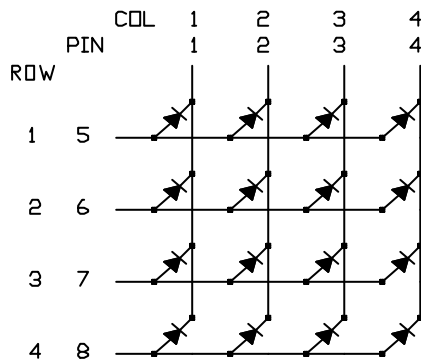


Fig. 1

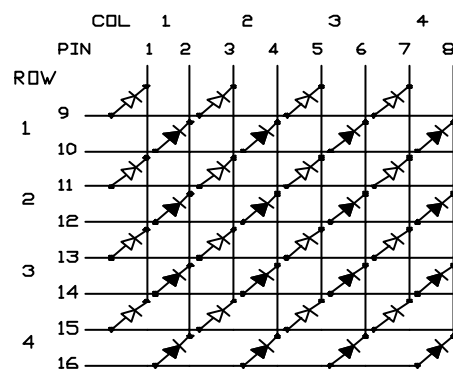
INTERNAL CIRCUIT DIAGRAM

A. UVP-2344XX



✱ 3 CHIPS IN SERIES

B. UVP-2844A3



✱✱ STANDS FOR 3 RED ORANGE CHIPS IN SERIES.
✱ STANDS FOR 3 GREEN CHIPS IN SERIES.

Fig. 2

2.0 inch (50.80mm)

4X4 DOT MATRIX LED DISPLAY

UVP-2X44 SERIES

PIN CONNECTION

| Pin No. | CONNECTION | |
|---------|------------------|-----------------------------|
| | UVP-2344XX | UVP-2844A ₃ |
| 1 | CATHODE COLUMN 1 | CATHODE COLUMN 1 RED ORANGE |
| 2 | CATHODE COLUMN 2 | CATHODE COLUMN 1 GREEN |
| 3 | CATHODE COLUMN 3 | CATHODE COLUMN 2 RED ORANGE |
| 4 | CATHODE COLUMN 4 | CATHODE COLUMN 2 GREEN |
| 5 | ANODE ROW 1 | CATHODE COLUMN 3 RED ORANGE |
| 6 | ANODE ROW 2 | CATHODE COLUMN 3 GREEN |
| 7 | ANODE ROW 3 | CATHODE COLUMN 4 ORANGE |
| 8 | ANODE ROW 4 | CATHODE COLUMN 4 GREEN |
| 9 | | ANODE ROW 1 RED ORANGE |
| 10 | | ANODE ROW 1 GREEN |
| 11 | | ANODE ROW 2 RED ORANGE |
| 12 | | ANODE ROW 2 GREEN |
| 13 | | ANODE ROW 3 RED ORANGE |
| 14 | | ANODE ROW 3 GREEN |
| 15 | | ANODE ROW 4 RED ORANGE |
| 16 | | ANODE ROW 4 GREEN |

**2.0 inch (50.80mm)
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UVP-2X44 SERIES

ELECTRICAL/OPTICAL CHARACTERISTICS

AlGaAs RED (UVP-2344C)

@ T_A=25 °C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|-----------------------------------|---------------------|-------|---------|------|------|----------------------------------|
| Average Luminous Intensity | I _V | 15100 | 28000 | | μcd | I _p = 80 mA 1/16 Duty |
| Peak Emission Wavelength | λ _p /Hue | | 660/638 | | nm | I _F = 20 mA |
| Spectral Line Half-Width | Δλ | | 35 | | nm | I _F = 20 mA |
| Forward Voltage, any Dot | V _F | | 5.4 | 7.2 | V | I _F = 20 mA |
| Reverse Current, any Dot | I _R | | | 100 | μA | V _R = 15 V |
| Luminous Intensity Matching Ratio | I _V -m | | | 2:1 | | I _F = 10 mA |

GREEN (UVP-2344G) & (UVP-2844A₃ GREEN)

@ T_A=25 °C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|-----------------------------------|---------------------|------|---------|------|------|----------------------------------|
| Average Luminous Intensity | I _V | 5000 | 11000 | | μcd | I _p = 80 mA 1/16 Duty |
| Peak Emission Wavelength | λ _p /Hue | | 565/569 | | nm | I _F = 20 mA |
| Spectral Line Half-Width | Δλ | | 30 | | nm | I _F = 20 mA |
| Forward Voltage, any Dot | V _F | | 6.3 | 7.8 | V | I _F = 20 mA |
| Reverse Current, any Dot | I _R | | | 100 | μA | V _R = 15 V |
| Luminous Intensity Matching Ratio | I _V -m | | | 2:1 | | I _F = 10 mA |

YELLOW (UVP-2344Y)

@ T_A=25 °C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|-----------------------------------|---------------------|------|---------|------|------|----------------------------------|
| Average Luminous Intensity | I _V | 5000 | 11000 | | μcd | I _p = 80 mA 1/16 Duty |
| Peak Emission Wavelength | λ _p /Hue | | 585/588 | | nm | I _F = 20 mA |
| Spectral Line Half-Width | Δλ | | 35 | | nm | I _F = 20 mA |
| Forward Voltage, any Dot | V _F | | 6.0 | 7.8 | V | I _F = 20 mA |
| Reverse Current, any Dot | I _R | | | 100 | μA | V _R = 15 V |
| Luminous Intensity Matching Ratio | I _V -m | | | 2:1 | | I _F = 10 mA |

RED ORANGE (UVP-2844A₃ RED ORANGE)

@ T_A=25 °C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|-----------------------------------|---------------------|------|---------|------|------|----------------------------------|
| Average Luminous Intensity | I _V | 5000 | 11000 | | μcd | I _p = 80 mA 1/16 Duty |
| Peak Emission Wavelength | λ _p /Hue | | 630/621 | | nm | I _F = 20 mA |
| Spectral Line Half-Width | Δλ | | 40 | | nm | I _F = 20 mA |
| Forward Voltage, any Dot | V _F | | 6.0 | 7.8 | V | I _F = 20 mA |
| Reverse Current, any Dot | I _R | | | 100 | μA | V _R = 5 V |
| Luminous Intensity Matching Ratio | I _V -m | | | 2:1 | | I _F = 10 mA |



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TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(Ambient Temperature =25°C Unless Otherwise Noted)

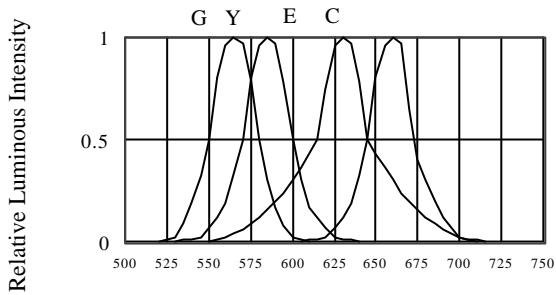


FIG.1 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH

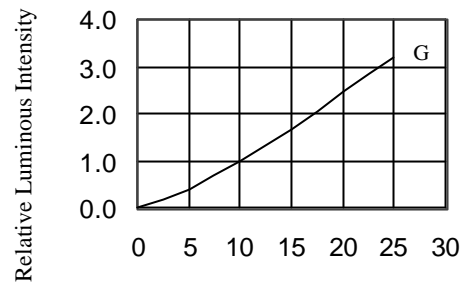


FIG.2 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

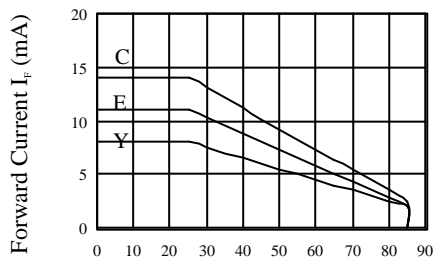


FIG.3 FORWARD CURRENT DERATING CURVE

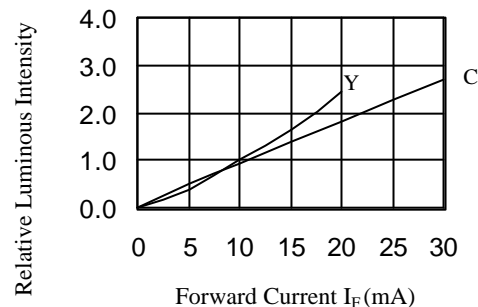


FIG.2 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

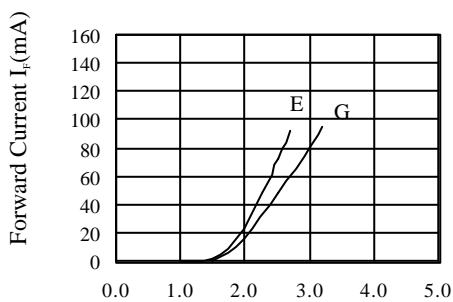


FIG.3 ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

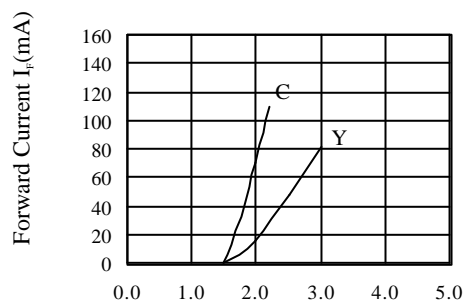


FIG.4 FORWARD CURRENT VS. FORWARD VOLTAGE