

**0.36 inch ( 9.14 mm )**

**SINGLE DIGIT NUMERIC LED DISPLAYS**

**UVS-36X SERIES**

**DESCRIPTION**

The UVS-360/367 is 0.36 inch (9.14mm) height single digit display.

Choices of five colors-high efficiency red/bright red/green/yellow/red orange.

High efficiency red and bright red displays have red face and red segments.

Green,yellow and red orange displays have gray face and white segments.

The bright red and 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 segments.
- Excellent characters appearance
- Low power requirement

**DEVICES**

| PART NO. | DESCRIPTION    | PACKAGE DIMENSION | INTERNAL CIRCUIT DIAGRAM |
|----------|----------------|-------------------|--------------------------|
| UVS-360  | Common Anode   | Fig. 1            | Fig. 2                   |
| UVS-367  | Common Cathode |                   |                          |

**ABSOLUTE MAXIMUM RATINGS**

@ T<sub>A</sub>=25 °C

| PARAMETER  | HLEFF.<br>RED | BRIGHT<br>RED | GREEN | YELLOW | RED<br>ORANGE | UNIT  |
|--|---------------|---------------|-------|--------|---------------|-------|
| Power Dissipation Per Segment  | 75            | 40            | 75    | 60     | 75            | mW    |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle. ,0.1ms pulse width) | 100           | 60            | 100   | 80     | 100           | mA    |
| Continuous Forward Current Per Segment                                     | 25            | 15            | 25    | 20     | 25            | mA    |
| Derating Linear From 25°C Per Segment                                      | 0.33          | 0.2           | 0.33  | 0.27   | 0.33          | mA/°C |
| Reverse Voltage Per Segment  | 5             | 5             | 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    |               |               |       |        |               |       |

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**PACKAGE DIMENSIONS**

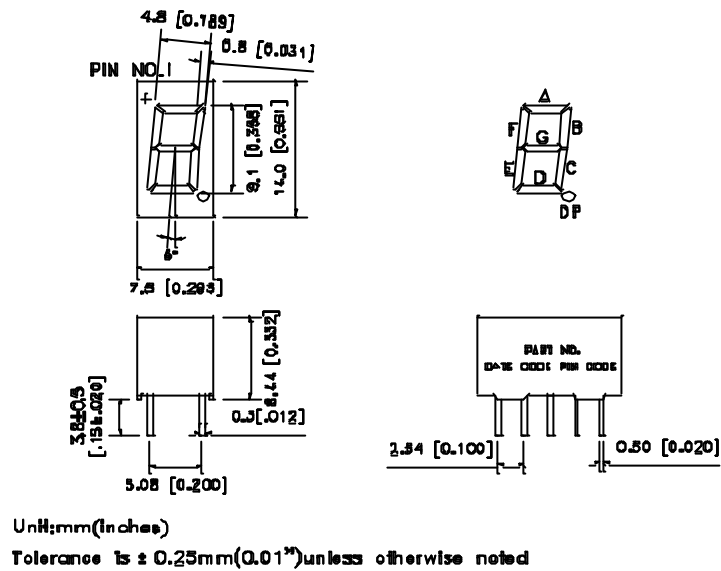


Fig. 1

**INTERNAL CIRCUIT DIAGRAM**

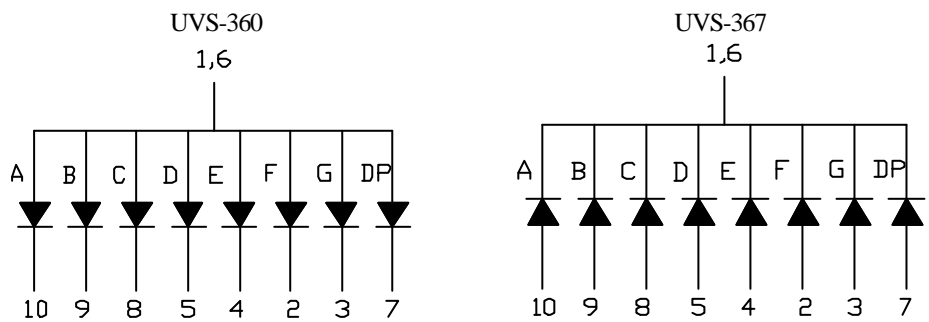


Fig. 2

**0.36 inch ( 9.14 mm )**

## ***SINGLE DIGIT NUMERIC LED DISPLAYS      UVS-36X SERIES***

### **PIN CONNECTION**

| PIN | CONNECTION       |                    |
|-----|------------------|--------------------|
|     | UVS-360          | UVS-367            |
| 1   | COMMON ANODE * 1 | COMMON CATHODE * 1 |
| 2   | CATHODE F        | ANODE F            |
| 3   | CATHODE G        | ANODE G            |
| 4   | CATHODE E        | ANODE E            |
| 5   | CATHODE D        | ANODE D            |
| 6   | COMMON ANODE * 1 | COMMON CATHODE * 1 |
| 7   | CATHODE D . P .  | ANODE D . P .      |
| 8   | CATHODE C        | ANODE C            |
| 9   | CATHODE B        | ANODE B            |
| 10  | CATHODE A        | ANODE A            |

**NOTES: 1. PIN 1 & 6 are internally connected.**

### **ELECTRICAL/OPTICAL CHARACTERISTICS**

#### **HI.EFF. RED(UVS-360HR / 367HR)**

@ T<sub>A</sub>=25°C

| PARAMETER                         | SYMBOL              | MIN. | TYP.    | MAX. | UNIT | TEST CONDITION         |
|-----------------------------------|---------------------|------|---------|------|------|------------------------|
| Average Luminous Intensity        | I <sub>V</sub>      | 800  | 2000    |      | μcd  | I <sub>F</sub> = 10 mA |
| Peak Emission Wavelength          | λ <sub>p</sub> /Hue |      | 635/623 |      | nm   | I <sub>F</sub> = 20 mA |
| Spectral Line Half-Width          | Δλ                  |      | 40      |      | nm   | I <sub>F</sub> = 20 mA |
| Forward Voltage, Per Segment      | V <sub>F</sub>      |      | 2.1     | 2.6  | V    | I <sub>F</sub> = 20 mA |
| Reverse Current, Per Segment      | I <sub>R</sub>      |      |         | 100  | μA   | V <sub>R</sub> = 5 V   |
| Luminous Intensity Matching Ratio | I <sub>V</sub> - m  |      |         | 2:1  |      | I <sub>F</sub> = 10 mA |

#### **BRIGHT RED(UVS-360P / 360P)**

@ T<sub>A</sub>=25°C

| PARAMETER                         | SYMBOL              | MIN. | TYP.    | MAX. | UNIT | TEST CONDITION         |
|-----------------------------------|---------------------|------|---------|------|------|------------------------|
| Average Luminous Intensity        | I <sub>V</sub>      | 320  | 750     |      | μcd  | I <sub>F</sub> = 10 mA |
| Peak Emission Wavelength          | λ <sub>p</sub> /Hue |      | 697/657 |      | nm   | I <sub>F</sub> = 20 mA |
| Spectral Line Half-Width          | Δλ                  |      | 90      |      | nm   | I <sub>F</sub> = 20 mA |
| Forward Voltage, Per Segment      | V <sub>F</sub>      |      | 2.1     | 2.6  | V    | I <sub>F</sub> = 20 mA |
| Reverse Current, Per Segment      | I <sub>R</sub>      |      |         | 100  | μA   | V <sub>R</sub> = 5 V   |
| Luminous Intensity Matching Ratio | I <sub>V</sub> - m  |      |         | 2:1  |      | I <sub>F</sub> = 10 mA |

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**ELECTRICAL/OPTICAL CHARACTERISTICS**

**GREEN (UVS-360G / 367G)**

@ T<sub>A</sub>=25 °C

| PARAMETER                         | SYMBOL              | MIN. | TYP.    | MAX. | UNIT | TEST CONDITION         |
|-----------------------------------|---------------------|------|---------|------|------|------------------------|
| Average Luminous Intensity        | I <sub>V</sub>      | 800  | 2000    |      | mcd  | I <sub>F</sub> = 10 mA |
| 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, Per Segment      | V <sub>F</sub>      |      | 2.1     | 2.6  | V    | I <sub>F</sub> = 20 mA |
| Reverse Current, Per Segment      | I <sub>R</sub>      |      |         | 100  | mA   | V <sub>R</sub> = 5 V   |
| Luminous Intensity Matching Ratio | I <sub>v</sub> - m  |      |         | 2:1  |      | I <sub>F</sub> = 10 mA |

**YELLOW(UVS-360Y / 367Y)**

@ T<sub>A</sub>=25 °C

| PARAMETER                         | SYMBOL              | MIN. | TYP.    | MAX. | UNIT | TEST CONDITION         |
|-----------------------------------|---------------------|------|---------|------|------|------------------------|
| Average Luminous Intensity        | I <sub>V</sub>      | 800  | 2000    |      | μcd  | I <sub>F</sub> = 10 mA |
| Peak Emission Wavelength          | λ <sub>p</sub> /Hue |      | 585/588 |      | nm   | I <sub>F</sub> = 20 mA |
| Spectral Line Half-Width          | Δλ                  |      | 35      |      | nm   | I <sub>F</sub> = 20 mA |
| Forward Voltage, Per Segment      | V <sub>F</sub>      |      | 2.1     | 2.6  | V    | I <sub>F</sub> = 20 mA |
| Reverse Current, Per Segment      | I <sub>R</sub>      |      |         | 100  | μA   | V <sub>R</sub> = 5 V   |
| Luminous Intensity Matching Ratio | I <sub>v</sub> - m  |      |         | 2:1  |      | I <sub>F</sub> = 10 mA |

**RED ORANGE(UVS-360E / 367E)**

@ T<sub>A</sub>=25 °C

| PARAMETER                         | SYMBOL              | MIN. | TYP.    | MAX. | UNIT | TEST CONDITION         |
|-----------------------------------|---------------------|------|---------|------|------|------------------------|
| Average Luminous Intensity        | I <sub>V</sub>      | 800  | 2000    |      | μcd  | I <sub>F</sub> = 10 mA |
| Peak Emission Wavelength          | λ <sub>p</sub> /Hue |      | 630/621 |      | nm   | I <sub>F</sub> = 20 mA |
| Spectral Line Half-Width          | Δλ                  |      | 40      |      | nm   | I <sub>F</sub> = 20 mA |
| Forward Voltage, Per Segment      | V <sub>F</sub>      |      | 2.0     | 2.6  | V    | I <sub>F</sub> = 20 mA |
| Reverse Current, Per Segment      | I <sub>R</sub>      |      |         | 100  | μA   | V <sub>R</sub> = 5 V   |
| Luminous Intensity Matching Ratio | I <sub>v</sub> - m  |      |         | 2:1  |      | I <sub>F</sub> = 10 mA |

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## **SINGLE DIGIT NUMERIC LED DISPLAYS UVS-36X SERIES**

### **TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES**

( Ambient Temperature =25°C Unless Otherwise Noted )

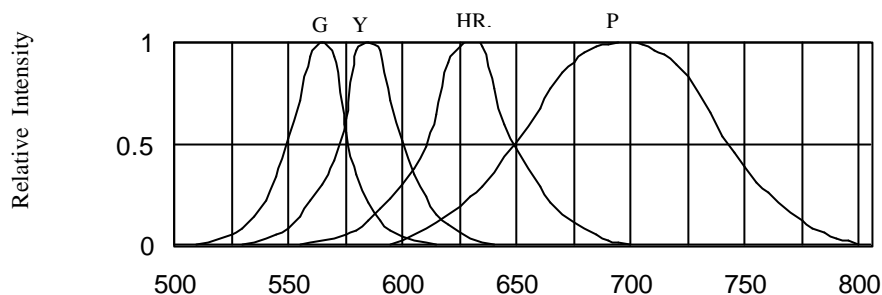


FIG.1 RELATIVE LUMINOUS INTENSITY VS. WAVELENGTH

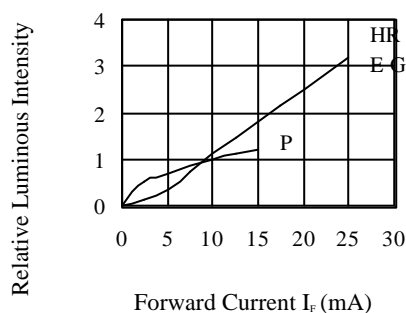


FIG.2 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

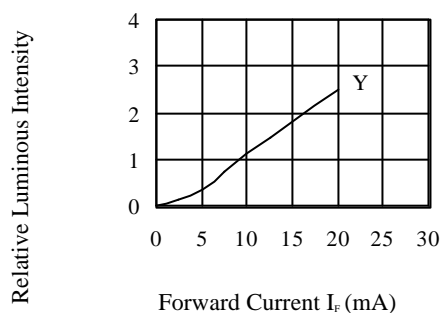


FIG.2-1 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

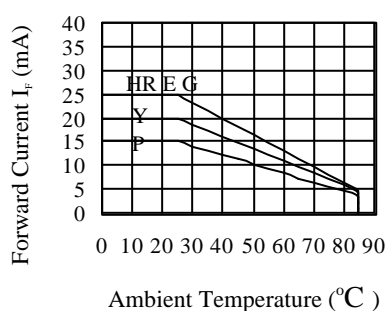


FIG.3 ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

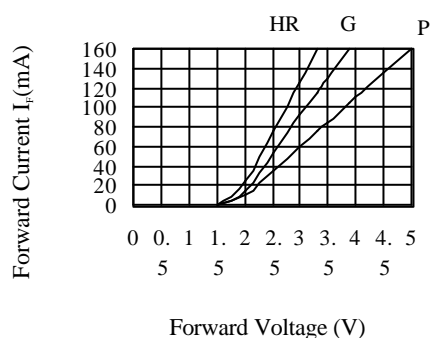


FIG.4 FORWARD CURRENT VS. FORWARD VOLTAGE