

0.36 inch (9.14 mm) SINGLE DIGIT NUMERIC LED DISPLAY UVS-31XA SERIES

DESCRIPTION

The UVS-312A/313A/315A is 0.3 inch (7.62mm) height single digit display.

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

High efficiency red displays has red face and red segments. Bright red displays has black face and red segments.

Green and yellow displays have gray face and white segments. Red orange displays has orange face and orange 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

- Industry Standard Size
- Wide Viewing angle
- Continuous uniform segments.
- Excellent characters appearance
- Low power requirement

DEVICES

PART NO.	DESCRIPTION	PACKAGE DIMENSION	INTERNAL CIRCUIT DIAGRAM
UVS-312A	Common Anode	Fig. 1	Fig. 2
UVS-313A	Common Cathode		
UVS-315A	Common Cathode		

ABSOLUTE MAXIMUM RATINGS

@ T_A=25°C

PARAMETER	H.I.EFF. RED	BRIGHT RED	GREEN	YELLOW	RED ORANGE	UNIT
Power Dissipation Per Segment	75	40	75	60	75	mW
Peak Forward Current Per Segment (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

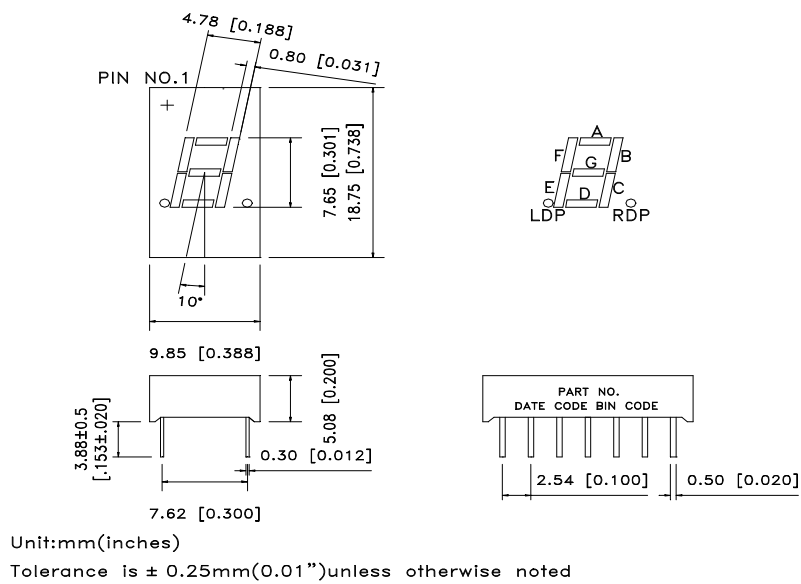


Fig. 1

INTERNAL CIRCUIT DIAGRAM

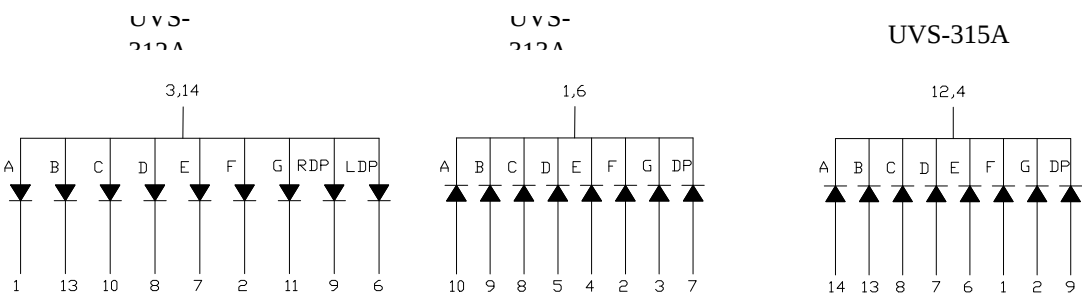


Fig. 2

0.36 inch (9.14 mm)

SINGLE DIGIT NUMERIC LED DISPLAYS UVS-31XA SERIES

PIN CONNECTION

PIN	CONNECTION		
	UVS-312A	UVS-313A	UVS-315A
1	CATHODE A	COMMON CATHODE *2	ANODE F
2	CATHODE F	ANODE F	ANODE G
3	COMMON ANODE * 1	ANODE G	NO PIN
4	NO PIN	ANODE E	COMMON CATHODE *3
5	NO PIN	ANODE D	NO PIN
6	CATHODE L . D . P .	COMMON CATHODE *2	ANODE E
7	CATHODE E	ANODE D . P .	ANODE D . P .
8	CATHODE D	ANODE C	ANODE C
9	CATHODE R . D . P .	ANODE B	ANODE D
10	CATHODE C	ANODE A	NO PIN
11	CATHODE G	-	NO PIN
12	NO PIN	-	COMMON CATHODE *3
13	CATHODE B	-	ANODE B
14	COMMON ANODE * 1	-	ANODE A

NOTES: 1. PIN 3 & 14 are internally connected.

2. PIN 1 & 6 are internally connected.

3. PIN 4 & 12 are internally connected.

ELECTRICAL/OPTICAL CHARACTERISTICS

HI.EFF. RED (UVS-312AHR / 313AHR / 315AHR)

@ T_A=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _V	870	2000		μcd	I _F = 10 mA
Peak Emission Wavelength	λ _p /Hue		635/623		nm	I _F = 20 mA
Spectral Line Half-Width	Δλ		40		nm	I _F = 20 mA
Forward Voltage, Per Segment	V _F		2.0	2.6	V	I _F = 20 mA
Reverse Current, Per Segment	I _R			100	μA	V _R = 5 V
Luminous Intensity Matching Rat	I _V - m			2:1		I _F = 10 mA

BRIGHT RED (UVS-312AP / 313AP / 315AP)

@ T_A=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _V	340	750		μcd	I _F = 10 mA
Peak Emission Wavelength	λ _p /Hue		697/657		nm	I _F = 20 mA
Spectral Line Half-Width	Δλ		90		nm	I _F = 20 mA
Forward Voltage, Per Segment	V _F		2.1	2.6	V	I _F = 20 mA
Reverse Current, Per Segment	I _R			100	μA	V _R = 5 V
Luminous Intensity Matching Rat	I _V - m			2:1		I _F = 10 mA

UNI

Unity Opto Technology Co., Ltd.

11/14/2000

0.36 inch (9.14 mm)

SINGLE DIGIT NUMERIC LED DISPLAYS UVS-31XA SERIES

ELECTRICAL/OPTICAL CHARACTERISTICS

GREEN (UVS-312AG / 313AG / 315AG)

@ T_A=25 °C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _V	870	2000		mcd	I _F = 10 mA
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, Per Segment	V _F		2.1	2.6	V	I _F = 20 mA
Reverse Current, Per Segment	I _R			100	mA	V _R = 5 V
Luminous Intensity Matching Ratio	I _v - m			2:1		I _F = 10 mA

YELLOW (UVS-312AY / 313AY / 315AY)

@ T_A=25 °C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _V	870	2000		μcd	I _F = 10 mA
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, Per Segment	V _F		2.1	2.6	V	I _F = 20 mA
Reverse Current, Per Segment	I _R			100	μA	V _R = 5 V
Luminous Intensity Matching Ratio	I _v - m			2:1		I _F = 10 mA

RED ORANGE (UVS-312AE / 313AE / 315AE)

@ T_A=25 °C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _V	870	2000		μcd	I _F = 10 mA
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, Per Segment	V _F		2.0	2.6	V	I _F = 20 mA
Reverse Current, Per Segment	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)

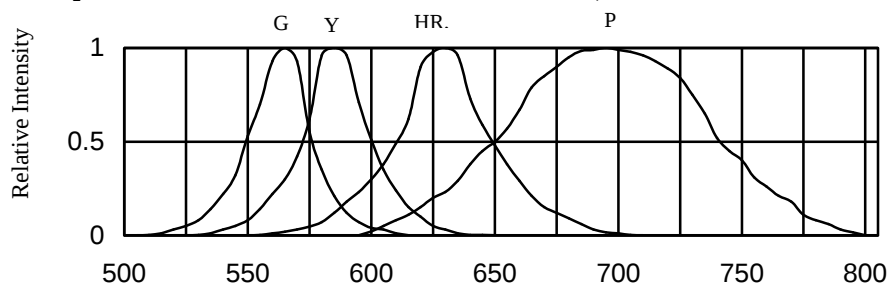


FIG.1 RELATIVE LUMINOUS INTENSITY VS.
WAVELENGTH

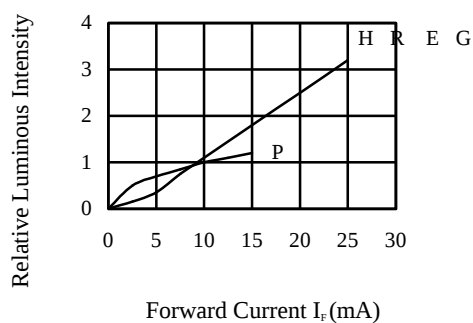


FIG.2 RELATIVE LUMINOUS INTENSITY VS.
FORWARD CURRENT

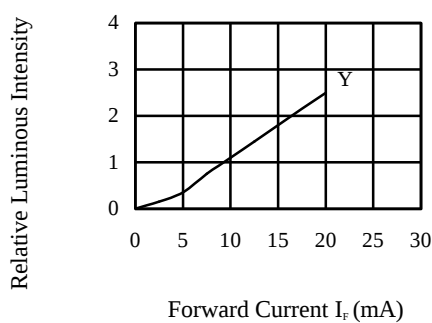


FIG.2-1 RELATIVE LUMINOUS INTENSITY VS.
FORWARD CURRENT

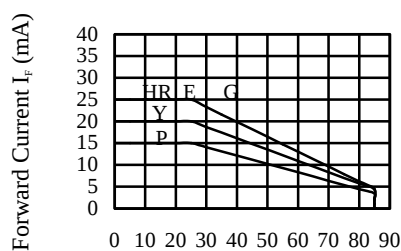


FIG.3 ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

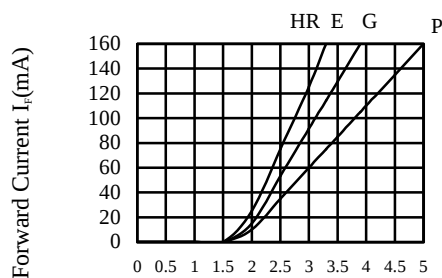


FIG.4 FORWARD CURRENT VS.
FORWARD VOLTAGE