American Opto Plus LED Corp.

0.56” Case Mold Type LED Display

A561UEPG-5 B/W

C561UEPG-5 B/W

EDIT HISTORY

Version A: May. 22, 2015

Preliminary Spec.

Manufacture	Examination	Approving

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

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A561UEPG-5 B/W

C561UEPG-5 B/W

FEATURES

- 0.56 inch (14.20 mm) Digit Height.
- Low current operation..
- Case mold type.
- Black face, White segment.
- RoHS compliant, Pb Free.

DESCRIPTION

The A561UEPG-5 B/W & C561UEPG-5 B/W is a 0.56 inch (14.20 mm) height single 7-segment display.

This device utilizes Super Bright Red LED chip which are made AlInGaP, substrate. and Pure Green LED chip which are made from InGaN on a transparent GaN substrate.

The display has Black face, White segment.

DEVICE

PART NO Super Bright Red & Pure Green	DESCRIPTION
A561UEPG-5 B/W	Common Anode
C561UEPG-5 B/W	Common Cathode

RoHS Compliance **Pb free.**

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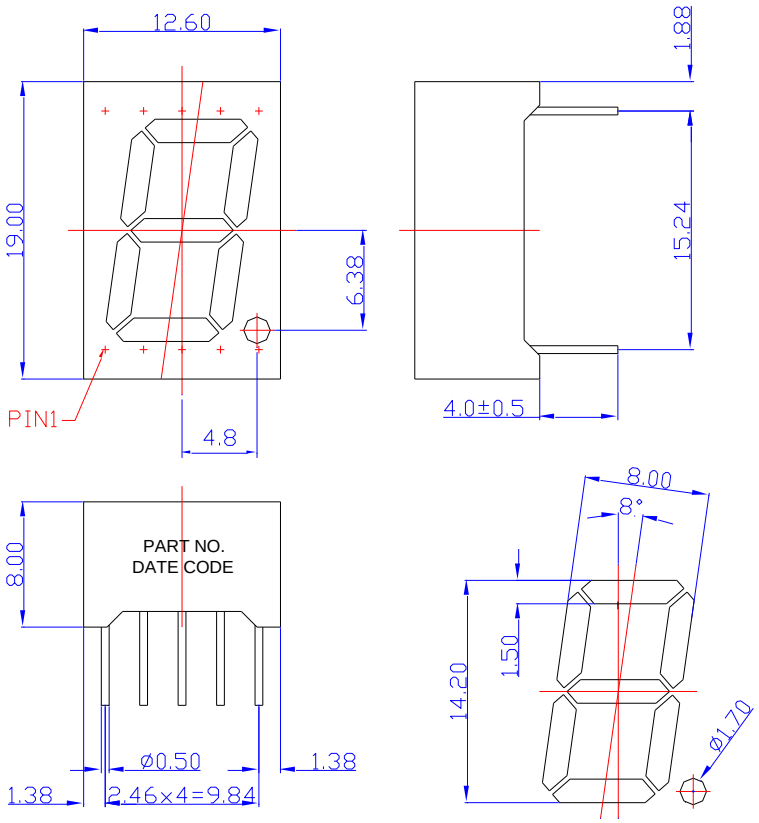
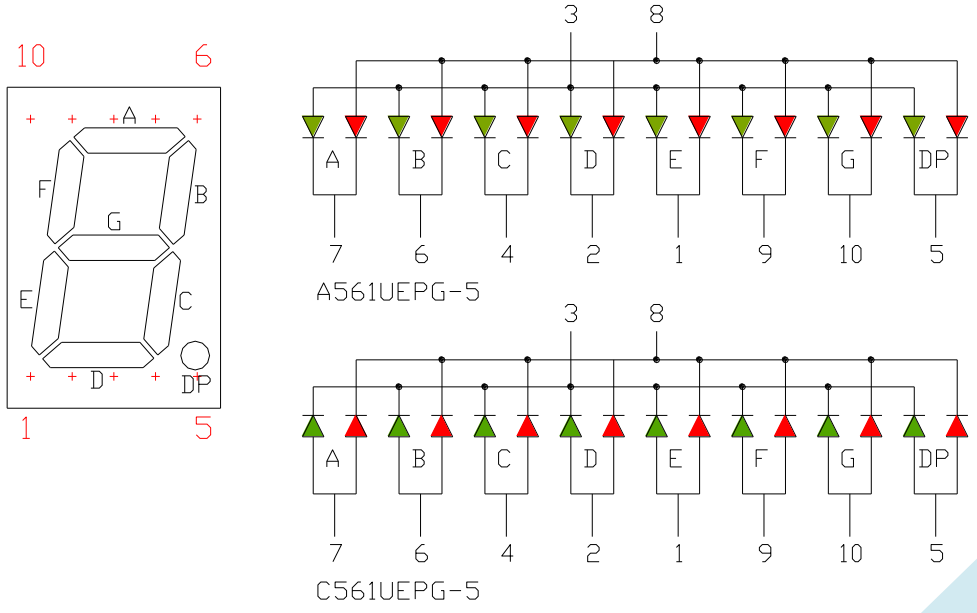
MECHANICAL DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are± 0.25 mm unless otherwise noted.

TYPICAL INTERNAL EQUIVALENT CIRCUIT



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UE: SUPER BRIGHT RED (AlInGaP)

ABSOLUTE MAXIMUM RATING AT Ta=25ºC

Parameter	Symbol	Super Bright Red	Unit
Power dissipation per dice	P_{AD}	70	mW
Derating liner from 25°C per dice	-	0.33	mA / °C
Continuous forward current per dice	I_{AF}	25	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I_{PF}	90	mA
Reverse voltage per dice	V_R	5	V
Operating temperature	T_{OPR}	-25 to +85	°C
Storage temperature	T_{STG}	-25 to +85	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25ºC

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	V_F	I_F =20mA	1.75	-	2.6	V
Reverse current	I_R	V_R =5V	-	-	10	μA
Dominant Wavelength	λ_D	I_F =20mA	616	-	630	nm
Average Luminous Intensity	I_V	I_F =20mA	-	250	-	mcd
Spectrum Radiation Bandwidth	$\Delta\lambda$	I_F =20mA	-	20	-	nm

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● PG: PURE GREEN (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25ºC

Parameter	Symbol	Pure Green	Unit
Power dissipation per dice	P_{AD}	120	mW
Derating liner from 25°C per dice	-	0.4	mA / °C
Continuous forward current per dice	I_{AF}	30	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I_{PF}	120	mA
Reverse voltage per dice	V_R	5	V
Operating temperature	T_{OPR}	-25 to +85	°C
Storage temperature	T_{STG}	-25 to +85	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25ºC

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	V_F	I_F =20mA	2.8	3.2	4.0	V
Reverse current	I_R	V_R =8V	-	-	10	μA
Dominant wavelength	λ_D	I_F =20mA	500	525	535	nm
Luminous intensity	I_V	I_F =20mA	-	200	-	mcd
Spectral radiation bandwidth	$\Delta\lambda$	I_F =20mA	-	30	-	nm

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● UE: SUPER BRIGHT RED (AlInGaP) CURVE

Typical Electro-optical Characteristic Curves

(25℃ Free Air Temperature Unless Otherwise Specified)

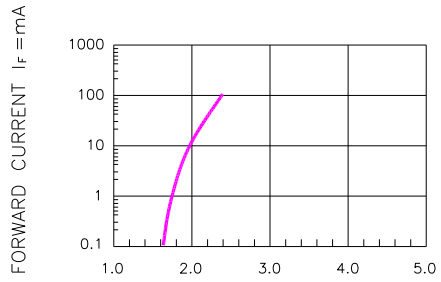

Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

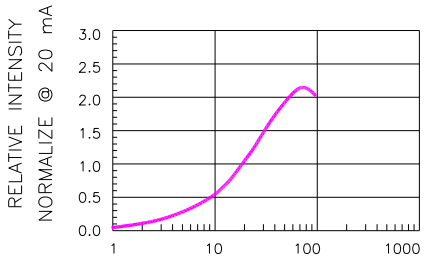

Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

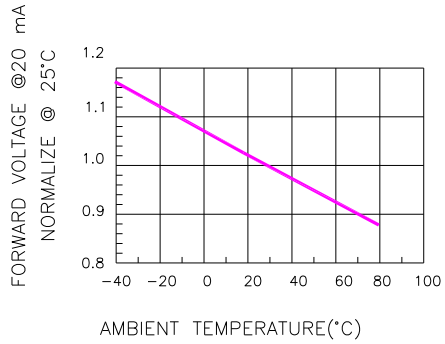

Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

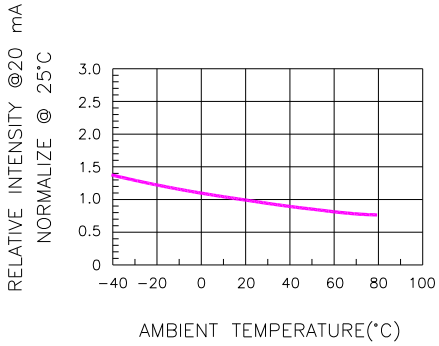

Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

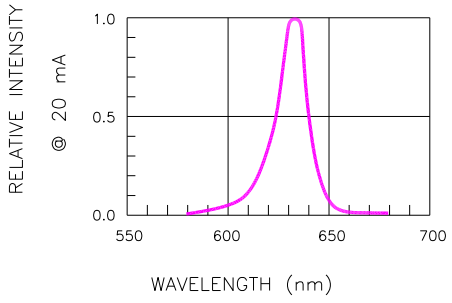

Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

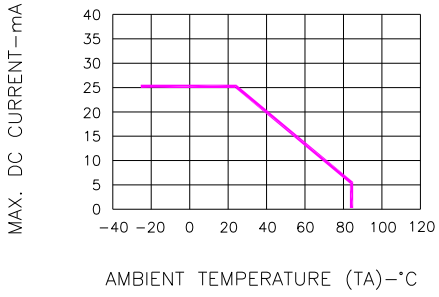

Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

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● PG: PURE GREEN (InGaN/GaN) CURVE

Typical Electro-optical Characteristic Curves

(25℃ Free Air Temperature Unless Otherwise Specified)

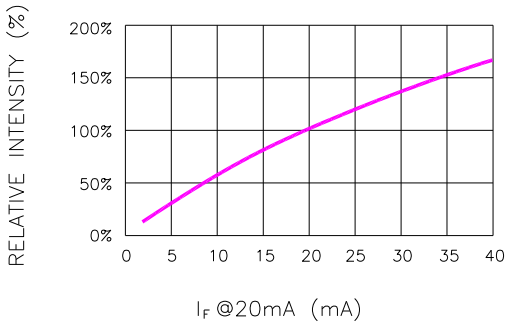


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

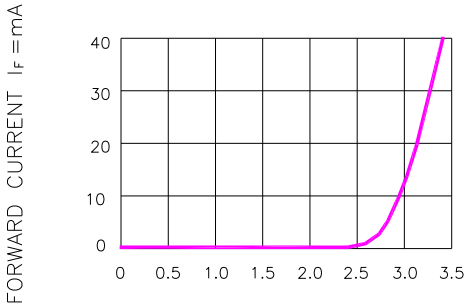


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

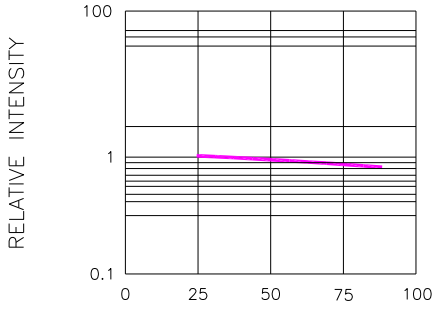


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE,10ms PERIOD)

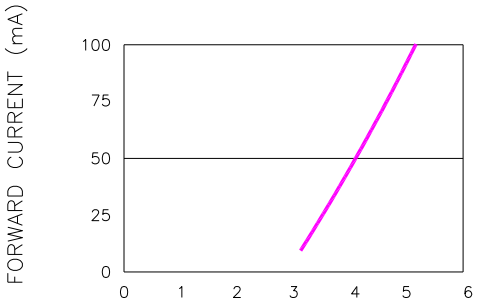


Fig.4 PEAK FORWARD VOLTAGE VS.FORWARD(100us TEST PULSE, 1% DUTY CYCLE)

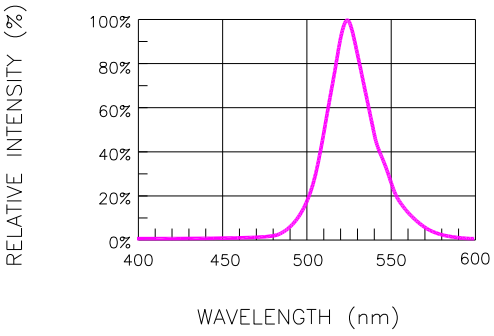


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

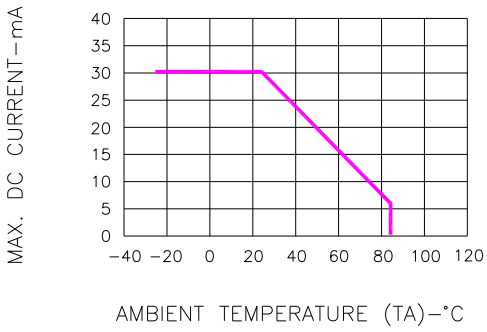
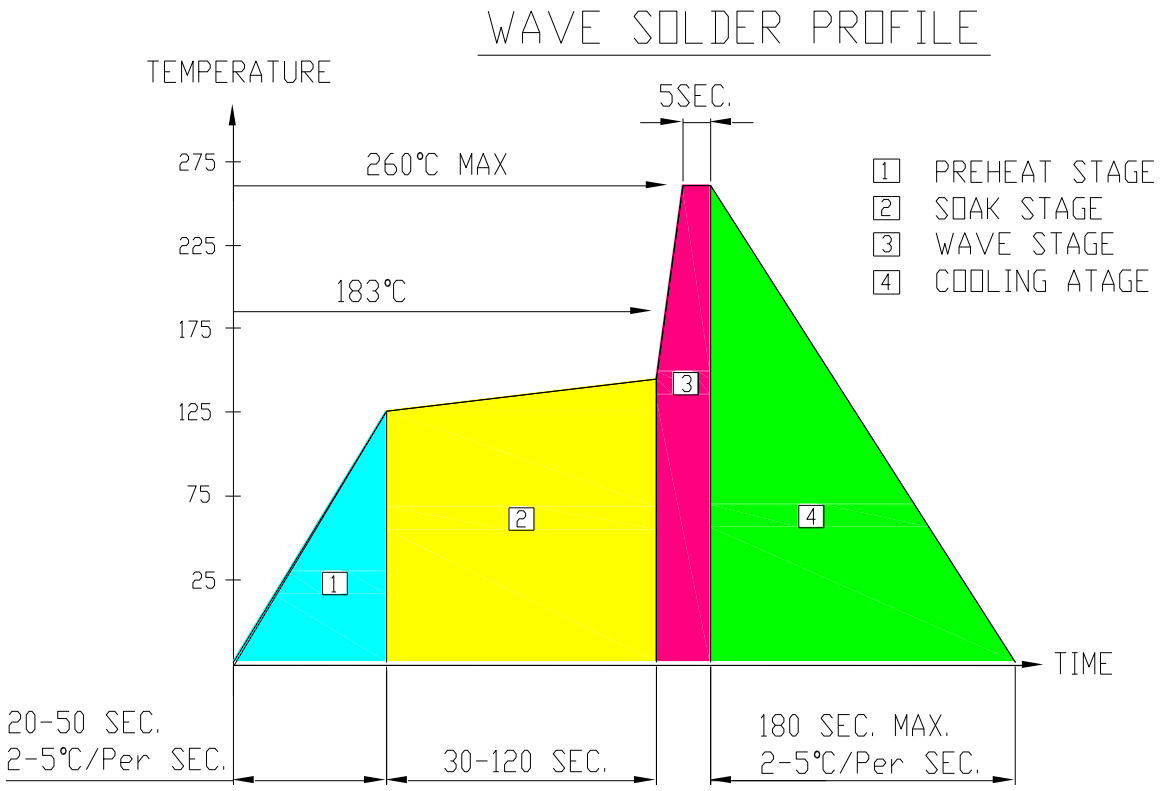


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

RECOMMEND SOLDERING PROFILE



SOLDERING IRON

Basic spec is ≦4 sec when 260°C. If temperature is higher, time should be shorter (+10°C→1 sec). Power dissipation of Iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C.

REWORK

Customer must finish rework within ≦4 sec under 245℃.