



American Opto Plus LED Corp.
0.4" Case mold Type LED Display
AOP A411YG G/W(TUBE)
AOP C411YG G/W(TUBE)

● **EDIT HISTORY**

Version A: Jan. 14, 2014

Preliminary Spec.

Version B: Jun. 24, 2019

Add package dimensions.

Prepared by	Checked by	Approved by



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● **FEATURES**

- 0.40 inch (10.16 mm) Digit Height.
- Low current operation.
- Case mold type.
- Gray face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The A411YG G/W & C411YG G/W is a 0.40 inch (10.16 mm) height single 7-segment display.

This device utilizes Super Bright Yellow Green LED chip which are made from AlGaInP on a transparent GaAs, substrate. The display has Gray face, White segment.

● **DEVICE**

PART NO Super Bright Yellow Green	DESCRIPTION
A411YG G/W	Common Anode
C411YG G/W	Common Cathode

RoHS Compliance



Pb free.





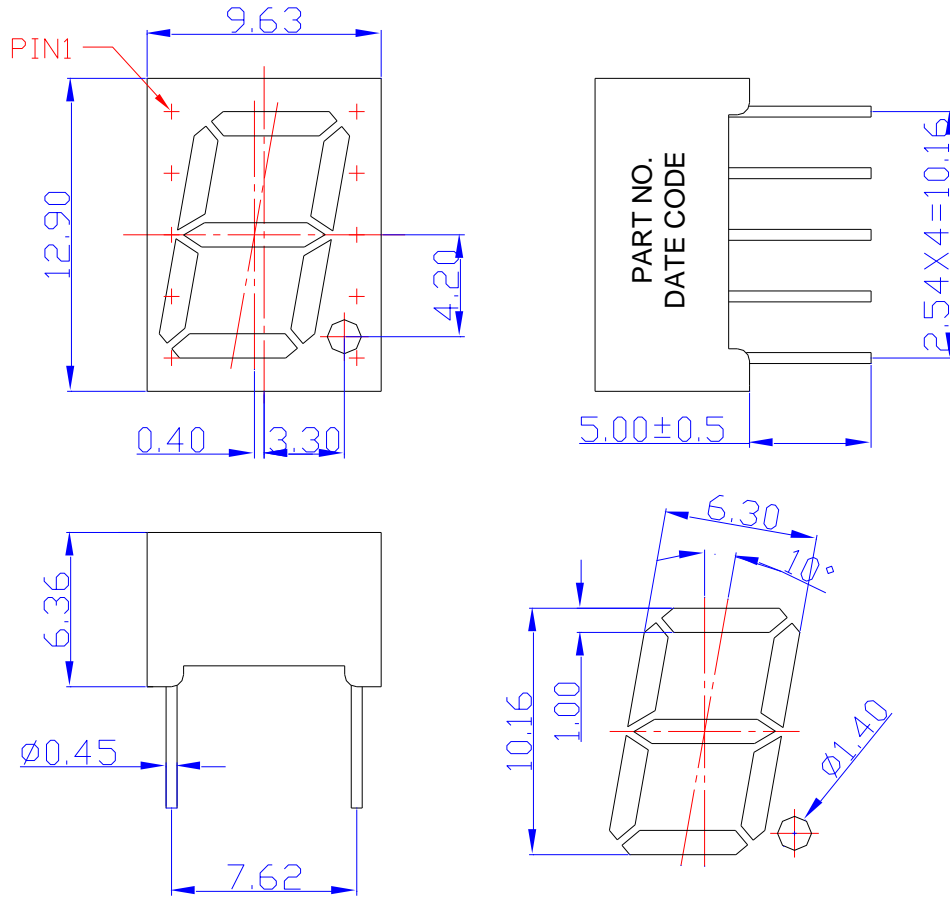
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0.4" Case mold Type LED Display

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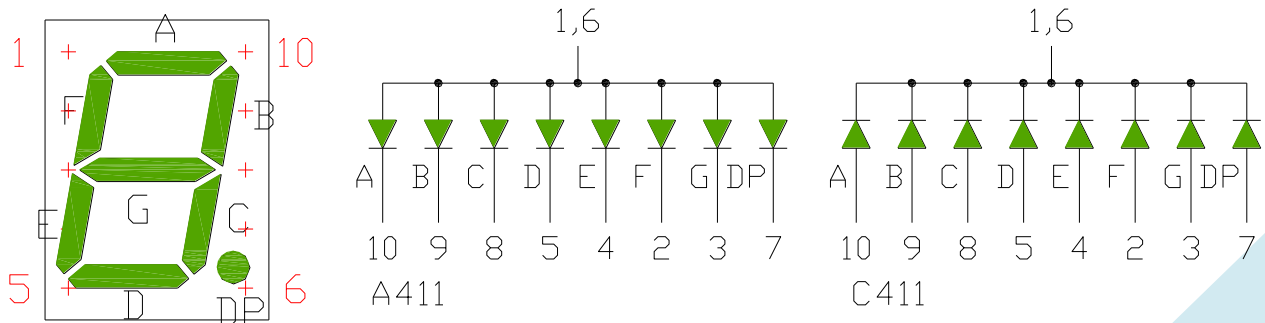
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● MECHANICAL DIMENSIONS



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

● TYPICAL INTERNAL EQUIVALENT CIRCUIT





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● **YG: SUPER BRIGHT YELLOW GREEN (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P_{AD}	48	mW
Continuous forward current	I_{AF}	20	mA
Peak current (duty cycle 1/10, 1kHz)	I_{PF}	40	mA
Reverse voltage	V_R	5	V
Operating temperature	T_{OPR}	-40 to +85	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-40 to +85	$^{\circ}\text{C}$

ELECTRICAL - OPTICAL CHARACTERISTICS AT $T_a=25^{\circ}\text{C}$

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage	V_F	$I_F=20\text{mA}$	-	2.1	2.4	V
Reverse Current	I_R	$V_R=5\text{V}$	-	-	10	μA
Peak Wavelength	λ_P	$I_F=20\text{mA}$	-	573	-	nm
Dominant Wavelength	λ_D	$I_F=20\text{mA}$	-	571	-	nm
Luminous Intensity	I_V	$I_F=20\text{mA}$	-	10	-	mcd
Spectral Line Half-Bandwidth	$\Delta\lambda$	$I_F=20\text{mA}$	-	20	-	nm



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● YG: SUPER BRIGHT YELLOW GREEN (AlGaInP/GaAs) CURVE

Typical Electro-optical Characteristic Curves
(25 °C Free Air Temperature Unless Otherwise Specified)

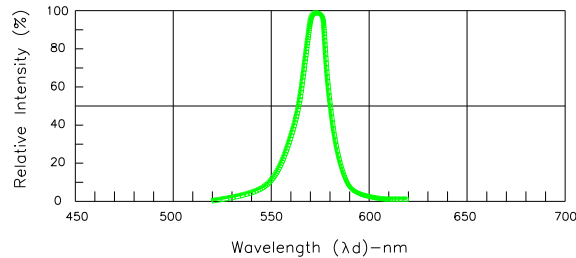


Fig.1-Relative Intensity VS. Wavelength

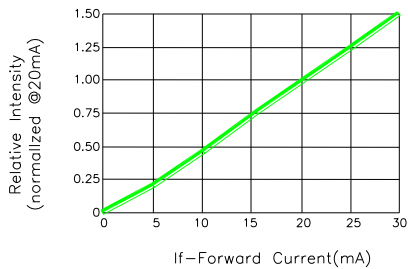


Fig.2-Relative Luminous Intensity vs. Forward Current

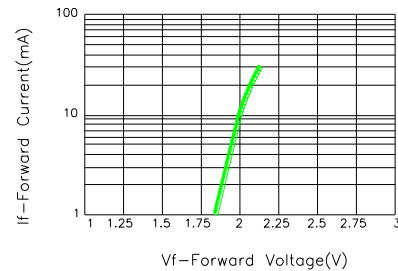


Fig.3-Forward Current vs. Forward Voltage

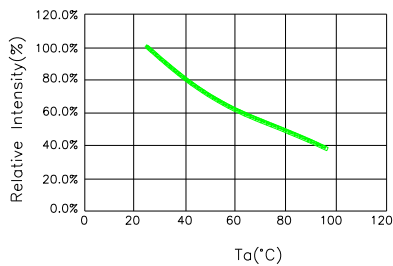


Fig.4-Relative Intensity(@20mA)VS. Ambient Temperature

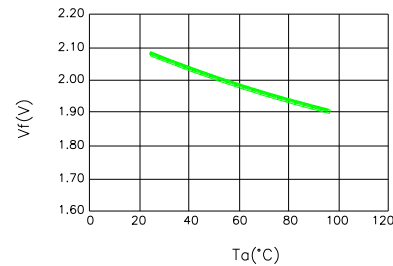


Fig.5-Forward Voltage(@20mA)VS. Ambient Temperature

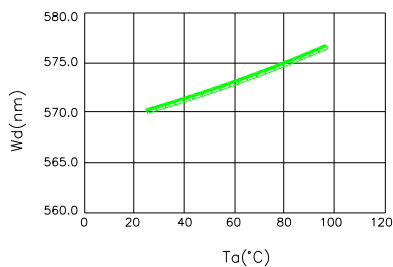


Fig.6-Dominant Wavelength(@20mA)
VS. Ambient Temperature

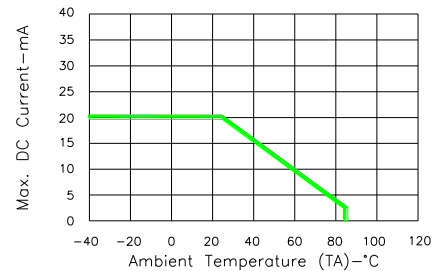
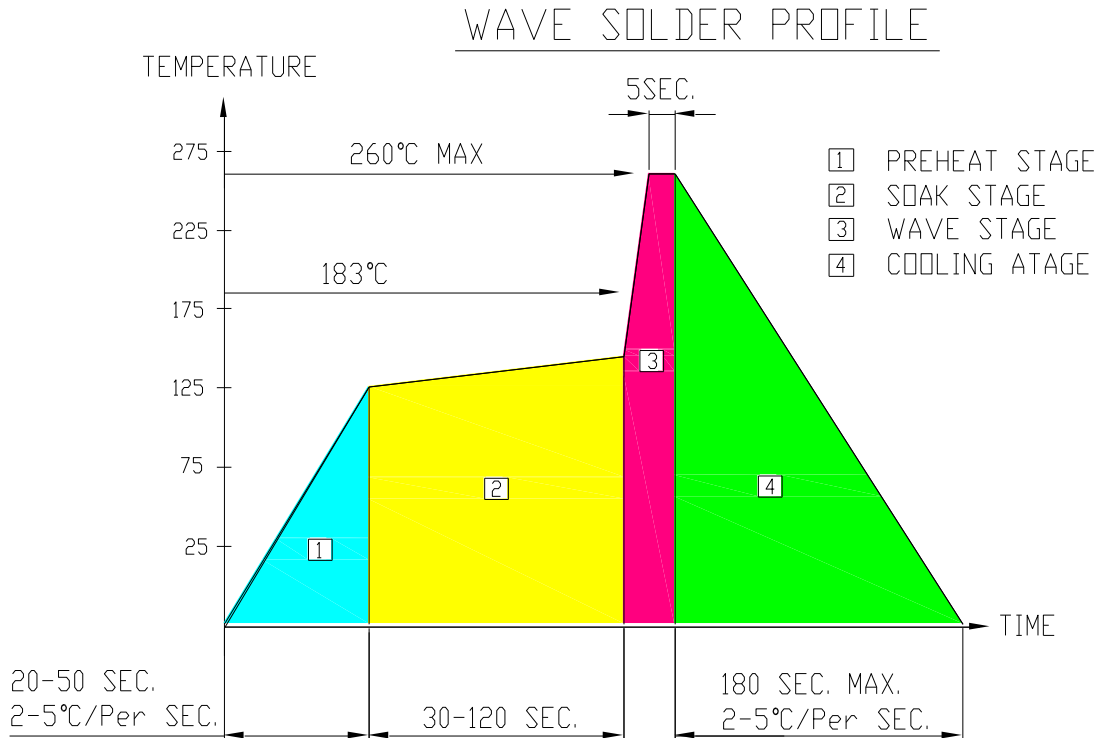


Fig.7-Max. Allowable DC Current
VS. Ambient Temperature



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● **RECOMMEND SOLDERING PROFILE**



● **Note:**

- Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
- Peak wave soldering temperature between 245°C ~ 225°C for 3 sec (5 sec max)
- No more than one wave soldering pass

● **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**

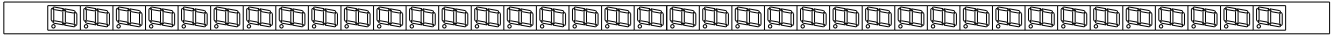
Customer must finish rework within ≤ 3 sec under 350°C.
The head of soldering iron cannot touch copper foil.



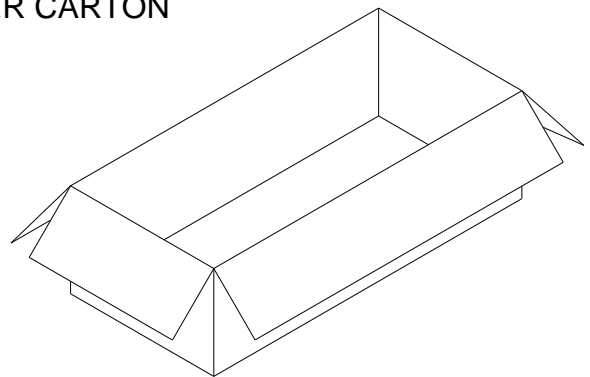
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● **PACKAGE DIMENSIONS**

(1) 38 PCS / 1 NIXIE TUBE

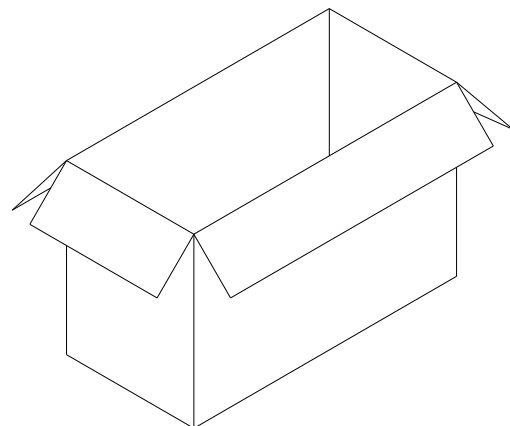


(2) 6498 PCS / 171 (19X9) NIXIE TUBE / 1 INNER CARTON



INNER BOX SIZE : 522 x 240 x 175 mm

(3) 12996 PCS / 342 NIXIE TUBE /
2 INNER CARTON / 1 OUTER CARTON



OUTER BOX SIZE : 540 x 255 x 380 mm