



Opto Plus LED Corp.
0.39" SMD Type LED Display
OPS-D3910SA | OPS-D3911SA

● **EDIT HISTORY**

Version A: Oct. 28, 2020

Preliminary Spec.

Version B: Jun. 14, 2022

1. Modify electrical optical characteristics.
2. Modify curve graph.

Version C: Feb. 11, 2026

1. Modify electrical optical characteristics.
2. Modify curve graph.

Confidential Document

● FEATURES

- 0.39 inch (10.0 mm) digit height.
- SMD type.
- Low current operation.
- RoHS Compliant, Pb Free.

● DESCRIPTION

The device are 0.39 inch (10.0 mm) height Dual digit 7-segment display.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright Amber LED chip which are made from AlGaInP

On a transparent GaAs, substrate.

The device has face and segment option, please refer to **PRODUCT APPEARANCE**.

● DEVICE

PART NO.	DESCRIPTION
OPS-D3910SA-GW	Common Anode Gray face White segment
OPS-D3911SA-GW	Common Cathode Gray face White segment
OPS-D3910SA-BW	Common Anode Black face White segment
OPS-D3911SA-BW	Common Cathode Black face White segment

RoHS Compliance



Pb Free.





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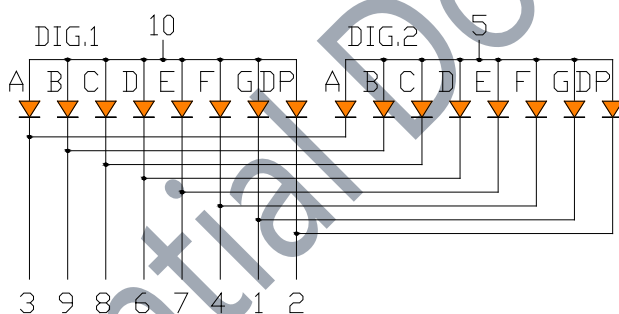
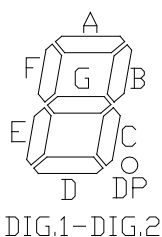
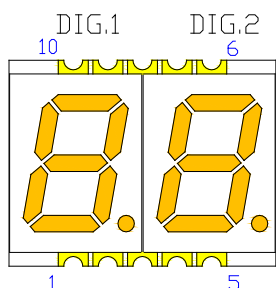
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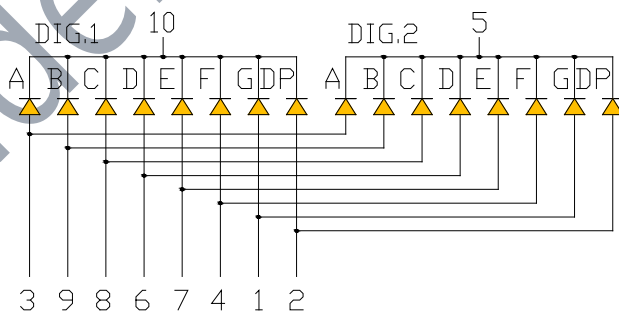
● TYPICAL INTERNAL EQUIVALENT CIRCUIT

Turn On Color

Recommended
Soldering Pattern



OPS-D3910SA (Common Anode)

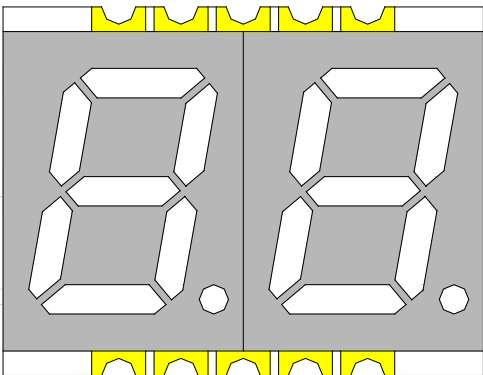
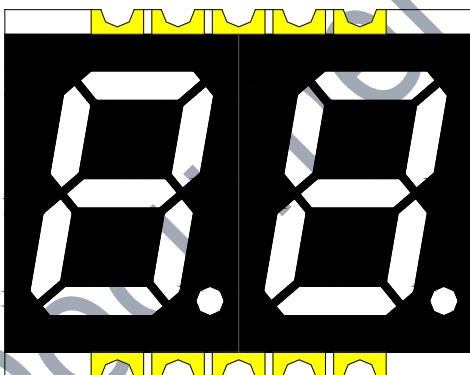


OPS-D3911SA (Common Cathode)

※EMITTED COLOR : SUPER BRIGHT AMBER

● PRODUCT APPEARANCE

The most common reflector color and segment color are show in below diagram.

-GW	-BW
	
※ REFLECTOR COLOR: Gray ※ SEGMENT COLOR: White	※ REFLECTOR COLOR: Black ※ SEGMENT COLOR: White

Opto Plus can customize reflector and segment colors by customer's request. If you have these request please visit www.opledtw.com or contact sales@opledtw.com for more **Standard Product Customization** information.

Part NO. related to reflector and segment colors show as table below.

PART NO.	DESCRIPTION
OPS-D3910SA-GW	Common Anode Gray face White segment
OPS-D3911SA-GW	Common Cathode Gray face White segment
OPS-D3910SA-BW	Common Anode Black face White segment
OPS-D3911SA-BW	Common Cathode Black face White segment

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● SA: SUPER BRIGHT AMBER (AlGaInP/GaAs)

ABSOLUTE MAXIMUM RATING AT Ta=25°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
In-rush current	I_{IR}	40	mA
Supply voltage	V_{DD}	5	V
Reverse voltage	V_R	5	V
Operating temperature	T_{OPR}	-40 to +85	°C
Storage temperature	T_{STG}	-40 to +85	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage, (Per Dice)	V_F	$I_F = 20\text{mA}$	-	2.0	2.4	V
Reverse Current, (Per Dice)	I_R	$V_R = 5\text{V}$	-	-	10	μA
Peak Wavelength	λ_P	$I_F = 20\text{mA}$	-	612	-	nm
Dominant Wavelength	λ_D	$I_F = 20\text{mA}$	601	-	613	nm
Luminous Intensity	I_V	$I_F = 20\text{mA}$	25	-	70	mcd
Spectral Line Half-Bandwidth	$\Delta\lambda$	$I_F = 20\text{mA}$	-	20	-	nm

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● SA: BIN GRADE (Unit : mcd) 20mA

Super Bright Amber	M	N	O
	25.0 - 40.0	40.1 - 55.0	55.1 - 70.0

● SA: HUE GRADE (λ_D : nm)

1	2	3
601.0 - 605.0	605.1 - 609.0	609.1 - 613.0

● AVAILABLE BIN / HUE TABLE

M1	M2	M3
N1	N2	N3
O1	O2	O3

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● SA: SUPER BRIGHT AMBER (AlGaInP/GaAs) CURVE

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

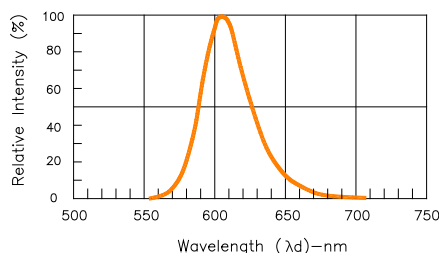


Fig.1—Relative Intensity VS. Wavelength

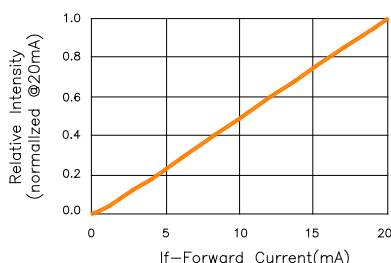


Fig.2—Relative Luminous Intensity vs. Forward Current

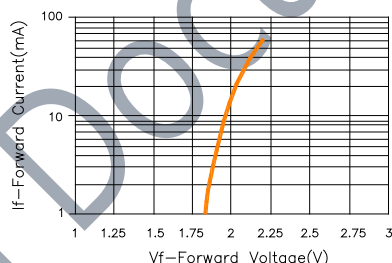


Fig.3—Forward Current vs. Forward Voltage

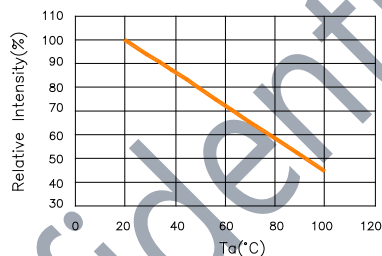


Fig.4—Relative Intensity(@20mA)VS. Ambient Temperature

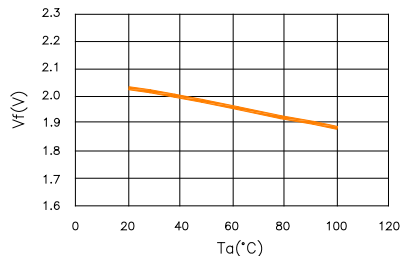


Fig.5—Forward Voltage(@20mA)VS. Ambient Temperature

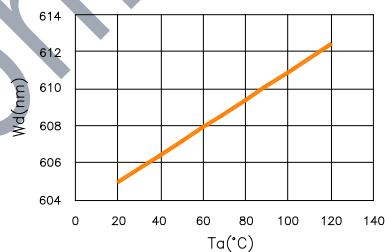


Fig.6—Dominant Wavelength(@20mA)
VS. Ambient Temperature

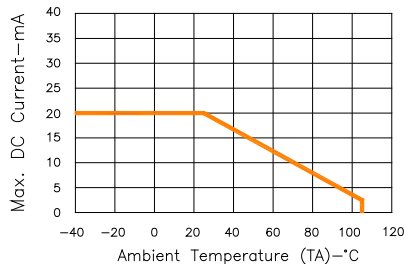
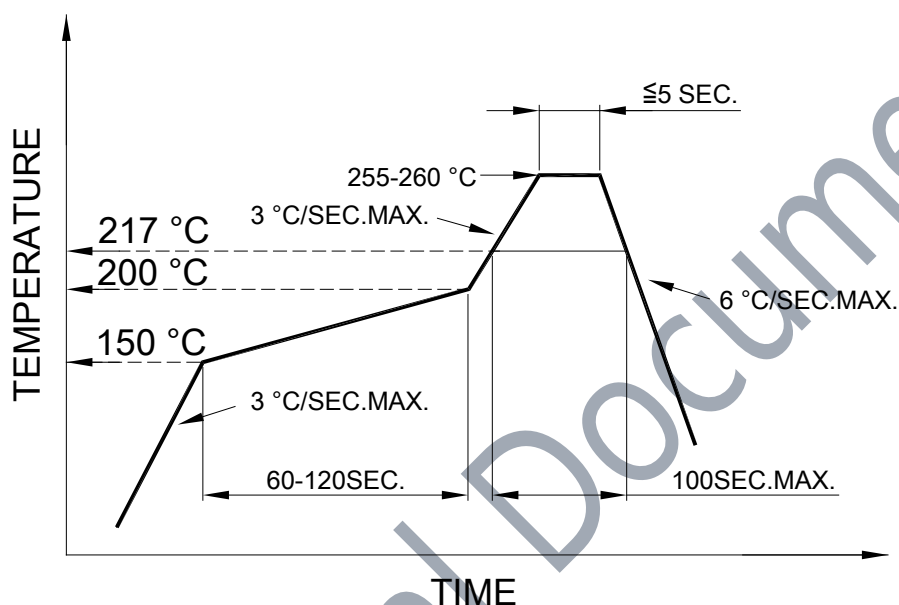


Fig.7—Max. Allowable DC Current
VS. Ambient Temperature

● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



- We recommend the reflow temperature 245°C (+/- 5°C).
The maximum soldering temperature should be limited to 260°C.
- Number of reflow process shall be 2 times or less.

● 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

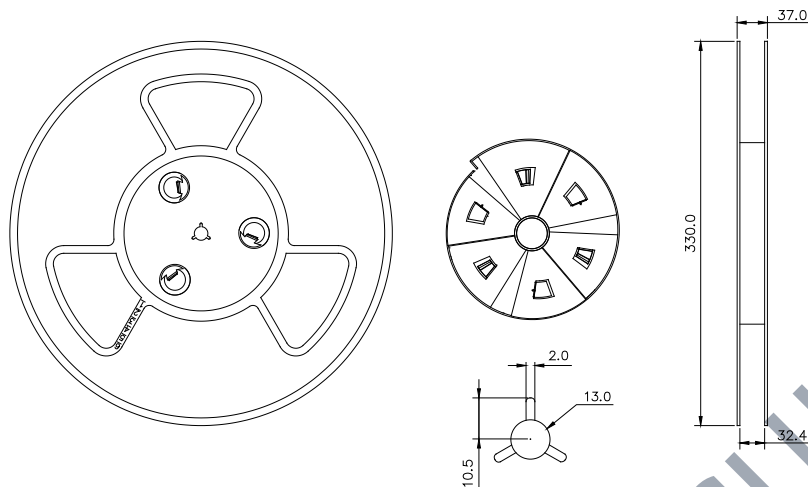
- Customer must finish rework within 3 sec. under 350°C.
- The head of soldering iron cannot touch copper foil.

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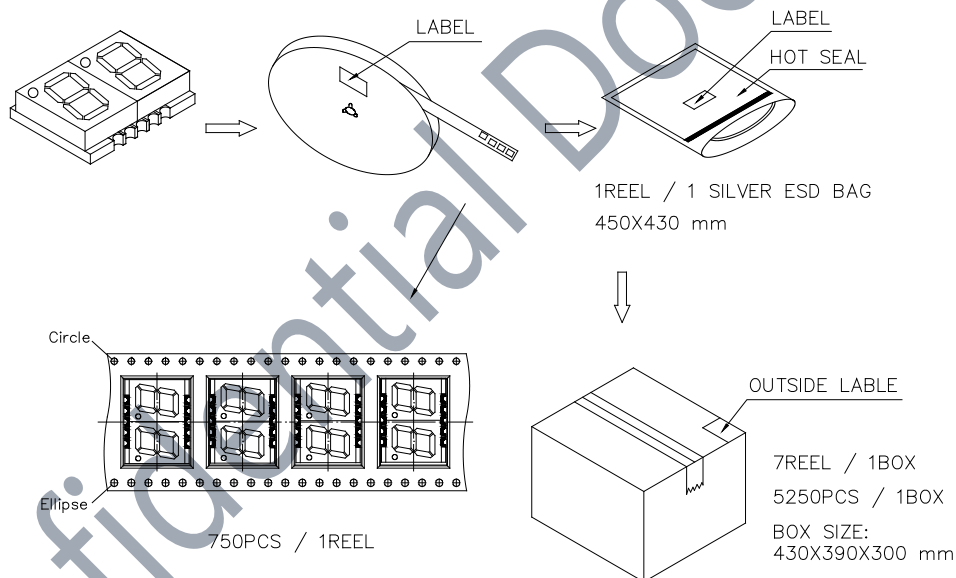
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● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS



● STORAGE CONDITION

In factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION
5°C ~ 30°C	Below 60%RH

After opened and not in factory original sealed bag package

TEMPERATURE CONDITION	HUMIDITY CONDITION	STORAGE TIME
5°C ~ 30°C	Below 60%RH	Within 4 weeks (MSL as level 2a)