



Opto Plus LED Corp.
0.39" SMD Type LED Display
OPS-D3910SPG | OPS-D3911SPG

● **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. 27, 2024

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

Version D: Feb. 11, 2026

Modify electrical optical characteristics.

Confidential Document



Opto Plus LED Corp.

0.39" SMD Type LED Display

OPS-D3910SPG | OPS-D3911SPG

● 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 Pure Green LED chip which are made from InGaN on a Transparent GaN, substrate.

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

● DEVICE

PART NO.		DESCRIPTION
	OPS-D3910SPG-GW	Common Anode Gray face White segment
	OPS-D3911SPG-GW	Common Cathode Gray face White segment
	OPS-D3910SPG-BW	Common Anode Black face White segment
	OPS-D3911SPG-BW	Common Cathode Black face White segment

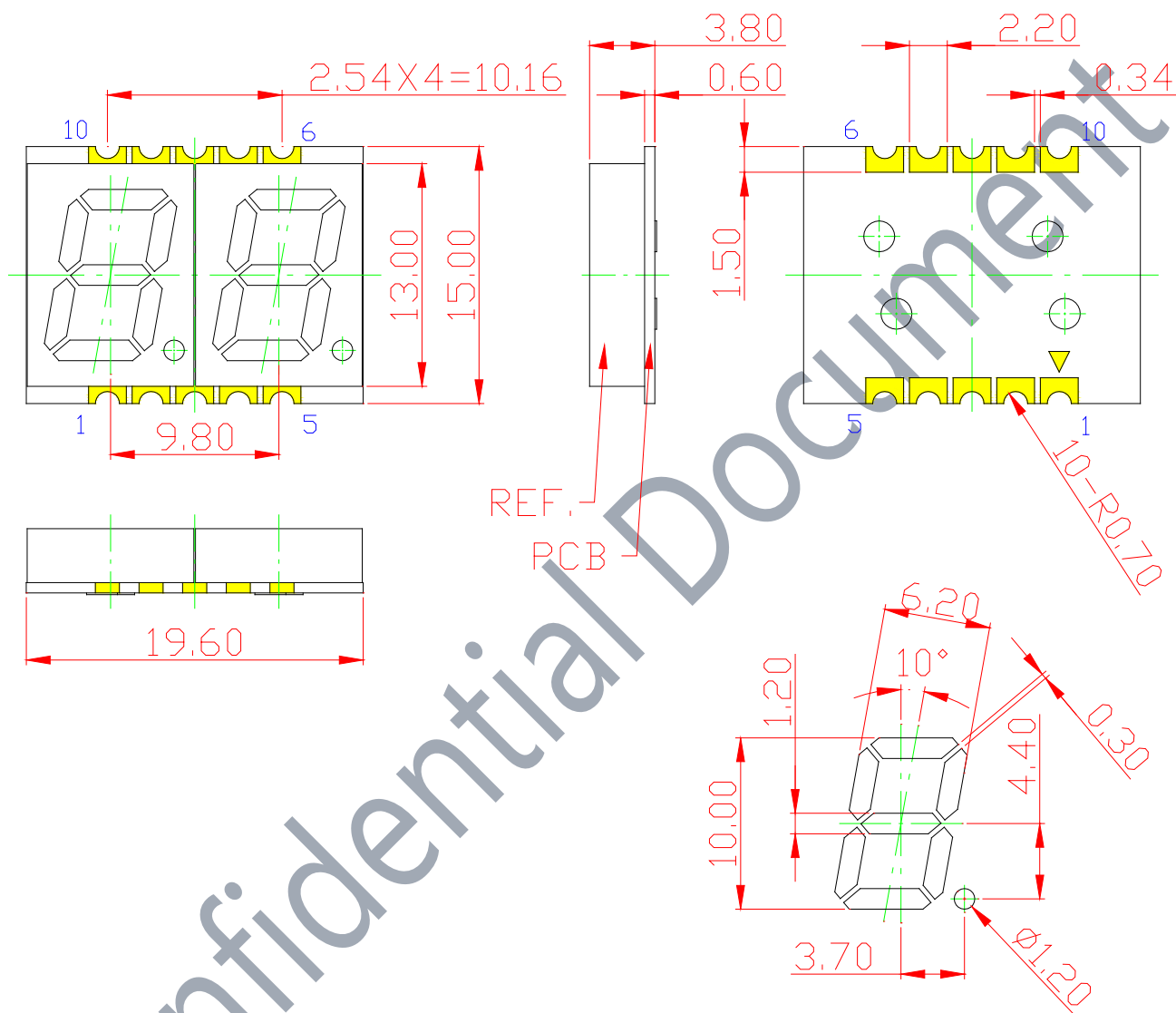
RoHS Compliance



Pb Free.



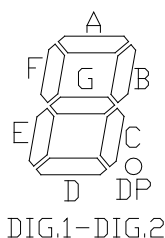
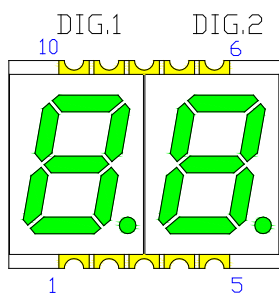
● MECHANICAL DIMENSIONS



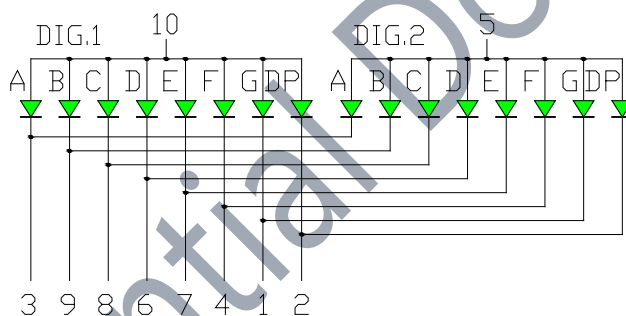
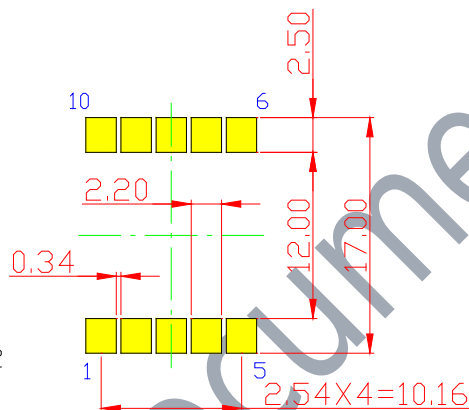
NOTES: All dimensions are in millimeters. Tolerances are ± 0.25 mm unless otherwise noted.

● TYPICAL INTERNAL EQUIVALENT CIRCUIT

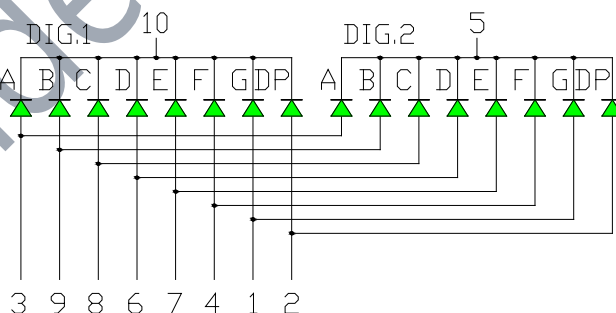
Turn On Color



Recommended
Soldering Pattern



OPS-D3910SPG (Common Anode)

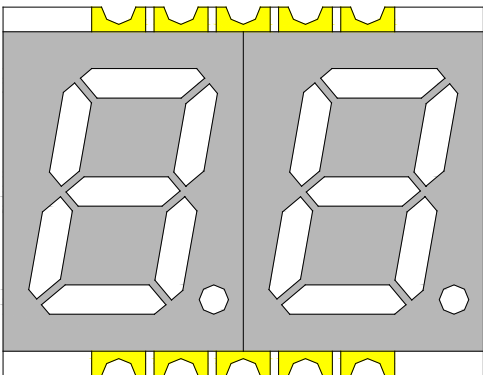
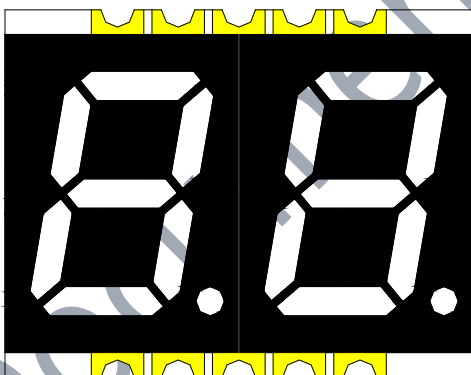


OPS-D3911SPG (Common Cathode)

※EMITTED COLOR : PURE GREEN

● 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-D3910SPG-GW	Common Anode Gray face White segment
OPS-D3911SPG-GW	Common Cathode Gray face White segment
OPS-D3910SPG-BW	Common Anode Black face White segment
OPS-D3911SPG-BW	Common Cathode Black face White segment

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● SPG: PURE GREEN (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P _{AD}	90	mW
Continuous forward current	I _{AF}	30	mA
Peak current (duty cycle 1/10, 1kHz)	I _{PF}	60	mA
In-rush current	I _{IR}	60	mA
Supply voltage	V _{DD}	5	V
Reverse voltage	V _R	5	V
Operating temperature	T _{OPR}	-40 to +105	°C
Storage temperature	T _{STG}	-40 to +105	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Type.	Max	Unit
Forward Voltage, (Per Dice)	V _F	I _F =20mA	-	3.0	3.4	V
Reverse Current, (Per Dice)	I _R	V _R =5V	-	-	10	μA
Dominant Wavelength	λ _D	I _F =20mA	515	-	530	nm
Luminous Intensity	I _v	I _F =20mA	285	-	460	mcd
Spectral Line Half-Bandwidth	Δλ	I _F =20mA	-	30	-	nm



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● **SPG: BIN GRADE (Unit : mcd) 20mA**

PURE GREEN	U	V	W
	285.0 – 340.0	340.1 – 400.0	400.1 – 460.0

● **SPG: HUE GRADE (λ_D : nm)**

1	2	3
515.0 – 520.0	520.1 – 525.0	525.1 – 530.0

● **AVAILABLE BIN / HUE TABLE**

U1	V1	W1
U2	V2	W2
U3	V3	W3

● SPG: PURE GREEN (InGaN/GaN) CURVE

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

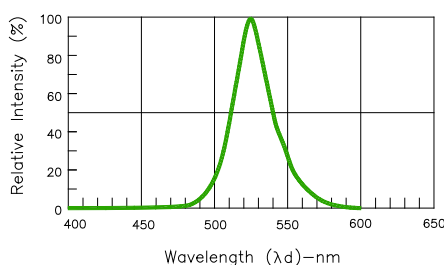


Fig.1 Relative Intensity VS. Wavelength

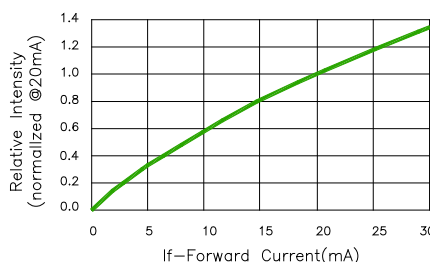


Fig.2—Relative Luminous Intensity vs. Forward Current

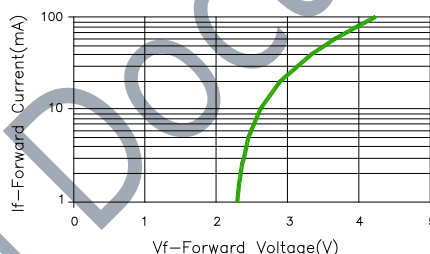


Fig.3—Forward Current vs. Forward Voltage

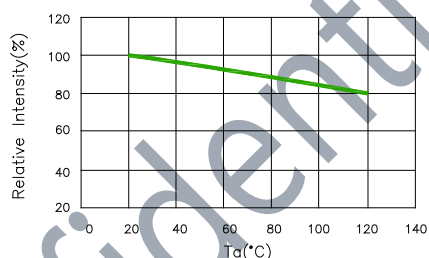


Fig.4—Relative Intensity(@20mA)VS. Ambient Temperature

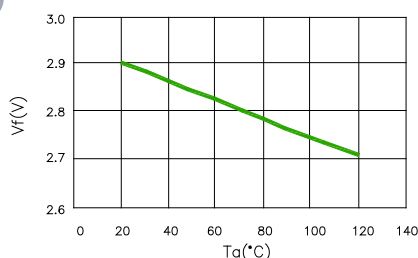


Fig.5—Forward Voltage(@20mA)VS. Ambient Temperature

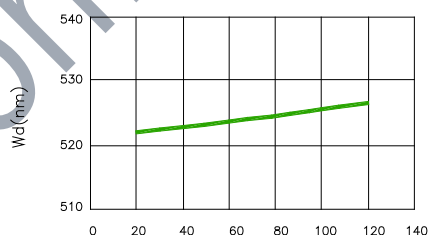


Fig.6—Dominant Wavelength(@20mA)
VS. Ambient Temperature

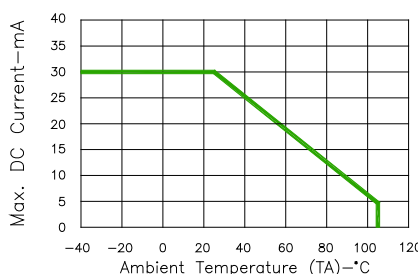
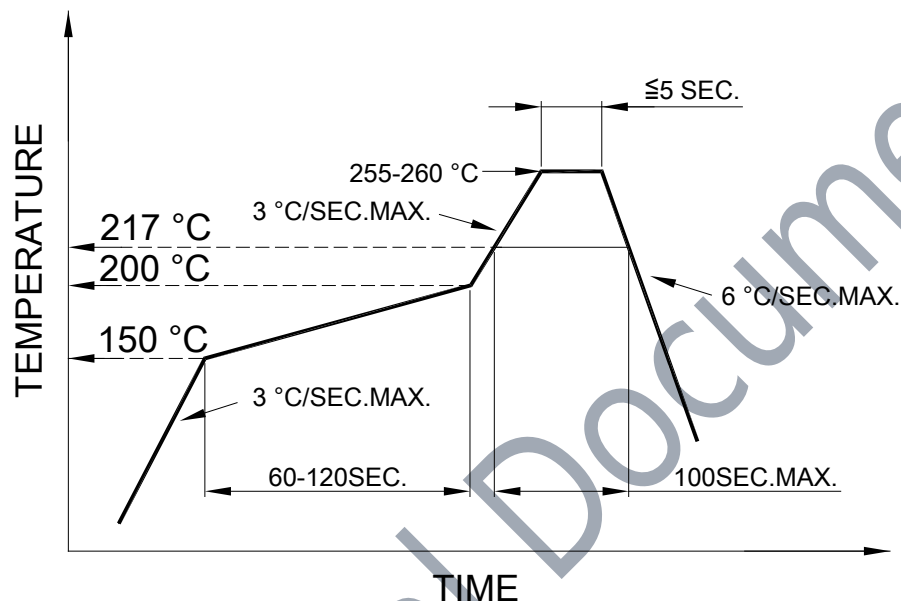


Fig.7—Max. Allowable DC Current
VS. Ambient Temperature

● 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.

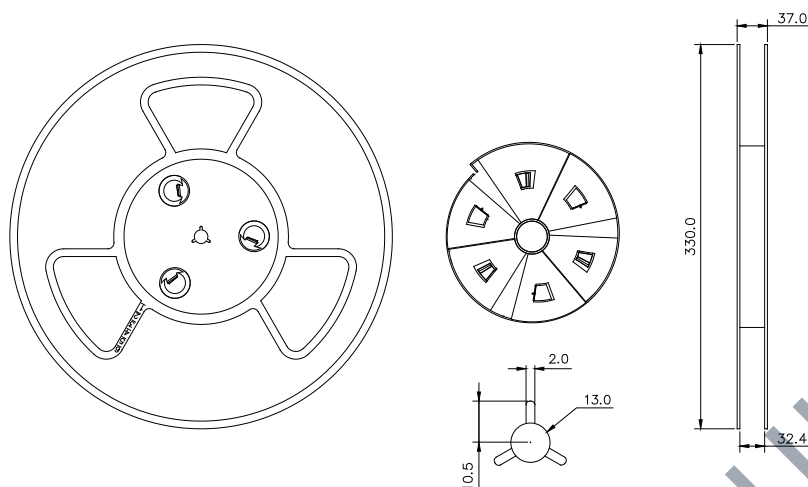
● SOLDERING IRON

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.

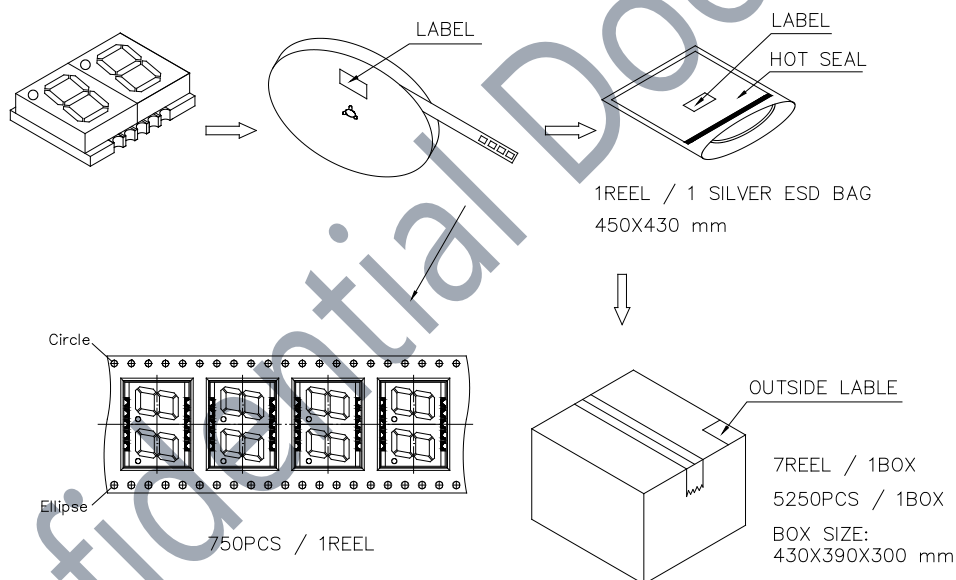
● REWORK

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

● 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)