



www.opledtw.com

Opto Plus LED Corp.
0.39" SMD Type LED Display
OPS-D3910SE | OPS-D3911SE

● **EDIT HISTORY**

Version A: Oct. 28, 2020

Preliminary Spec.

Version B: Mar. 25, 2022

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



www.opledtw.com

Opto Plus LED Corp. 0.39" SMD Type LED Display OPS-D3910SE | OPS-D3911SE

● 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 (10.0mm) height Dual digit 7-segment displays.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright Red 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-D3910SE-GW	Common Anode Gray face White segment
OPS-D3911SE-GW	Common Cathode Gray face White segment
OPS-D3910SE-BW	Common Anode Black face White segment
OPS-D3911SE-BW	Common Cathode Black face White segment

RoHS Compliance



Pb Free.



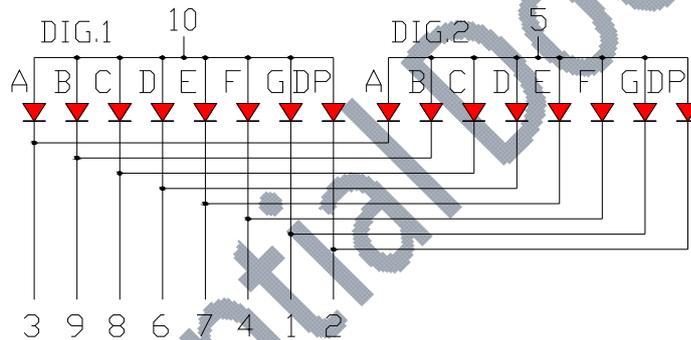
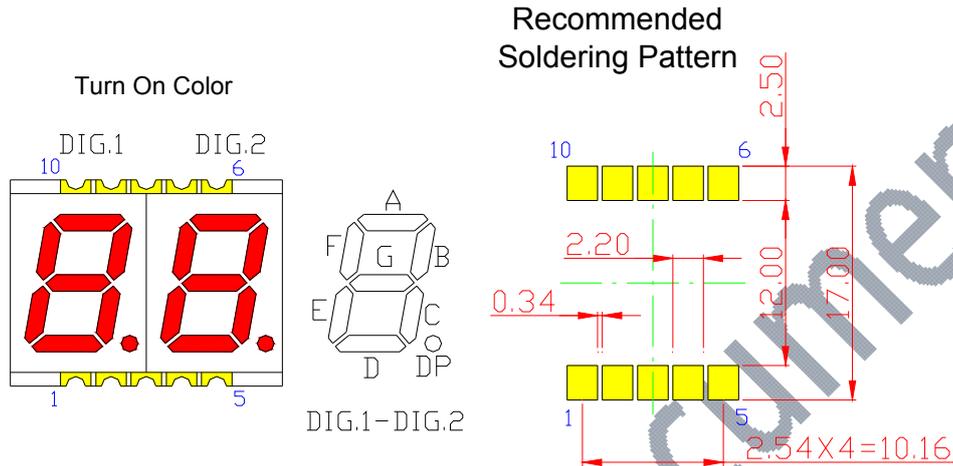


Opto Plus LED Corp.

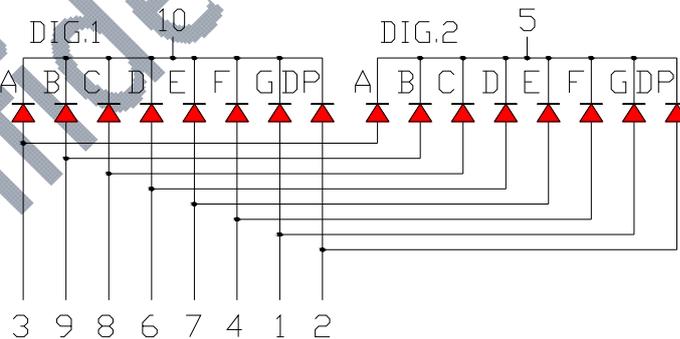
0.39" SMD Type LED Display

OPS-D3910SE | OPS-D3911SE

● TYPICAL INTERNAL EQUIVALENT CIRCUIT



OPS-D3910SE (Common Anode)



OPS-D3911SE (Common Cathode)

※EMITTED COLOR : SUPER BRIGHT RED



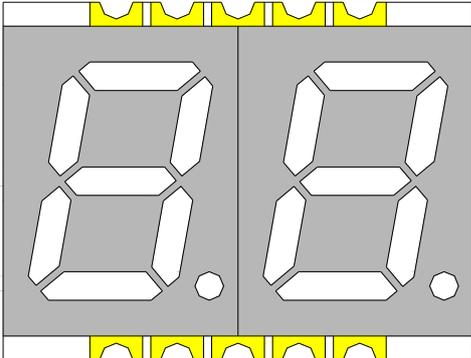
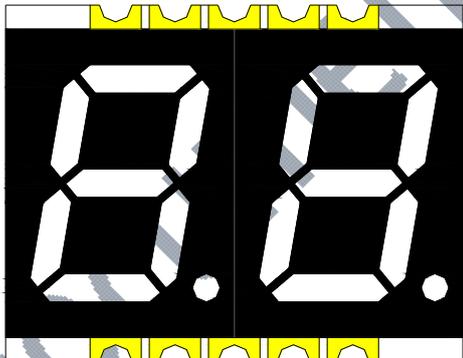
Opto Plus LED Corp.

0.39" SMD Type LED Display

OPS-D3910SE | OPS-D3911SE

● PRODUCT APPEARANCE

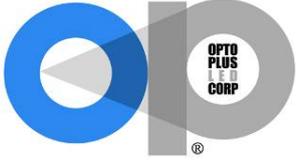
The most common reflector color and segment color are show in below diagram.

-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-D3910SE-GW	Common Anode Gray face White segment
OPS-D3911SE-GW	Common Cathode Gray face White segment
OPS-D3910SE-BW	Common Anode Black face White segment
OPS-D3911SE-BW	Common Cathode Black face White segment



www.opledtw.com

Opto Plus LED Corp.

0.39" SMD Type LED Display

OPS-D3910SE | OPS-D3911SE

● SE: SUPER BRIGHT RED (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
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	$I_F = 20\text{mA}$	-	2.1	2.4	V
Reverse Current, (Per Dice)	I_R	$V_R = 5\text{V}$	-	-	10	μA
Peak Wavelength	λ_P	$I_F = 20\text{mA}$	-	632	-	nm
Dominant Wavelength	λ_D	$I_F = 20\text{mA}$	619	-	629	nm
Luminous Intensity	I_v	$I_F = 20\text{mA}$	30	60	90	mcd
Spectral Line Half-Bandwidth	$\Delta\lambda$	$I_F = 20\text{mA}$	-	20	-	nm



www.opledtw.com

Opto Plus LED Corp.
0.39" SMD Type LED Display
OPS-D3910SE | OPS-D3911SE

● SE: BIN GRADE (Unit :mcd) 20mA

Super Bright Red	N	O	P
	30.0 – 50.0	50.1 – 70.0	70.1 – 90.0

● SE: HUE GRADE (λ_D : nm)

1	2	3
619.0 – 622.0	622.1 – 626.0	626.1 – 629.0

● AVAILABLE BIN / HUE TABLE

N1	N2	N3
O1	O2	O3
P1	P2	P3



Opto Plus LED Corp.

0.39" SMD Type LED Display

OPS-D3910SE | OPS-D3911SE

● SE: SUPER BRIGHT RED (AlGaInP/GaAs) CURVE

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

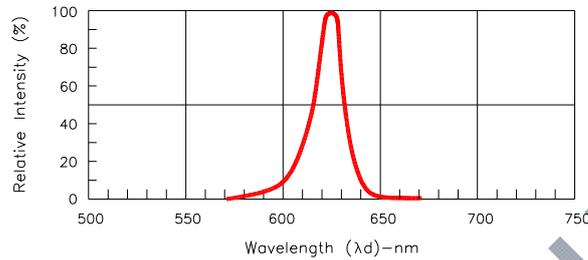


Fig.1-Relative Intensity VS. Wavelength

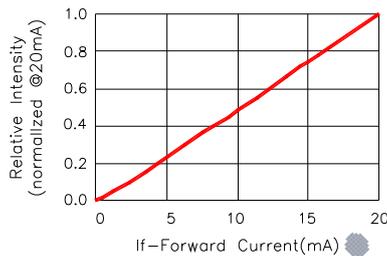


Fig.2-Relative Luminous Intensity vs. Forward Current

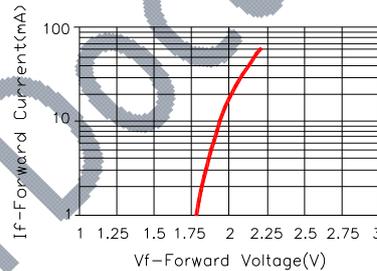


Fig.3-Forward Current vs. Forward Voltage

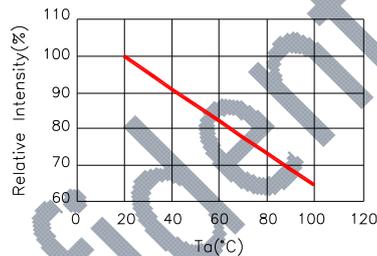


Fig.4-Relative Intensity(@20mA) vs. Ambient Temperature

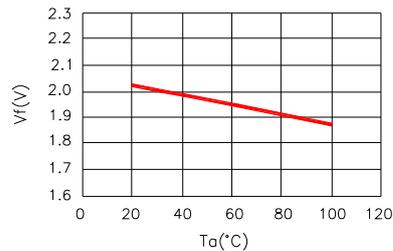


Fig.5-Forward Voltage(@20mA) vs. Ambient Temperature

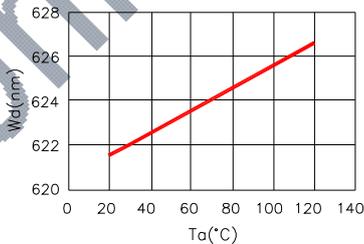


Fig.6-Dominant Wavelength(@20mA) VS. Ambient Temperature

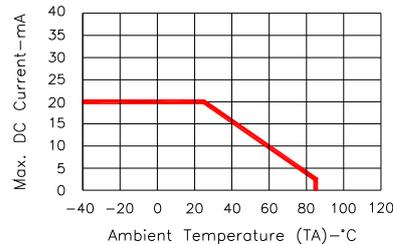


Fig.7-Max. Allowable DC Current VS. Ambient Temperature



www.opledtw.com

Opto Plus LED Corp.

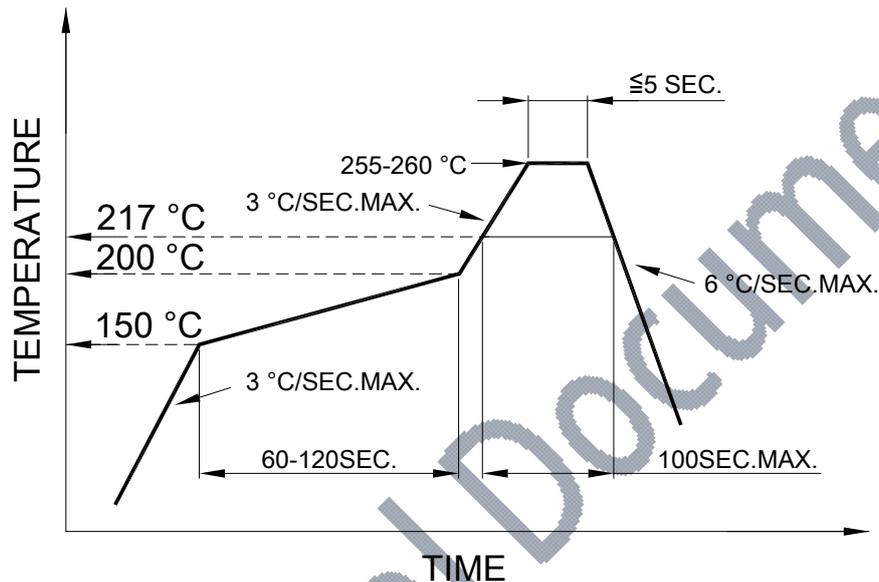
0.39" SMD Type LED Display

OPS-D3910SE | OPS-D3911SE

● 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.



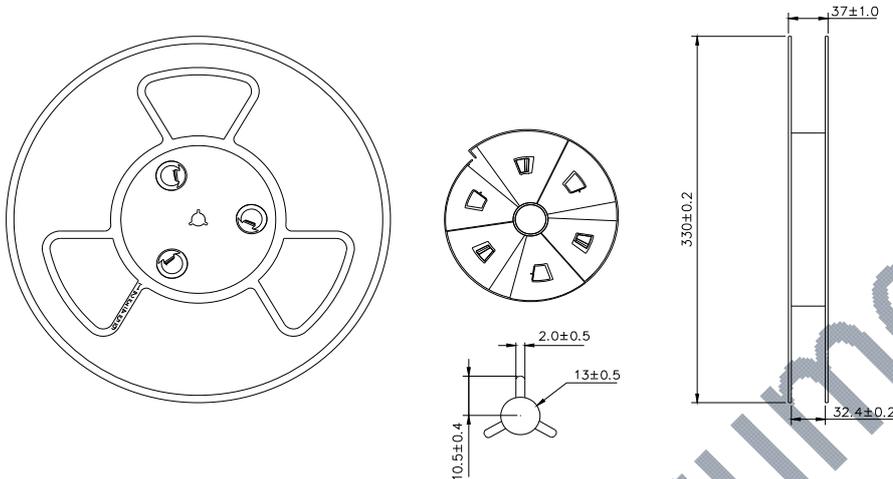
www.opledtw.com

Opto Plus LED Corp.

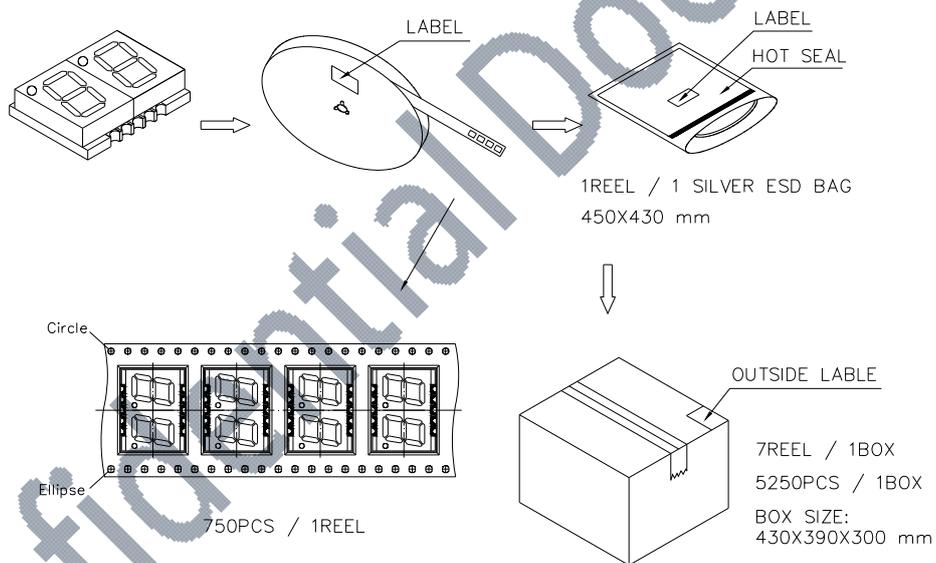
0.39" SMD Type LED Display

OPS-D3910SE | OPS-D3911SE

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