



Opto Plus LED Corp.
0.67" 5 x 7 Dot Matrix LED Display
OPD-M25712W2 | OPD-M25713W2

● **EDIT HISTORY**

Version A : Jun. 30, 2022

Preliminary Spec.

Confidential Document



Opto Plus LED Corp.

0.67" 5 x 7 Dot Matrix LED Display

OPD-M25712W2 | OPD-M25713W2

● FEATURES

- 0.67 inch (17.14 mm) Matrix Height.
- Stackable vertically and horizontally.
- 5x7 array with X-Y select.
- Wide viewing angle
- RoHS compliant, Pb Free.

● DESCRIPTION

The device are 0.67 inch (17.14 mm) 5x7 dot matrix display.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright Yellow Green 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
	OPD-M25712W2-GW	Common Anode Gray face White segment
	OPD-M25713W2-GW	Common Cathode Gray face White segment
	OPD-M25712W2-BW	Common Anode Black face White segment
	OPD-M25713W2-BW	Common Cathode Black face White segment

RoHS Compliance



Pb Free.

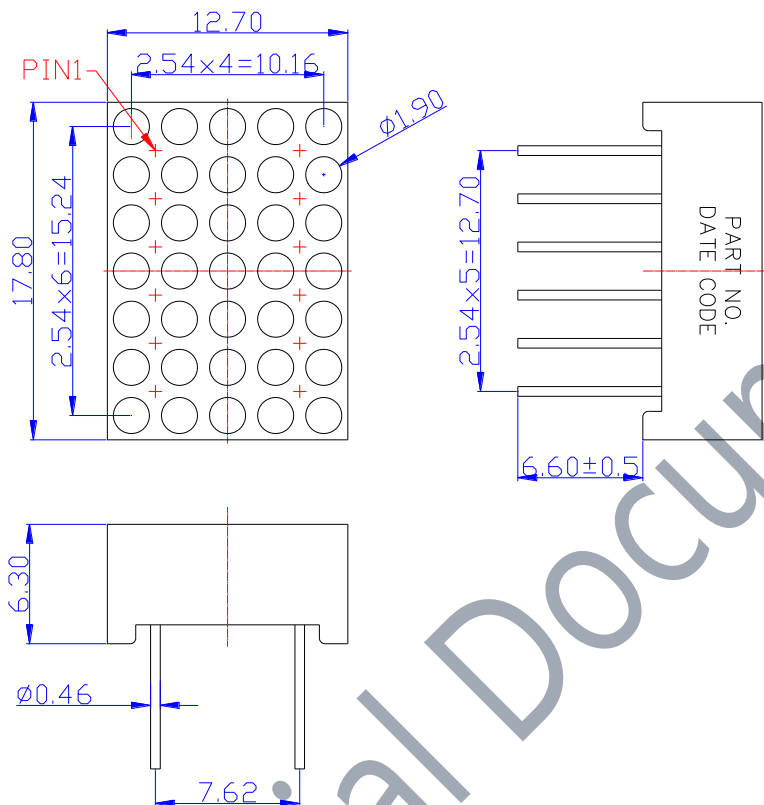


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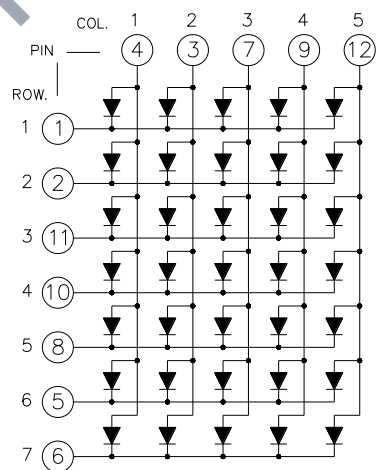
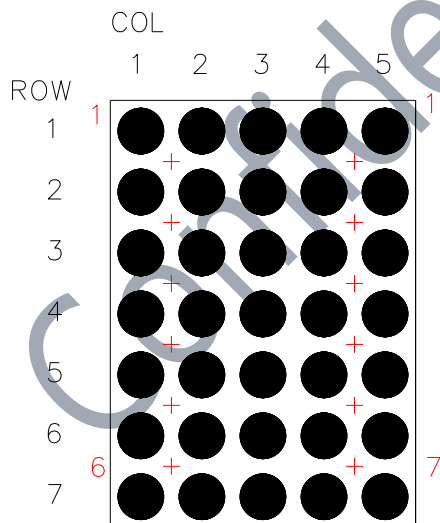
MECHANICAL DIMENSIONS



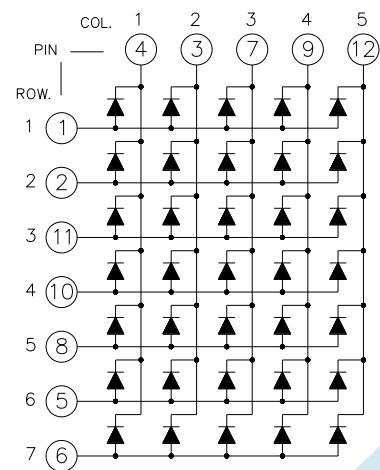
NOTES: Dimension is in millimeters. Tolerance is ± 0.25 mm unless otherwise noted.

TYPICAL INTERNAL EQUIVALENT CIRCUIT

Turn On Color



OPD-M25712
Anode Column Cathode Row



OPD-M25713
Anode Row Cathode Column

※EMITTED COLOR : SUPER BRIGHT WHITE

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● W2: SUPER BRIGHT WHITE (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation per SMD	P _{AD}	78	mW
Continuous forward current per SMD	I _{AF}	20	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I _{PF}	60	mA
Reverse voltage per SMD	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=25°C

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage per SMD	V _F	I _F =5mA	-	2.8	3.1	V
Reverse Current	I _R	V _R =5V	-	-	10	μA
Peak Wavelength per SMD	λ _P	I _F =5mA	X	0.265	-	nm
			Y	0.250	-	
Average Luminous Intensity per SMD	I _v	I _F =5mA	-	370	-	mcd
Spectrum Radiation Bandwidth	Δλ	I _F =5mA	-	30	-	nm



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● WHITE: BIN GRADE (Unit : mcd / I_V=5mA)

Super Bright White (SMD BIN 5 mA)	1	2	3
	280~336	336~405	405~490
	FS2	FT1	FT2

● COLOR BIN

AL		A1		A2	
X	Y	X	Y	X	Y
0.25	0.22	0.26	0.23	0.27	0.24
0.25	0.23	0.26	0.24	0.27	0.25
0.26	0.24	0.27	0.25	0.28	0.26
0.26	0.23	0.27	0.24	0.28	0.25
AAL		AA1		AA2	

CL		C1		C2	
X	Y	X	Y	X	Y
0.25	0.23	0.26	0.24	0.27	0.25
0.25	0.24	0.26	0.25	0.27	0.26
0.26	0.25	0.27	0.26	0.28	0.27
0.26	0.24	0.27	0.25	0.28	0.26
CCL		CC1		CC2	

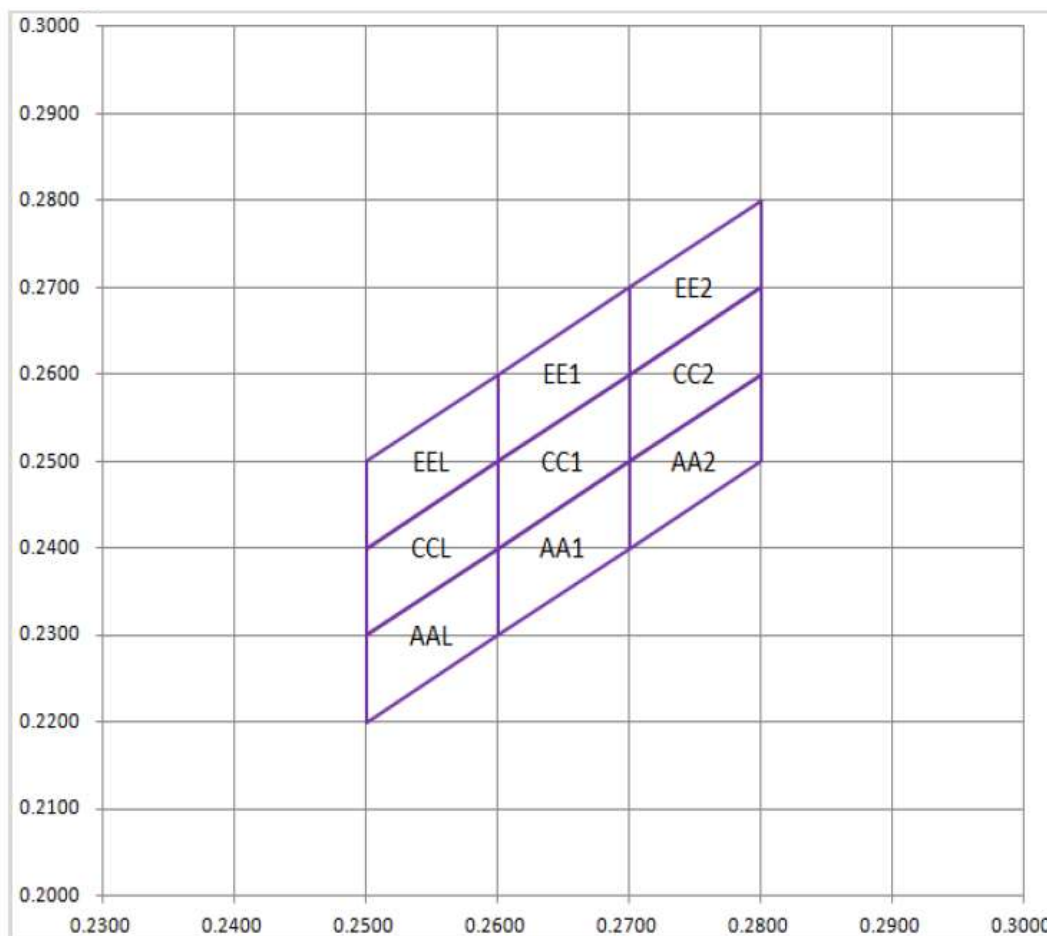
EL		E1		E2	
X	Y	X	Y	X	Y
0.25	0.24	0.26	0.25	0.27	0.26
0.25	0.25	0.26	0.26	0.27	0.27
0.26	0.26	0.27	0.27	0.28	0.28
0.26	0.25	0.27	0.26	0.28	0.27
EEL		EE1		EE2	

● AVAILABLE BIN / HUE TABLE

1AL	1A1	1A2	1CL	1C1	1C2	1EL	1E1	1E2
2AL	2A1	2A2	2CL	2C1	2C2	2EL	2E1	2E2
3AL	3A1	3A2	3CL	3C1	3C2	3EL	3E1	3E2

Note: It maintains a tolerance of x,y ±0.007

● **CHROMATICITY COORDINATE:**



● **Forward Voltage (Vf) Bin:**

Bin Code	G2	G3	G4	H1	H2	H3
Spec. Range	2.5-2.6	2.6-2.7	2.7-2.8	2.8-2.9	2.9-3.0	3.0-3.1

Note: It maintains a tolerance of $\pm 0.05V$ on forward voltage measurements



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● 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
OPD-M25710W2-GW	Common Anode Gray face White segment
OPD-M25711W2-GW	Common Cathode Gray face White segment
OPD-M25710W2-BW	Common Anode Black face White segment
OPD-M25711W2-BW	Common Cathode Black face White segment

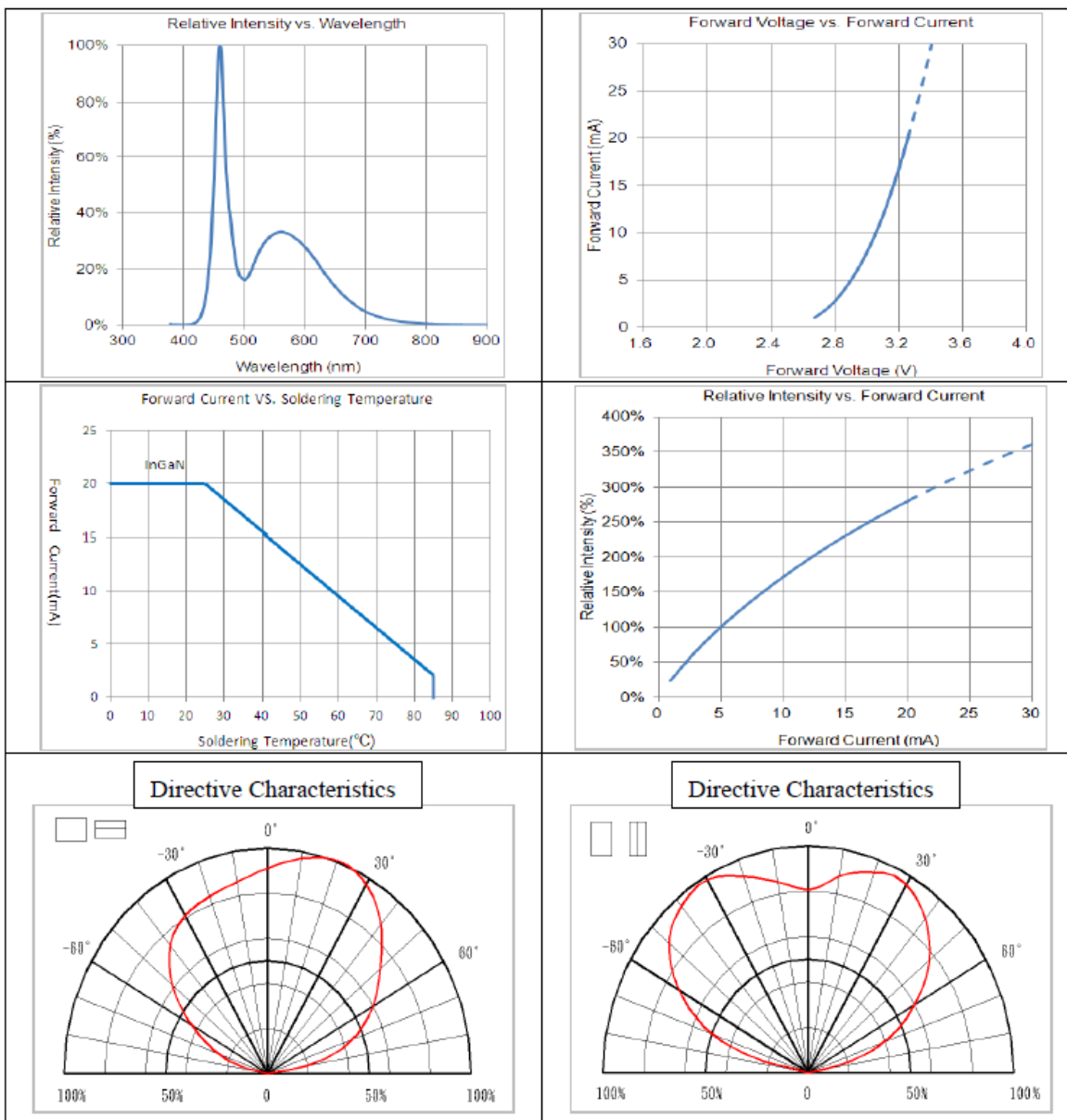
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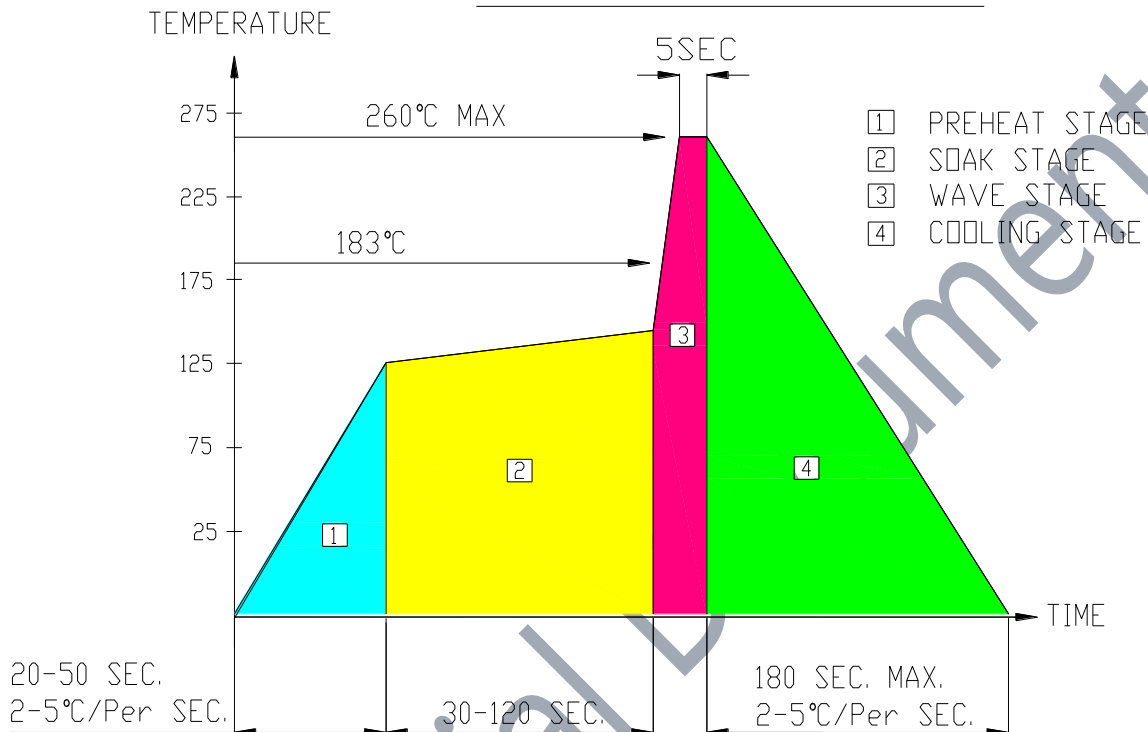
● W2: Super bright white (InGaN/GaN) CURVE

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



● RECOMMEND SOLDERING PROFILE

WAVE SOLDER 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.