



Opto Plus LED Corp. Through Hole Type LED Display OPD-V1010F1

● EDIT HISTORY

Version A: APR. 16, 2024

Preliminary Spec.

Confidential Document



Opto Plus LED Corp. Through Hole Type LED Display OPD-V1010F1

● FEATURES

- Excellent character appearance.
- Case mold type.
- With Touch pad.
- Low current operation.
- RoHS Compliant, Pb Free.

● DESCRIPTION

The OPD-V1010F1 is a 10.0mm x10.0mm with Touch-Pad LED display, This device utilizes Red SMD LED chip which are made from AlGaInP on a transparent GaAs, substrate. Green & Blue SMD 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
OPD- V1010F1A -PD -GW	Common Anode Gray face White segment
OPD- V1010F1A -PD -BW	Common Anode Black face White segment
OPD- V1010F1C -PD -GW	Common Cathode Gray face White segment
OPD- V1010F1C -PD -BW	Common Cathode Black face White segment

RoHS Compliance

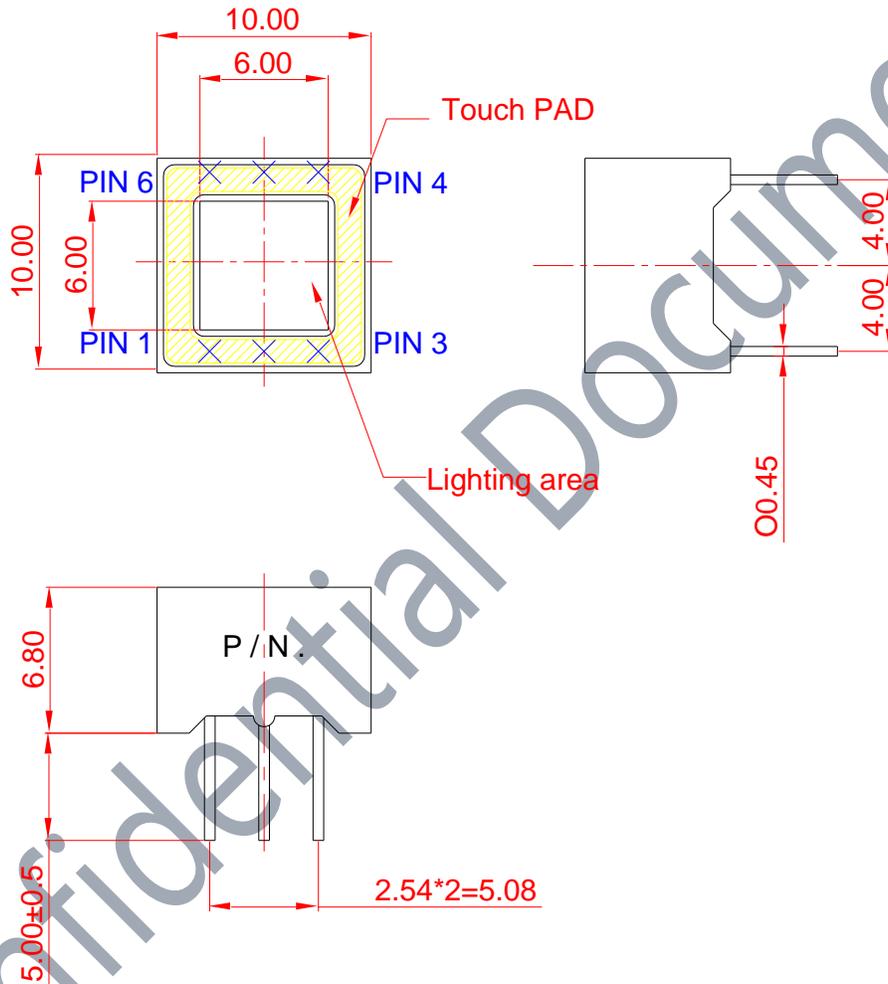


Pb Free.



● MECHANICAL DIMENSIONS

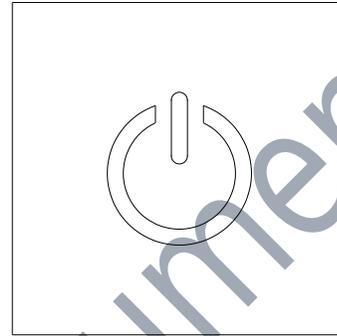
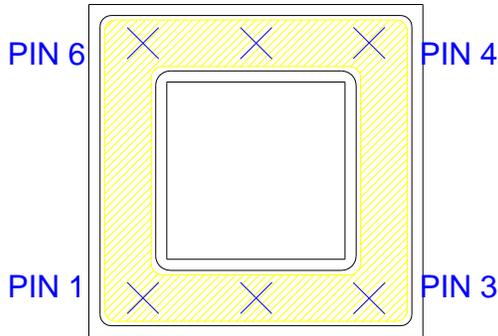
*Excluding Overlay



NOTE:
Dimension in millimeters (inches),
and tolerances are $\pm 0.25\text{mm}$ (.01") specified.

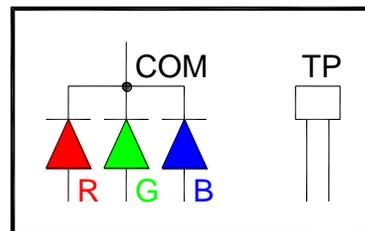
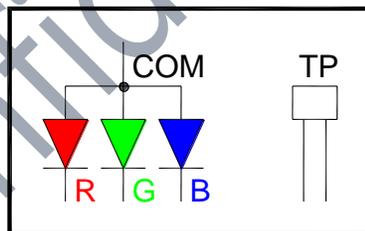
● TYPICAL INTERNAL EQUIVALENT CIRCUIT

*Overlay (Thickness=0.20mm)



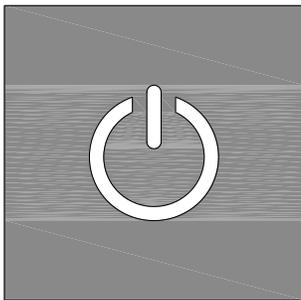
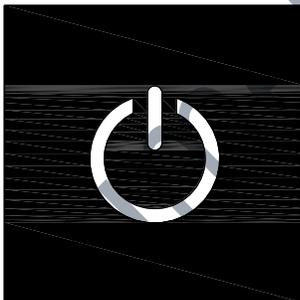
- PIN 1 : Blue color.**
- PIN 2 : Touch PAD.**
- PIN 3 : Red color.**
- PIN 4 : Common PIN.**
- PIN 5 : Touch PAD.**
- PIN 6 : Green color.**

※EMITTED COLOR : RED & GREEN & BLUE
COMMON ANODE / COMMON CATHODE



● 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- V1010F1A -PD -GW	Common Anode Gray face White segment
OPD- V1010F1A -PD -BW	Common Anode Black face White segment
OPD- V1010F1C -PD -GW	Common Cathode Gray face White segment
OPD- V1010F1C -PD -BW	Common Cathode Black face White segment



Opto Plus LED Corp. Through Hole Type LED Display OPD-V1010F1

● F1: FULL COLOR

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation	P _{AD}	46	mW
Continuous forward current	I _{AF}	5	mA
Peak current (duty cycle 1/10, 1kHz)	I _{PF}	20	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 (Red)(PER SMD)	V _F	I _F =5mA	1.5	1.9	2.7	V
Forward Voltage (Green) (PER SMD)	V _F	I _F =5mA	2.1	2.6	3.3	V
Forward Voltage (Blue) (PER SMD)	V _F	I _F =5mA	2.3	2.7	3.5	V
Reverse Current (PER SMD)	I _R	V _R =5V	-	-	10	μA
Dominant Wavelength (Red)	λ _D	I _F =5mA	-	622	-	nm
Dominant Wavelength (Green)	λ _D	I _F =5mA	-	525	-	nm
Dominant Wavelength (Blue)	λ _D	I _F =5mA	-	466	-	nm
Luminous Intensity(Red) (PER SMD)	I _V	I _F =5mA	-	180	-	mcd



Opto Plus LED Corp. Through Hole Type LED Display OPD-V1010F1

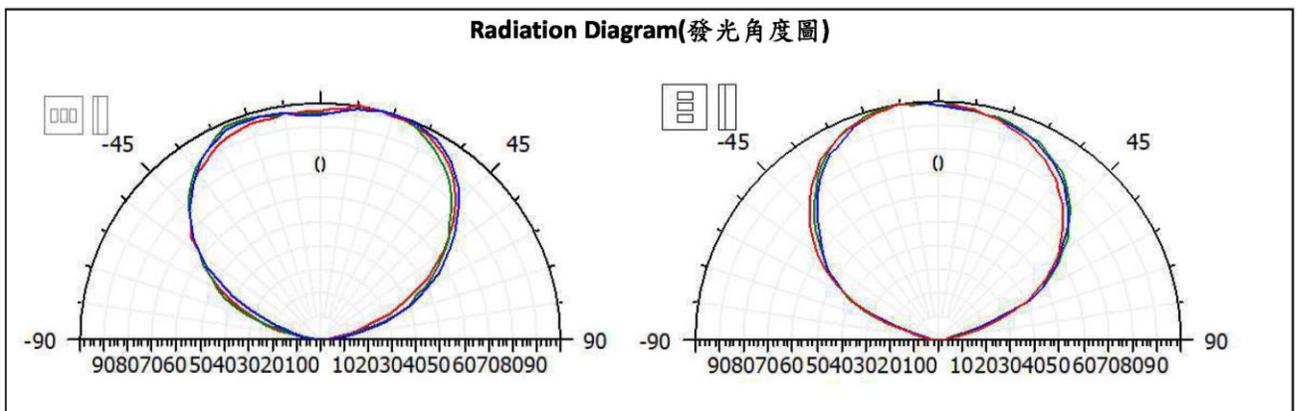
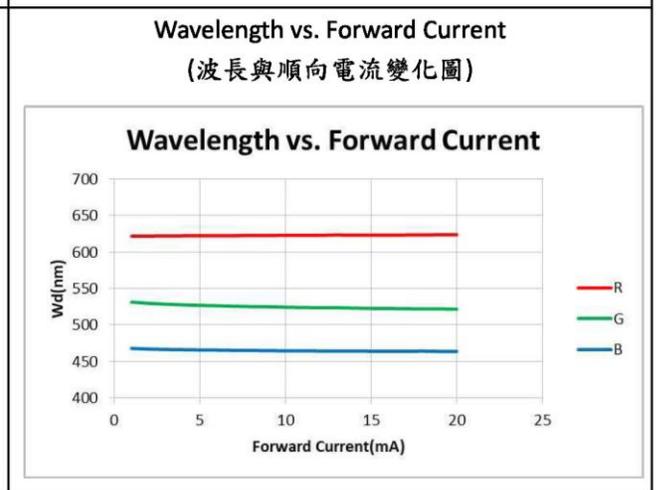
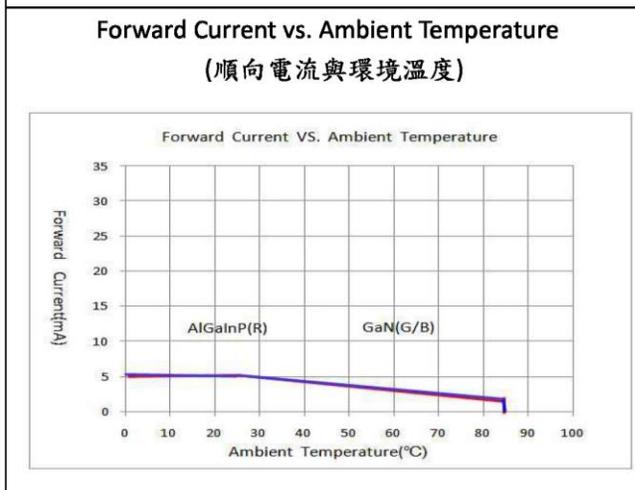
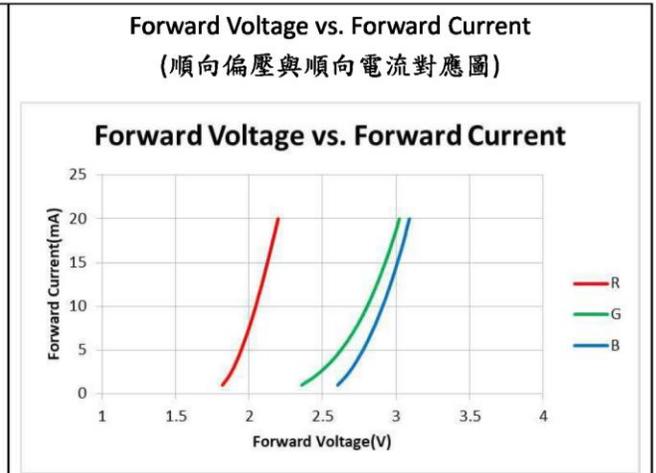
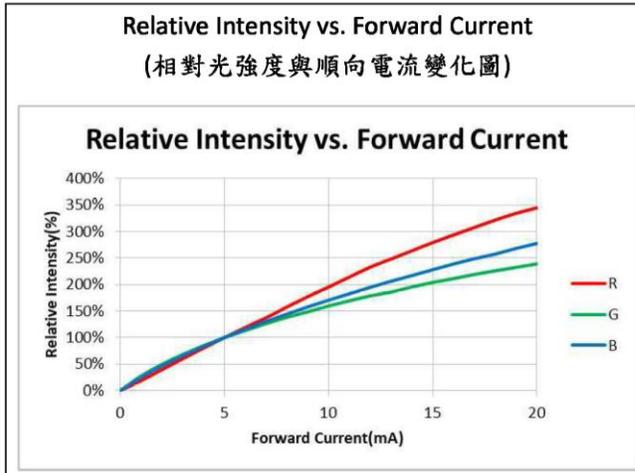
Luminous Intensity(Green) (PER SMD)	I_V	$I_F=5mA$	-	450	-	mcd
Luminous Intensity(Blue) (PER SMD)	I_V	$I_F=5mA$	-	120	-	mcd
Luminous Intensity(Red)	I_V	$I_F=5mA$	-	60	-	mcd
Luminous Intensity(Green)	I_V	$I_F=5mA$	-	150	-	mcd
Luminous Intensity(Blue)	I_V	$I_F=5mA$	-	30	-	mcd
Spectrum Radiation Bandwidth (Red) (PER SMD)	$\Delta\lambda$	$I_F=5mA$	-	13	-	nm
Spectrum Radiation Bandwidth (Green) (PER SMD)	$\Delta\lambda$	$I_F=5mA$	-	25	-	nm
Spectrum Radiation Bandwidth (Blue) (PER SMD)	$\Delta\lambda$	$I_F=5mA$	-	16	-	nm

Confidential Document

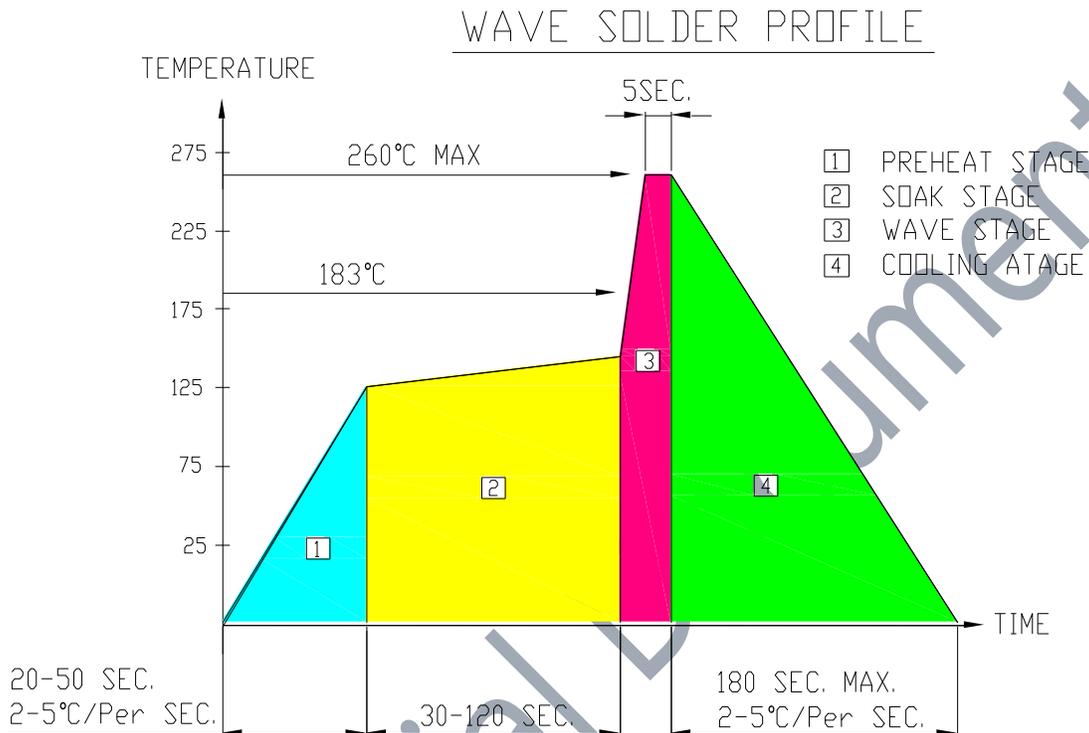
Opto Plus LED Corp.

Through Hole Type LED Display

OPD-V1010F1



● 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.

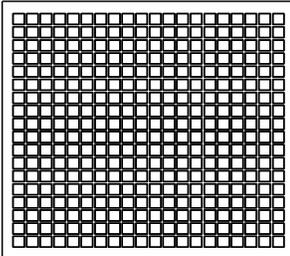
● REWORK

Customer must finish rework within ≤ 3 sec under 350°C.

The head of soldering iron cannot touch copper foil.

● PACKAGE DIMENSIONS

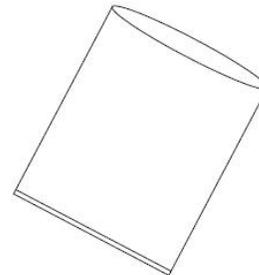
360 PCS (20X18) / 1 ESD Polyform



1800 PCS / 5 ESD Polyform / 1 ESD BAG

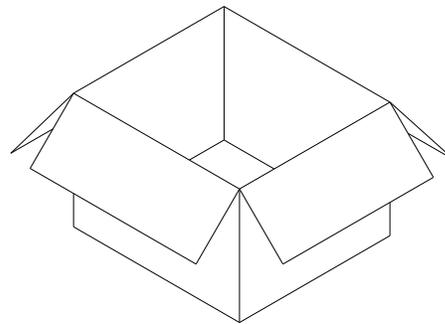


A reference for packing within ESD bag.



ESD BAG SIZE : 650 x 550 mm

3600 PCS / 2 ESD BAG / 1 OUTER CARTON



OUTER BOX SIZE : 430 x 390 x 300 mm

● Note:

LED DISPLAY STANDARD STORAGED CONDITION

Product in the original packaging material state is the recommended storage conditions.

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

If the storage conditions do not meet specification standards, the component pins may become oxidized requiring re-plating and re-sorting before use. Suggest customers consume LEDs as soon as possible, and avoid long-term storage of large inventories.