



Opto Plus LED Corp.
1.00” Case Mold Type LED Display
OPD-S10020LB-BW

● **EDIT HISTORY**

Version 1 : Jan. 16, 2015

New color data sheet.

Version 2(A) : Mar.13, 2023

Modify Electrical Character & Curve (P5,P6)

Modify package dimensions.

Prepared by	Checked by	Approved by



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● **EDIT HISTORY**

Version A : Jun. 28, 2013

Preliminary Spec.



Opto Plus LED Corp.

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● FEATURES

- 1.02 inch (26.0 mm) Digit Height.
- Low current operation..
- Case mold type.
- Black face, White segment.
- RoHS compliant, Pb Free.

● DESCRIPTION

The OPD-S10020LB-BW is a 1.02 inch (26.0 mm) height single 7-segment display. This device utilizes Super Bright Blue LED chip which are made from InGaN on a transparent GaN substrate. The display has Black face, White segment.

● DEVICE

PART NO	DESCRIPTION
Super Bright Blue	
OPD-S10020LB-BW	Common Anode

RoHS Compliance



Pb free.

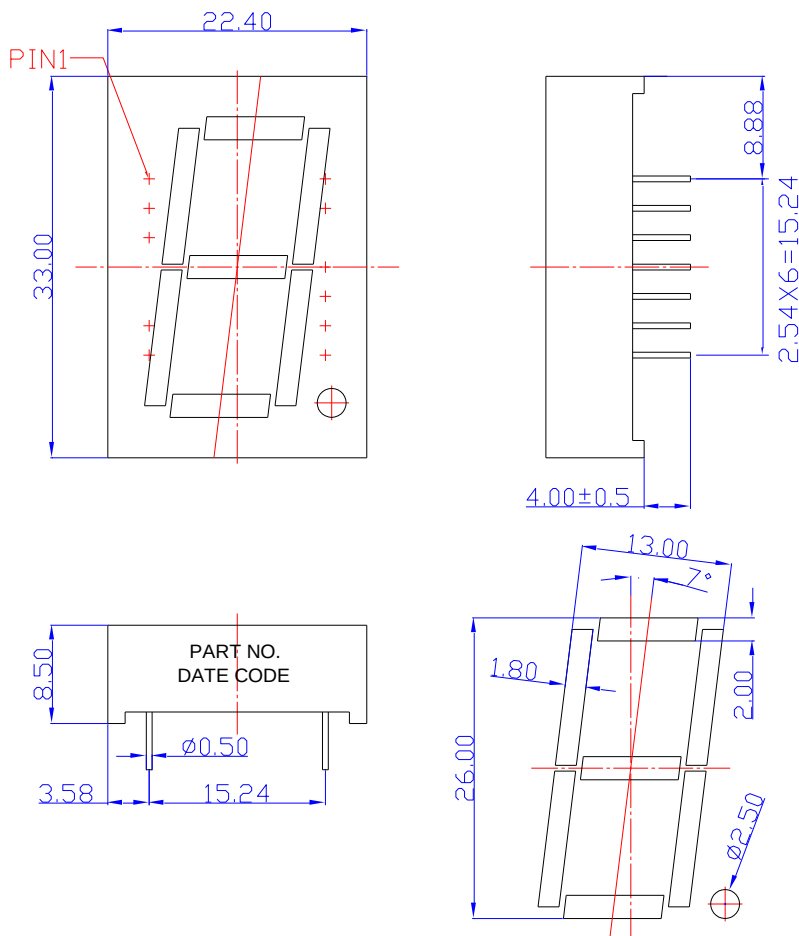


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1.00" Case Mold Type LED Display

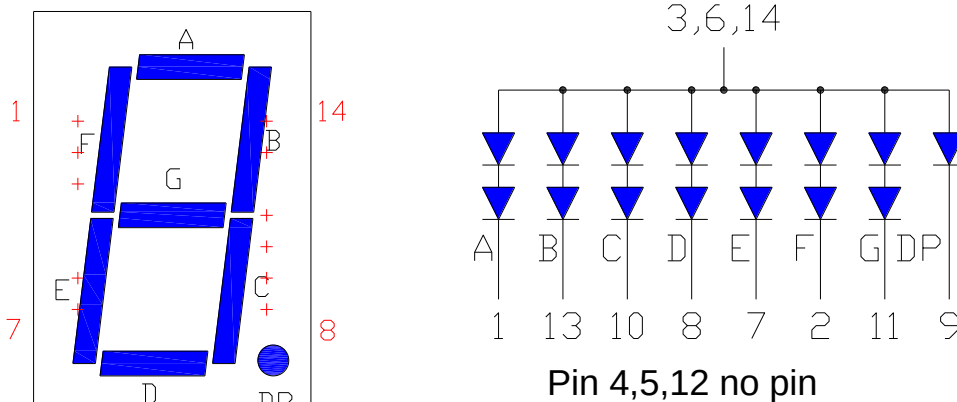
OPD-S10020LB-BW

MECHANICAL DIMENSIONS



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

TYPICAL INTERNAL EQUIVALENT CIRCUIT





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● LB: SUPER BRIGHT BLUE (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Maximum Rating	Unit
Power dissipation per dice	P _{AD}	68	mW
Continuous forward current per dice	I _{AF}	20	mA
Peak current (duty cycle 1/10, 1kHz)	I _{PF}	60	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 Segment (DP)	V _F	I _F =20mA	-	6.0 (3.0)	6.8 (3.4)	V
Reverse Current per dice	I _R	V _R =5V	-	-	10	μA
Dominant Wavelength	λ _D	I _F =20mA	460	465	474	nm
Luminous Intensity	I _V	I _F =20mA	-	90	-	mcd
Spectral Line Half-Bandwidth	Δλ	I _F =20mA	-	20	-	nm

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● LB: SUPER BRIGHT BLUE (InGaN/GaN) CURVE

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

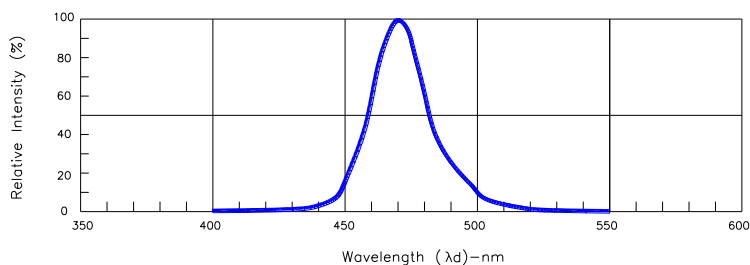


Fig.1-Relative Intensity VS. Wavelength

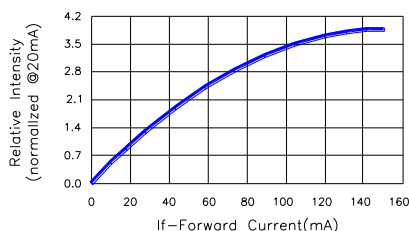


Fig.2-Relative Luminous Intensity vs. Forward Current

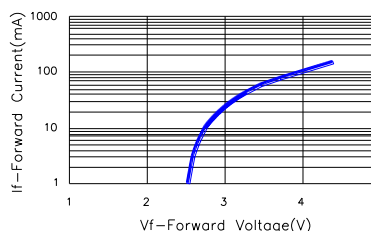


Fig.3-Forward Current vs. Forward Voltage

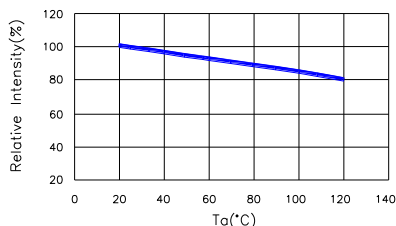


Fig.4-Relative Intensity(@20mA)VS. Ambient Temperature

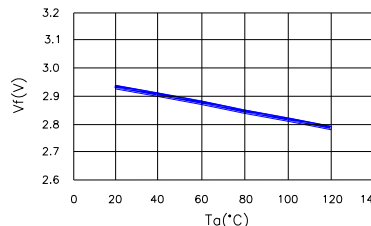


Fig.5-Forward Voltage(@20mA)VS. Ambient Temperature

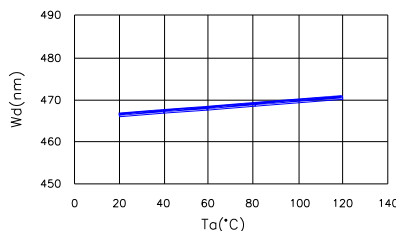


Fig.6-Dominant Wavelength(@20mA)
VS. Ambient Temperature

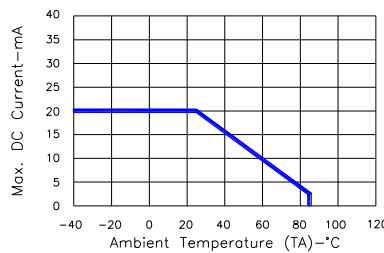
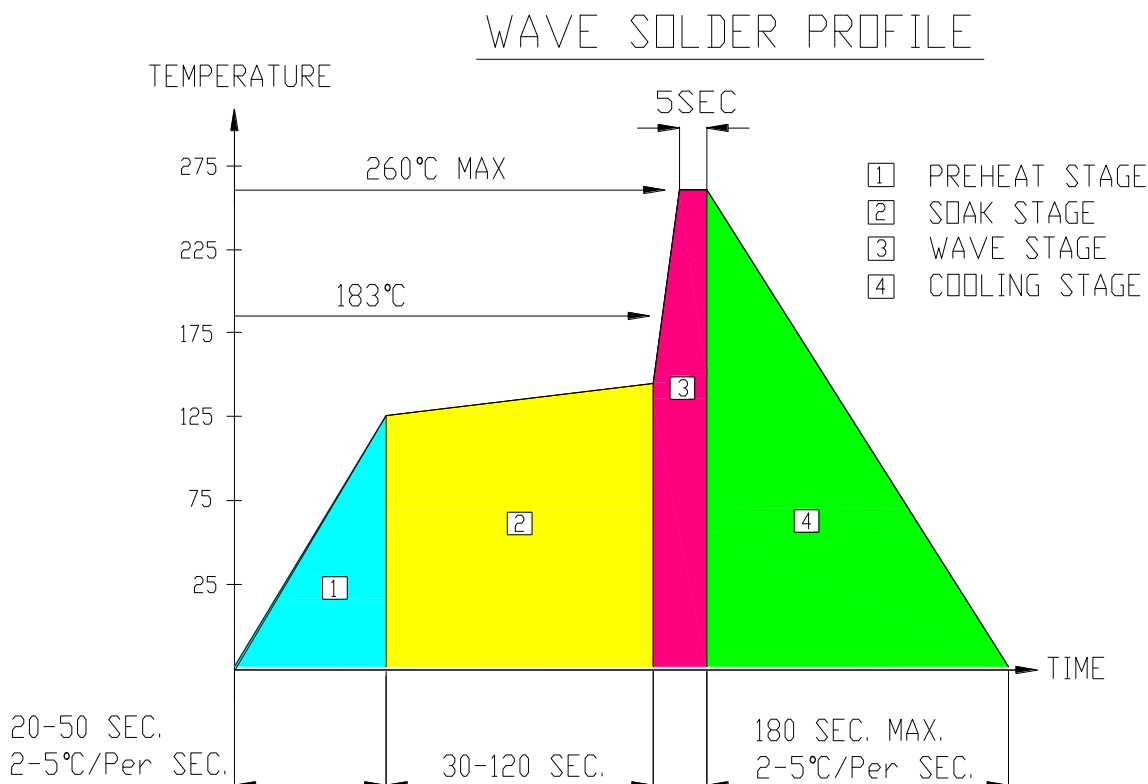


Fig.7-Max. Allowable DC Current
VS. Ambient Temperature

● 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.

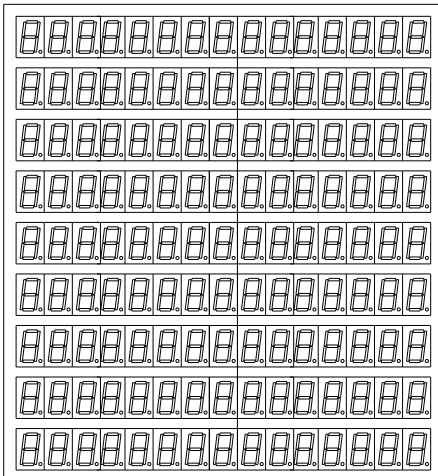
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● PACKAGE DIMENSIONS

135PCS / (15 X 9 PCS) 1 ANTISTATIC E. PE. FOAM SHEET

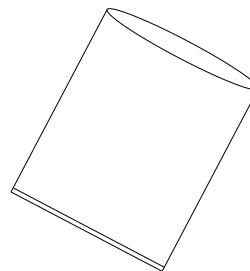


6 PINK Polyform / 1 PINK ESD BAG

7 PINK Polyform / 1 PINK ESD BAG

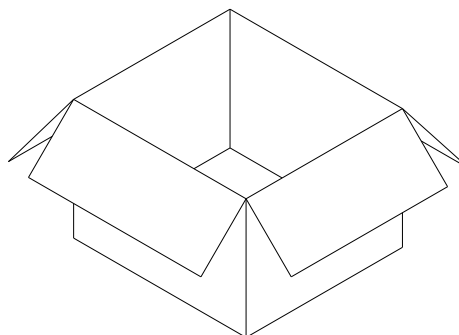


A reference for packing within ESD bag.



ESD BAG SIZE : 650 x 550 mm

1755 PCS / 2 PINK ESD BAG / 1 Inner Carton



OUTER BOX SIZE : 430 x 390 x 300 mm