



**Opto Plus LED Corp.**  
**0.8" Case Mold Type LED Display**  
**OPD-S8022UPG-BW**  
**OPD-S8023UPG-BW**

● **FEATURES**

- 0.8 inch (20.4 mm) Digit Height.
- Low current operation.
- Case mold type.
- Black face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The OPD-S8022UPG-BW & OPD-S8023UPG-BW is a 0.8 inch (20.4 mm) height single 7-segment display.

This device utilizes Pure Green LED chip which are made from InGaN on a transparent GaN. The display has Black face, White segment.

● **DEVICE**

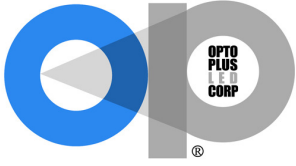
<b>PART NO</b> Pure Green	<b>DESCRIPTION</b>
OPD-S8022UPG-BW	Common Anode
OPD-S8023UPG-BW	Common Cathode

**RoHS Compliance**



**Pb free.**





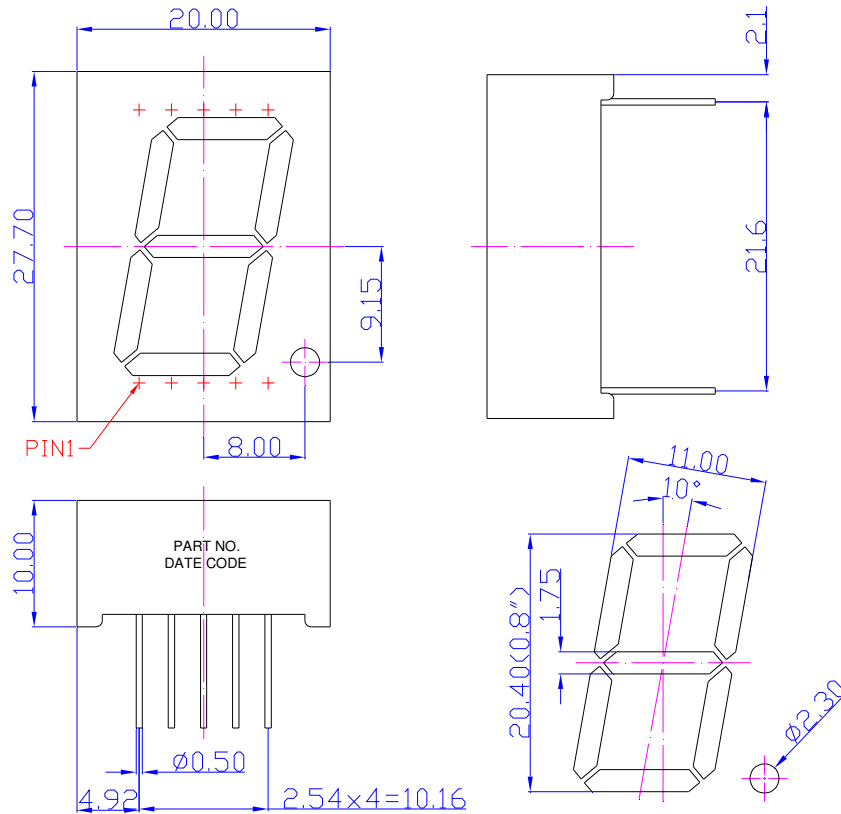
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## 0.8" Case Mold Type LED Display

### OPD-S8022UPG-BW

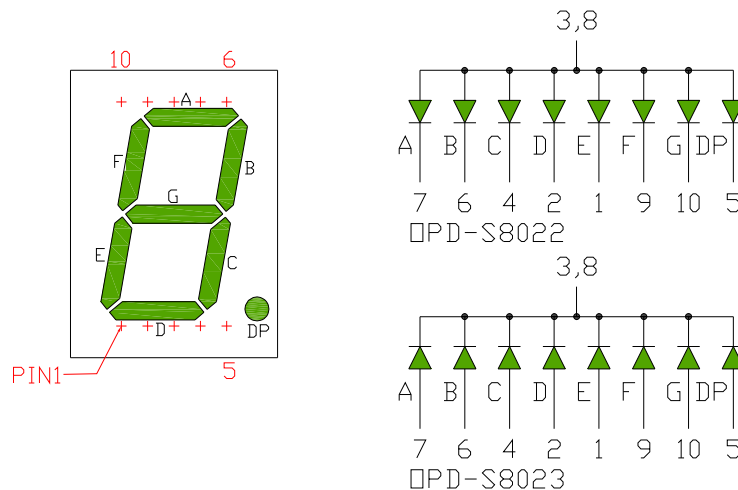
### OPD-S8023UPG-BW

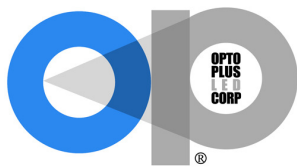
#### MECHANICAL DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are  $\pm 0.25$  mm unless otherwise noted.

#### TYPICAL INTERNAL EQUIVALENT CIRCUIT





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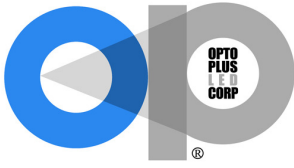
● **PG: PURE GREEN (InGaN/GaN)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Pure Green	Unit
Power dissipation per dice	$P_{AD}$	120	mW
Derating liner from 25°C per dice	-	0.3	mA / °C
Continuous forward current per dice	$I_{AF}$	30	mA
Peak current per dice (duty cycle 1/10, 1kHz)	$I_{PF}$	100	mA
Reverse voltage per dice	$V_R$	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	$V_F$	$I_F = 20\text{mA}$	-	3.2	4.0	V
Reverse current	$I_R$	$V_R = 8\text{V}$	-	-	10	$\mu\text{A}$
Dominant wavelength	$\lambda_D$	$I_F = 20\text{mA}$	-	525	-	nm
Luminous intensity	$I_V$	$I_F = 20\text{mA}$	-	160	-	mcd
Spectral radiation bandwidth	$\Delta\lambda$	$I_F = 20\text{mA}$	-	30	-	nm



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### OPD-S8022UPG-BW

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#### ● PG: PURE GREEN (InGaN/GaN) CURVE

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

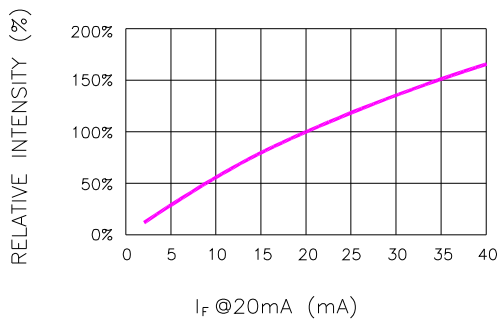


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

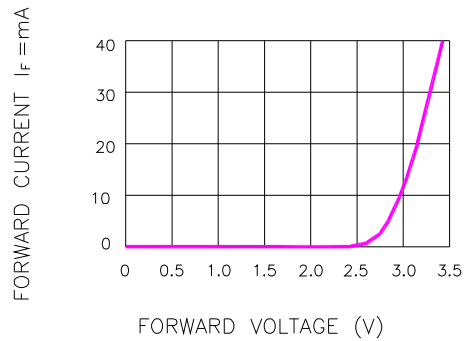


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

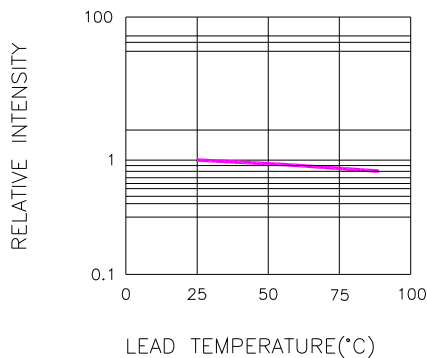


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE  
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

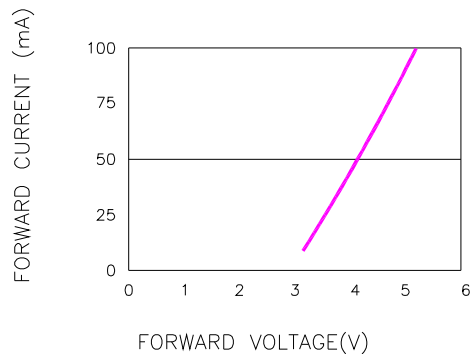


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD (100us TEST PULSE, 1% DUTY CYCLE)

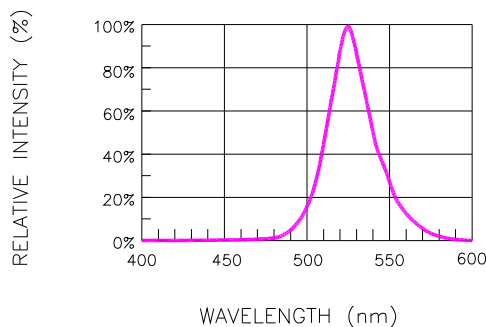


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

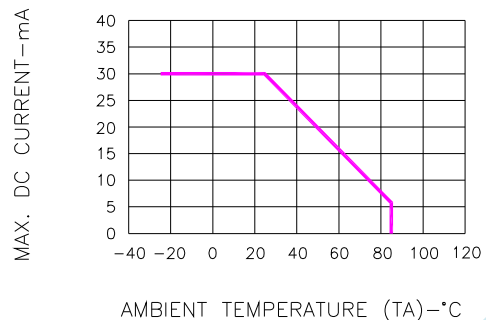
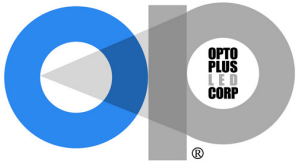
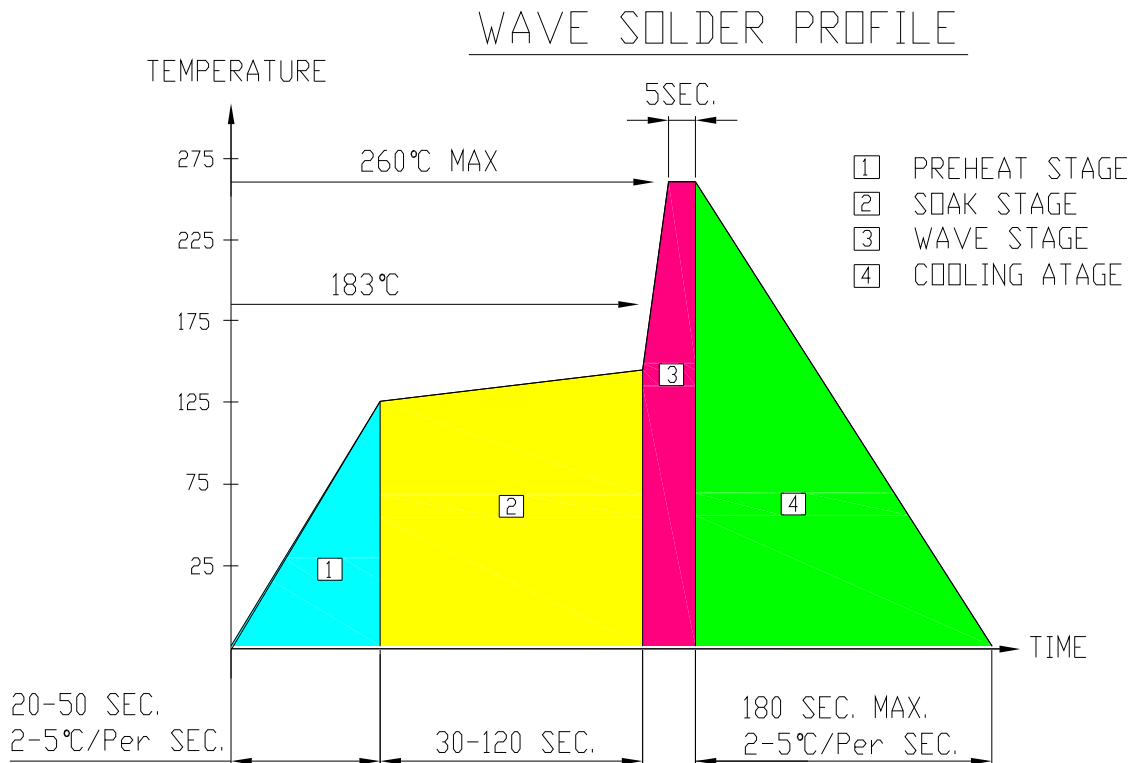


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



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● **RECOMMEND SOLDERING PROFILE**



● **SOLDERING IRON**

Basic spec is  $\leq 4$  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  $\leq 4$  sec under 245°C.