Opto Plus LED Corp.
1.8” Case Mold Type LED Display
A1801W G/W
C1801W G/W

EDIT HISTORY

Version A : Nov. 23, 2015

Preliminary Spec.

Manufacture	Examination	Approving

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

Opto Plus LED Corp.
1.8” Case Mold Type LED Display
A1801W G/W
C1801W G/W

FEATURES

- 1.80 inch (45.0 mm) Digit Height.
- Low current operation..
- Case mold type.
- Gray face, White segment.
- RoHS compliant, Pb Fre

.

DESCRIPTION

The A1801W G/W & C1801W G/W is a 1.80 inch (45.0 mm) height single 7-segment display.

This device utilizes Super Bright White SMD type LED chip which are made from InGaN on a transparent GaN substrate. The display has Gray face,White segment

DEVICE

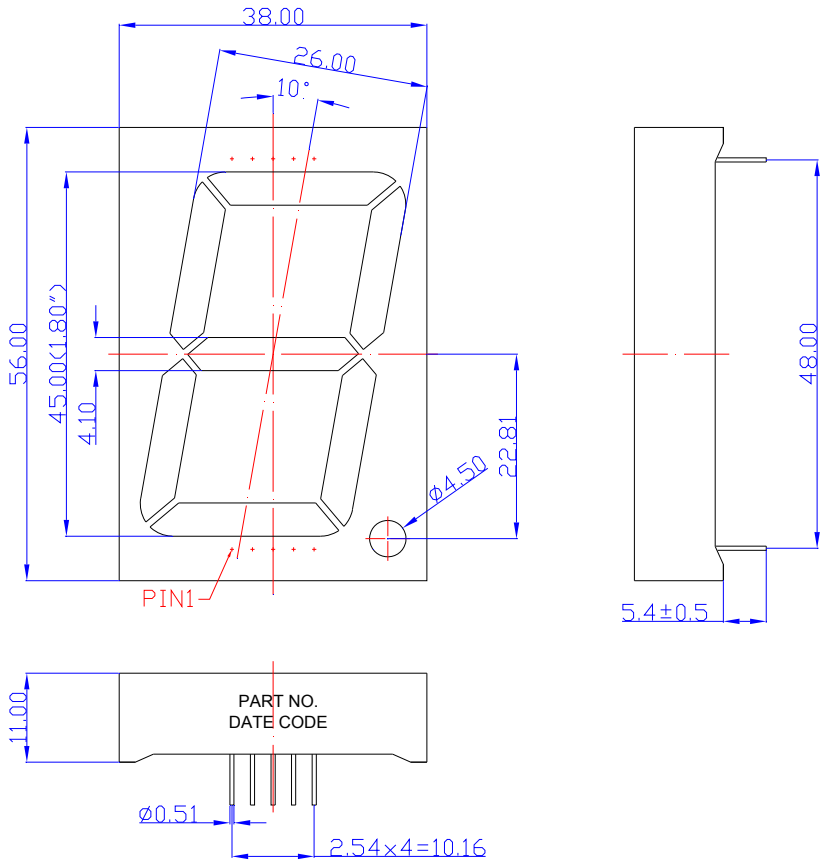
PART NO Super Bright White	DESCRIPTION
A1801W G/W	Common Anode
C1801W G/W	Common Cathode

RoHS Compliance **Pb free.**

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

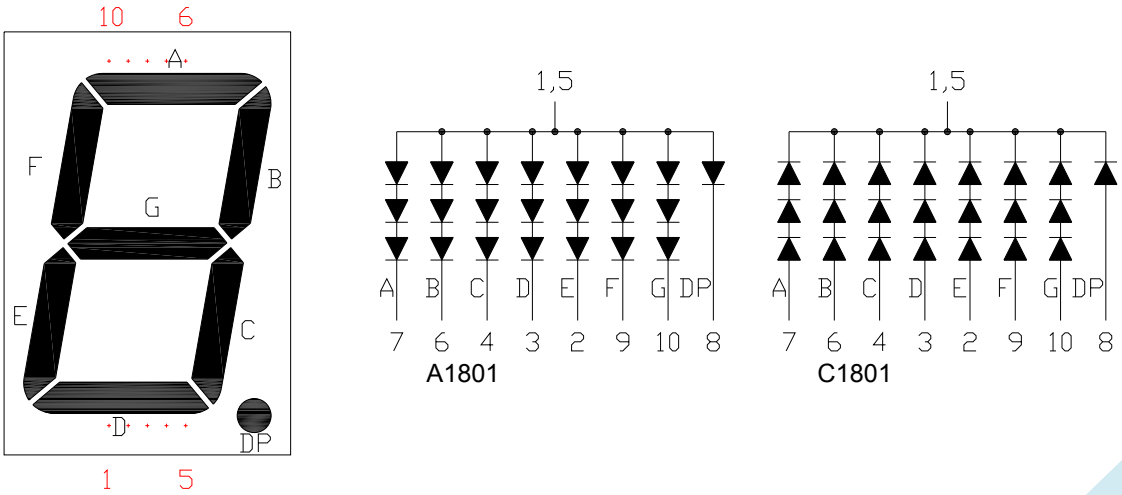
Opto Plus LED Corp.
1.8” Case Mold Type LED Display
A1801W G/W
C1801W G/W

● MECHANICAL DIMENSIONS



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

● TYPICAL INTERNAL EQUIVALENT CIRCUIT



American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

Opto Plus LED Corp.
1.8" Case Mold Type LED Display
A1801W G/W
C1801W G/W

● W: SUPER BRIGHT WHITE (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Super Bright White	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 (per segment)	V_F	I_F =5mA		-	2.9 (8.7)	-	V
Reverse Current	I_R	V_R =5V		-	-	10	μA
Peak Wavelength per SMD	λ_P	I_F =5mA	X	-	0.285	-	nm
			Y	-	0.275	-	
Average Luminous Intensity per SMD	I_V	I_F =5mA		-	160	-	mcd
Average Luminous Intensity per segment	IV	IF =5mA		-	180	-	mcd
Spectrum Radiation Bandwidth	$\Delta\lambda$	I_F =5mA		-	30	-	nm

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

Opto Plus LED Corp.
1.8” Case Mold Type LED Display
A1801W G/W
C1801W G/W

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

Super Bright White (SMD BIN)	**2**	**3**	**4**
	112-140	141-180	181-226
	R1	R2	S1

● WHITE: HUE GRADE (λD : nm)

CIE	**Q**	**R**	**S**
SMD HUE	GG2 / EE2 /CC2 / AA2	HH1 / FF1 /DD1 / BB1	HH2 / FF2 /DD2 / BB2

● COLOR BIN

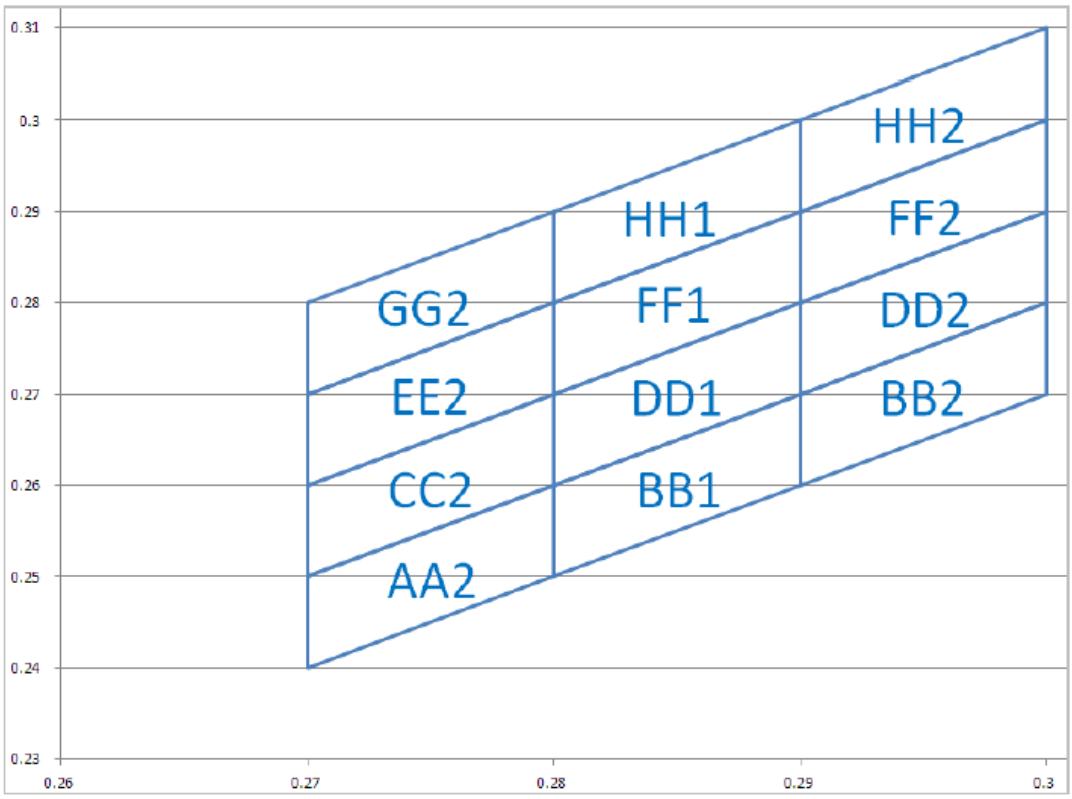
AA2		BB1		BB2		CC2		DD1		DD2	
X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
0.27	0.24	0.28	0.25	0.29	0.26	0.27	0.25	0.28	0.26	0.29	0.27
0.27	0.25	0.28	0.26	0.29	0.27	0.27	0.26	0.28	0.27	0.29	0.28
0.28	0.26	0.29	0.27	0.3	0.28	0.28	0.27	0.29	0.28	0.3	0.29
0.28	0.25	0.29	0.26	0.3	0.27	0.28	0.26	0.29	0.27	0.3	0.28
EE2		FF1		FF2		GG2		HH1		HH2	
X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
0.27	0.26	0.28	0.27	0.29	0.28	0.27	0.27	0.28	0.28	0.29	0.29
0.27	0.27	0.28	0.28	0.29	0.29	0.27	0.28	0.28	0.29	0.29	0.3
0.28	0.28	0.29	0.29	0.3	0.3	0.28	0.29	0.29	0.3	0.3	0.31
0.28	0.27	0.29	0.28	0.3	0.29	0.28	0.28	0.29	0.29	0.3	0.3

● AVAILABLE BIN / HUE TABLE

2Q	3Q	4Q
2R	3R	4R
2S	3S	4S

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

■Chromaticity Coordinate



Opto Plus LED Corp.
1.8” Case Mold Type LED Display
A1801W G/W
C1801W G/W

● W: SUPER BRIGHT WHITE (InGaN/GaN) CURVE

Typical Electro-optical Characteristic Curves

(25 ℃ Free Air Temperature Unless Otherwise Specified)

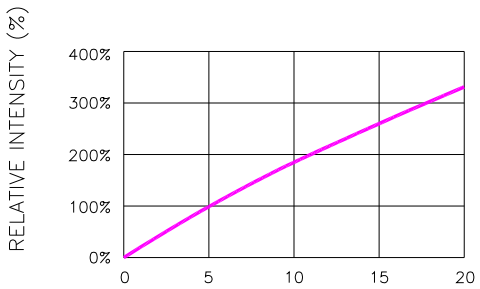


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

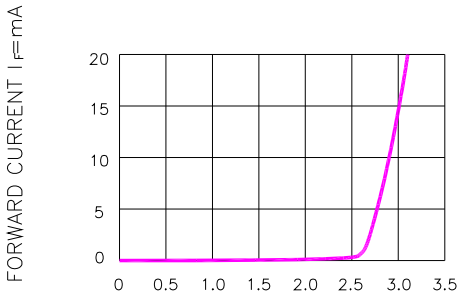


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

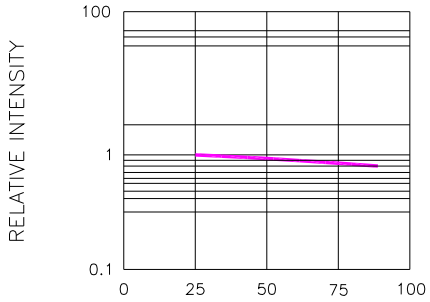


Fig.3 RELATIVE INTENSITY VS.LEAD TEMPERATURE
(PULSED 20 mA; 300us
PULSE,10ms PERIOD)

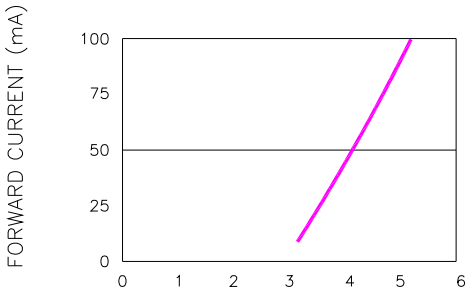


Fig.4 PEAK FORWARD VOLTAGE
VS.FORWARD(100us TEST PULSE,
1% DUTY CYCLE)

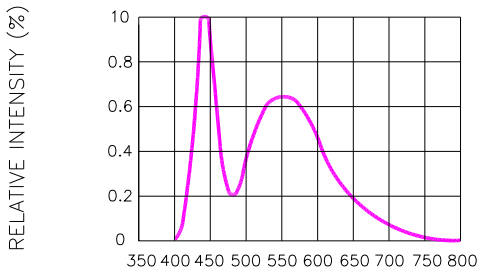


Fig.4 RELATIVE INTENSITY VS. WAVELENGTH

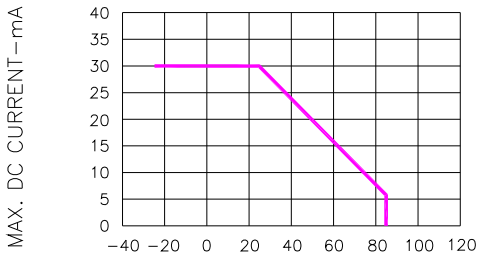
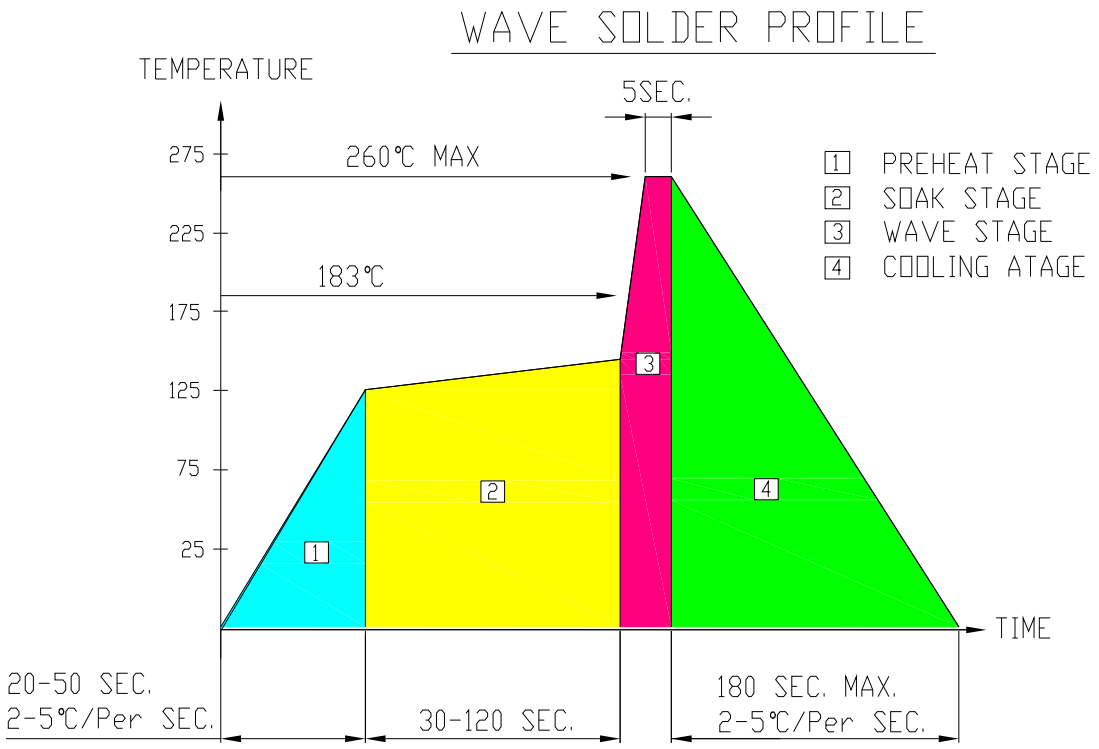


Fig.7 MAX. ALLOWABLE DC CURRENT
VS. AMBIENT TEMPERATURE

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com

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℃.
The head of soldering iron cannot touch copper foil.

American Opto Plus LED Corp. 1206 E. Lexington Ave. , Pomona CA 91766 Tel: 909-465-0080 Fax: 909-465-0130 www.aopled.com