



**American Opto Plus LED Corp.**  
**0.28" Case mold Type LED Display**  
**A284LY-1 B/W**  
**C284LY-1 B/W**

● **EDIT HISTORY**

Version A: Oct. 16, 2015

Preliminary Spec.

Manufacture	Examination	Approving



**American Opto Plus LED Corp.**  
**0.28" Case mold Type LED Display**  
**A284LY-1 B/W**  
**C284LY-1 B/W**

● **FEATURES**

- 0.28 inch (7.0 mm) Digit Height.
- Excellent character appearance.
- Case mold type.
- Low Power Consumption.
- Black face, White segment.
- RoHS compliant, Pb Free.

● **DESCRIPTION**

The A284LY-1 B/W & C284LY-1 B/W is a 0.28 inch (7.0 mm) height quadruple digits display.

This device utilizes Super Bright Yellow LED chip which are made from AlGaInP on a transparent GaAs, substrate. The display has Black face, White segment.

● **DEVICE**

<b>PART NO</b>	<b>DESCRIPTION</b>
<b>Super Bright Yellow</b>	
A284LY-1 B/W	Common Anode
C284LY-1 B/W	Common Cathode

**RoHS Compliance**



**Pb free.**





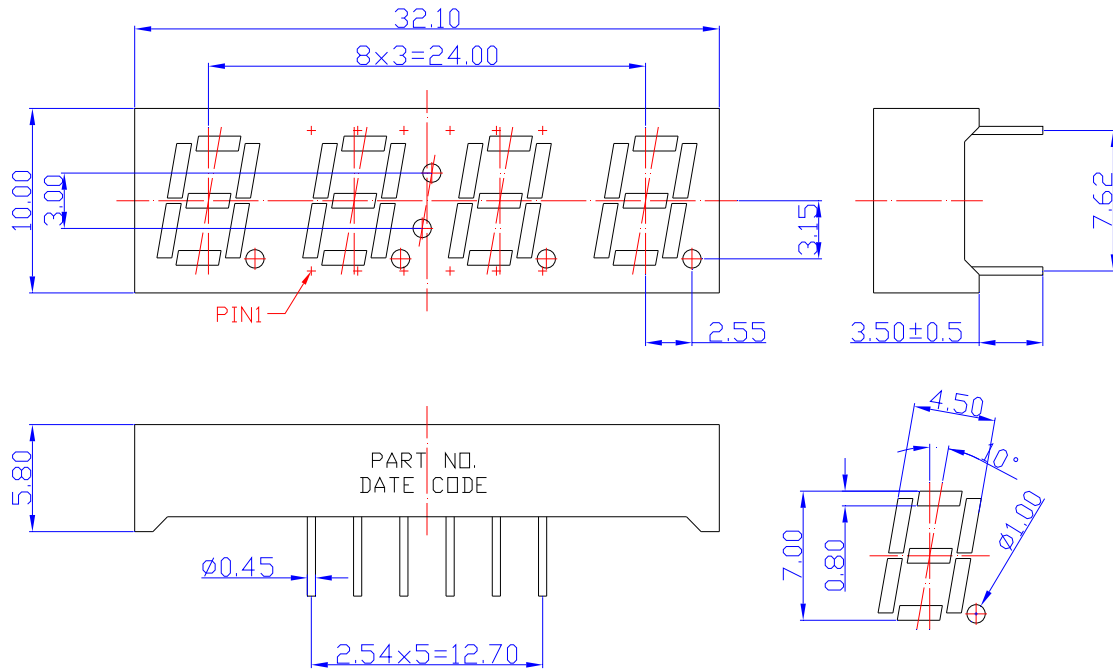
# American Opto Plus LED Corp.

## 0.28" Case mold Type LED Display

### A284LY-1 B/W

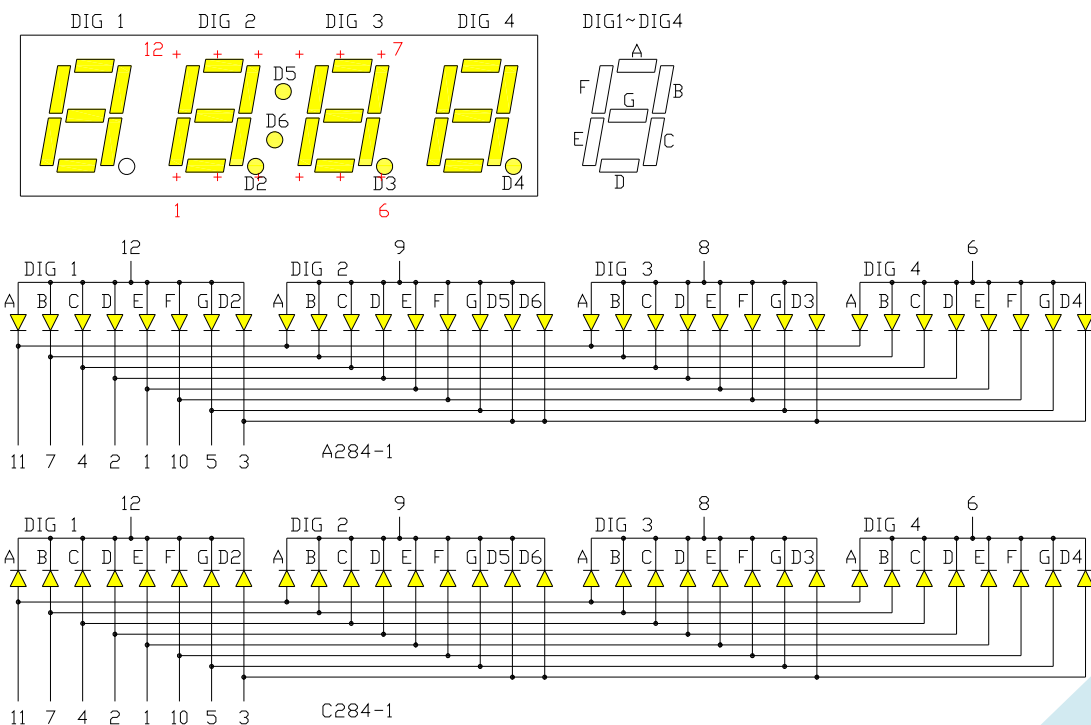
### C284LY-1 B/W

### ● MECHANICAL DIMENSIONS



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

### ● TYPICAL INTERNAL EQUIVALENT CIRCUIT





**American Opto Plus LED Corp.**  
**0.28" Case mold Type LED Display**  
**A284LY-1 B/W**  
**C284LY-1 B/W**

● **LY: SUPER BRIGHT YELLOW (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

Parameter	Symbol	Super Bright Yellow	Unit
Power dissipation per dice	P <sub>AD</sub>	70	mW
Derating liner from 25°C per dice	-	0.33	mA / °C
Continuous forward current per dice	I <sub>AF</sub>	25	mA
Peak current per dice (duty cycle 1/10, 1kHz)	I <sub>PF</sub>	90	mA
Reverse voltage per dice	V <sub>R</sub>	5	V
Operating temperature	T <sub>OPR</sub>	-25 to +85	°C
Storage temperature	T <sub>STG</sub>	-25 to +85	°C

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	-	2.0	2.6	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =5V	-	-	10	μA
Peak wavelength	λ <sub>P</sub>	I <sub>F</sub> =20mA	-	593	-	nm
Dominant wavelength	λ <sub>D</sub>	I <sub>F</sub> =20mA	585	590	595	nm
Luminous intensity	I <sub>v</sub>	I <sub>F</sub> =20mA	-	40	-	mcd
Spectral radiation bandwidth	Δλ	I <sub>F</sub> =20mA	-	20	-	nm



# American Opto Plus LED Corp.

## 0.28" Case mold Type LED Display

### A284LY-1 B/W

### C284LY-1 B/W

#### ● LY: SUPER BRIGHT YELLOW (AlGaInP/GaAs) CURVE

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

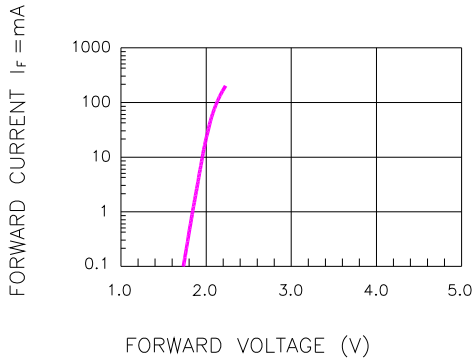


Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE

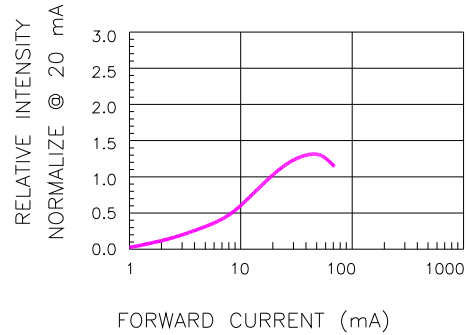


Fig.2 RELATIVE INTENSITY VS. FORWARD CURRENT

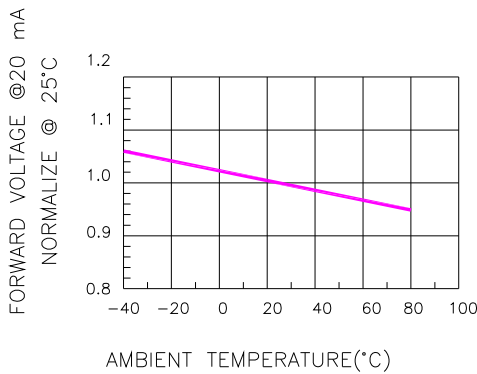


Fig.3 FORWARD VOLTAGE VS. TEMPERATURE

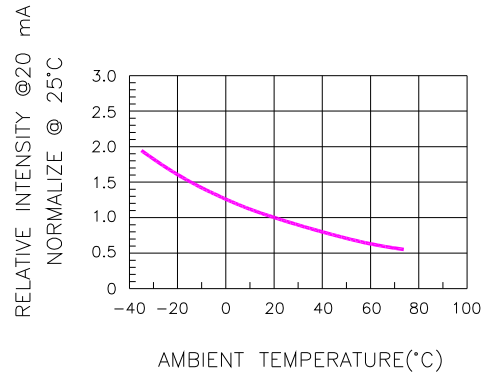


Fig.4 RELATIVE INTENSITY VS. TEMPERATURE

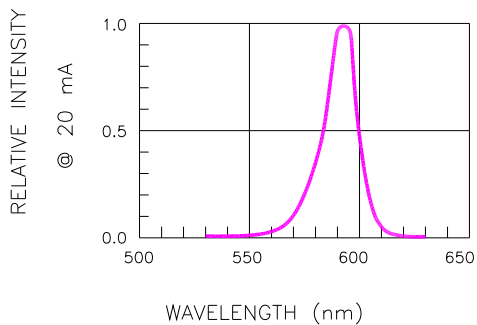


Fig.5 RELATIVE INTENSITY VS. WAVELENGTH

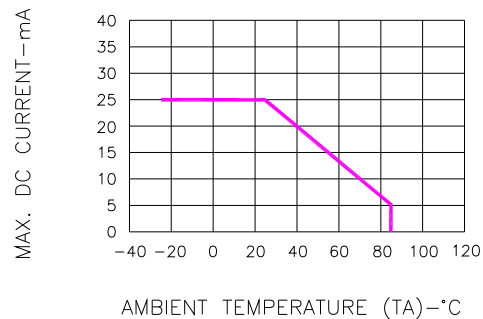
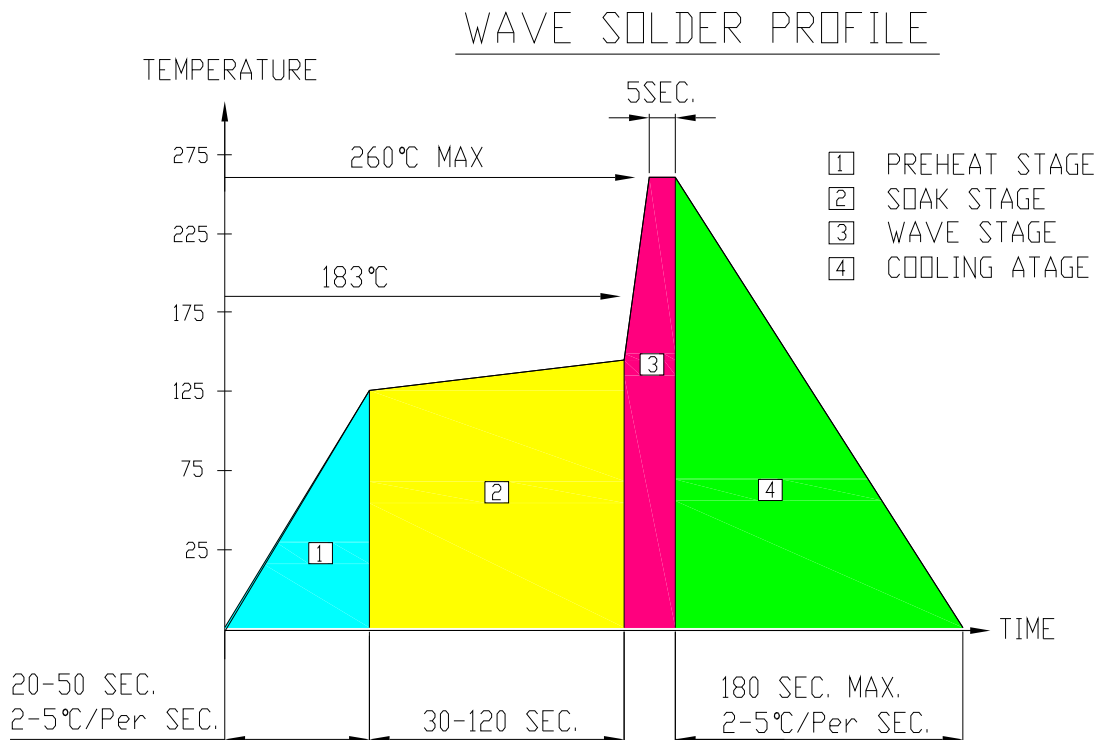


Fig.6 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE



**American Opto Plus LED Corp.**  
**0.28" Case mold Type LED Display**  
**A284LY-1 B/W**  
**C284LY-1 B/W**

● **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  $\leq 4$  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  $\leq 3$  sec under 350°C.  
The head of soldering iron cannot touch copper foil.