



American Opto Plus LED Corp.

0.46" White Multi Digit Display B/W

A-V10018W-AR-BW

FEATURES

- 0.457 inch (11.60 mm) Digit Height
- Excellent character appearance
- Semi-Epoxy type
- Black face, White segment
- RoHS compliant, Pb Free

DESCRIPTION

This device is a 0.457 inch (11.60 mm) height digit with icon display.

This device utilizes Super Bright White SMD LED chip which are made from InGaN

On a transparent GaN substrate

The display has black face and White segment

This mold of display is attached with overlay

DEVICE

COLOR	DESCRIPTION
Super Bright White	Anode Column Cathode Row

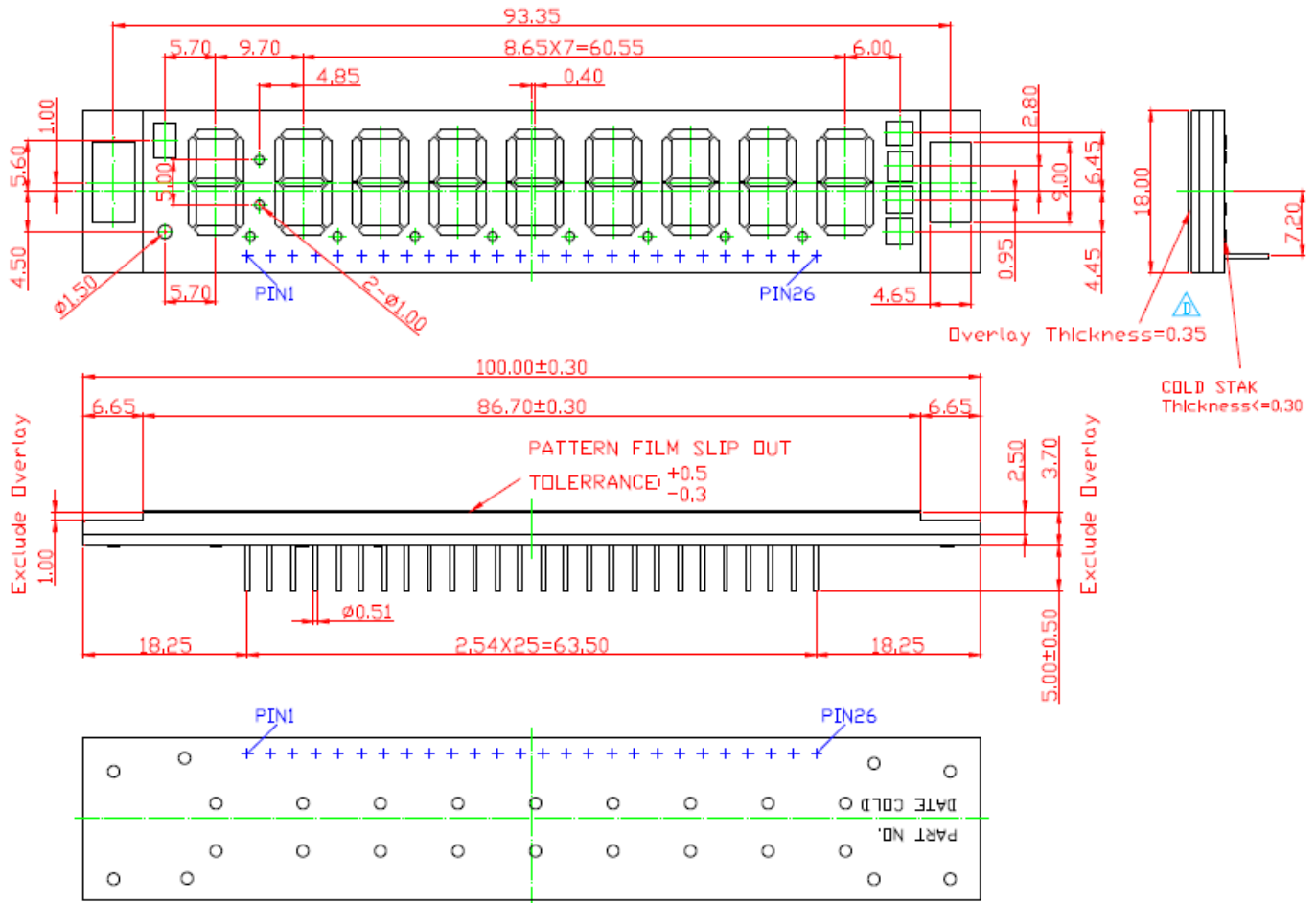


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MECHANICAL DIMENSIONS



Notes:

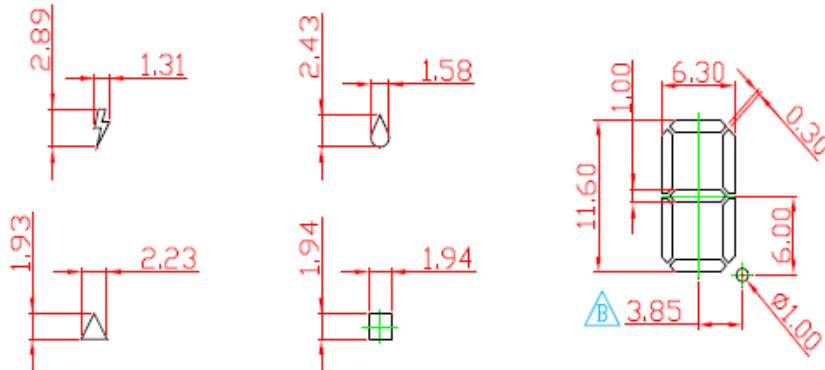
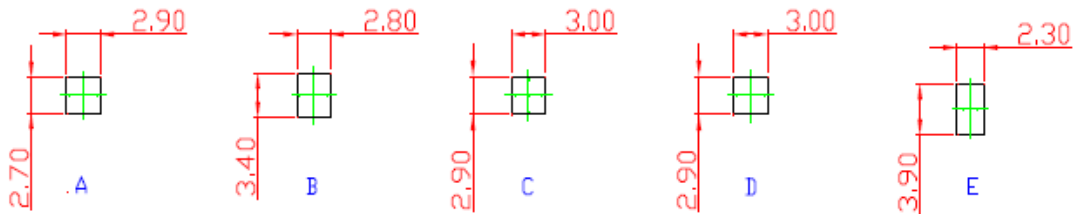
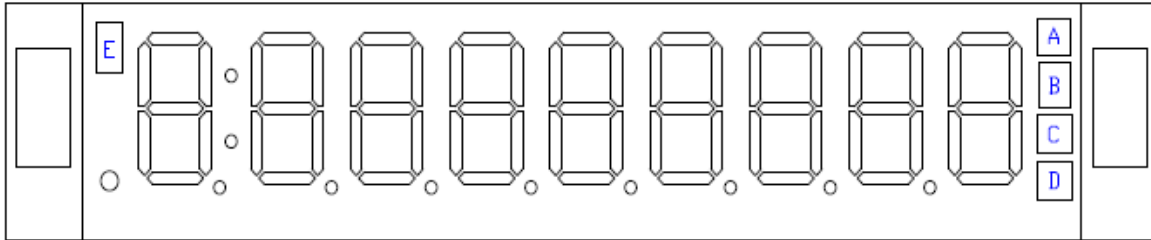
1. All dimensions are in millimeters (inches); tolerances are ±0.25mm (0.01") specified
2. Bending<Length: 1%



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

OVERLAY



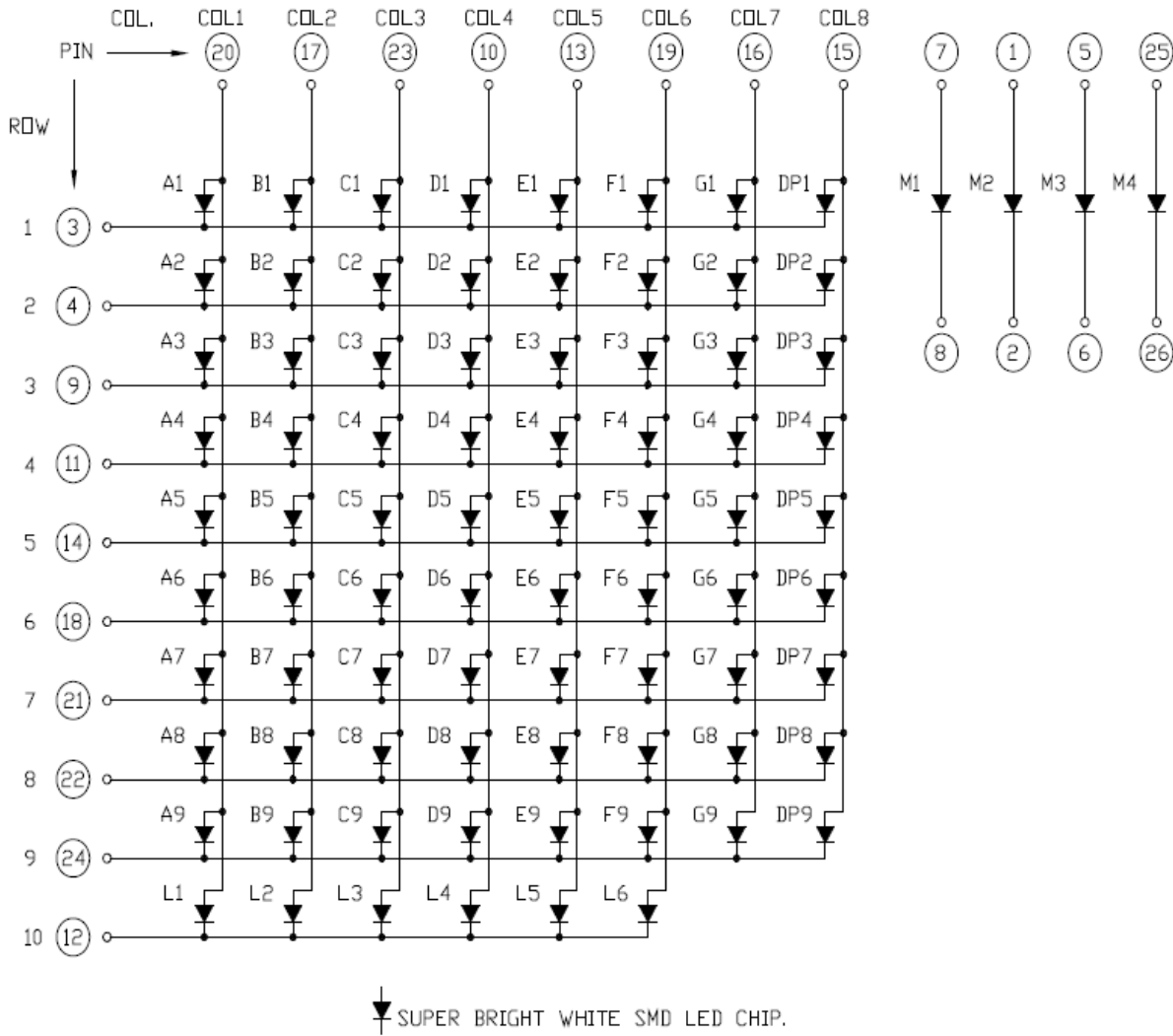
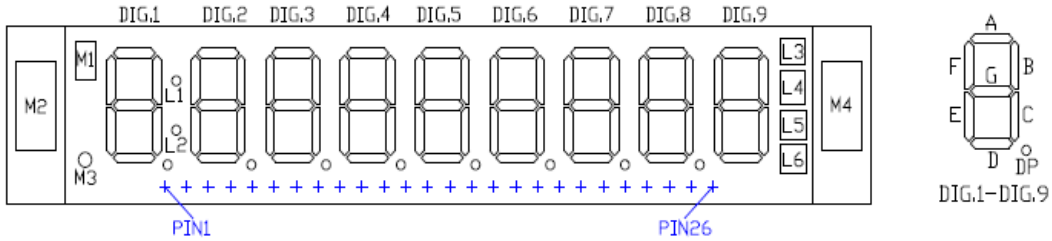


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TYPICAL INTERNAL EQUIVALENT CIRCUIT





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W: SUPER BRIGHT WHITE (InGaN/GaN)

ABSOLUTE MAXIMUM RATING AT Ta=25°C

	Symbol	Maximum Rating	Unit
Power Dissipation	P _{AD}	64	mW
Continuous Forward Current	I _{AF}	20	mA
Peak Current (duty cycle 1/10, 1kHz)	I _{PF}	80	mA
Reverse Voltage	V _R	5	V
Operating Temperature	T _{OPR}	-30 to +85	°C
Storage Temperature	T _{STG}	-40 to +90	°C

ELECTRICAL-OPTICAL CHARACTERISTICS AT Ta=25°C

	Symbol	Condition	Min.	Type.	Max.	Unit
Forward Voltage	V _F	I _F = 5mA	-	2.9	3.5	V
Chromaticity Coordinates	X		-	0.29	-	-
	Y		-	0.28	-	-
Average Luminous Intensity	I _v		70	-	170	mcd
Spectral Radiation Bandwidth	Δλ		-	30	-	nm
Reverse Current	I _R	V _R = 5V	-	-	10	μA



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WHITE: BIN GRADE (Unit: mcd) @ 5mA

Super Bright White	2	3	4
	70.0-100.0	100.1-135.0	135.1-170.0

WHITE: CHROMATICITY COORDINATES BIN Table

CIE	G2	H1	H2	E2	F1	F2
X	0.30	0.31	0.32	0.30	0.31	0.32
	0.29	0.30	0.31	0.29	0.30	0.31
Y	0.31	0.32	0.33	0.30	0.31	0.32
	0.29	0.30	0.31	0.28	0.29	0.30

CIE	C2	D1	D2	A2	B1	B2
X	0.30	0.31	0.32	0.30	0.31	0.32
	0.29	0.30	0.31	0.29	0.30	0.31
Y	0.29	0.30	0.31	0.28	0.29	0.30
	0.27	0.28	0.29	0.26	0.27	0.28



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AVAILABLE BIN TABLE

2G2	2H1	2H2	2E2	2F1	2F2
3G2	3H1	3H2	3E2	3F1	3F2
4G2	4H1	4H2	4E2	4F1	4F2

2C2	2D1	2D2	2A2	2B1	2B2
3C2	3D1	3D2	3A2	3B1	3B2
4C2	4D1	4D2	4A2	4B1	4B2



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W: SUPER BRIGHT WHITE (InGaN/GaN)

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVE @ TA=25°C

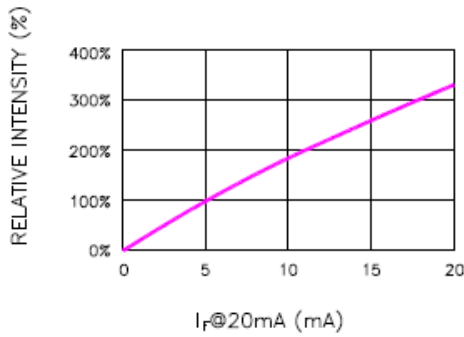


Fig.1 RELATIVE INTENSITY VS. FORWARD CURRENT

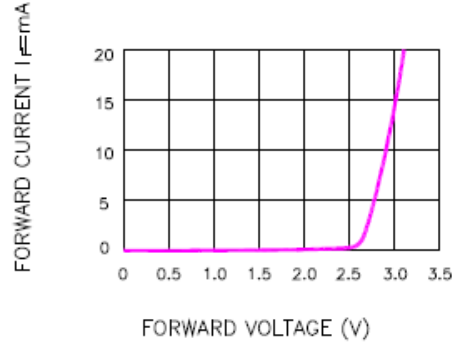


Fig.2 FORWARD CURRENT VS. FORWARD VOLTAGE

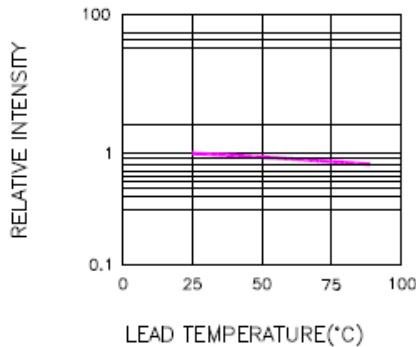


Fig.3 RELATIVE INTENSITY VS. LEAD TEMPERATURE
(PULSED 20 mA; 300us PULSE, 10ms PERIOD)

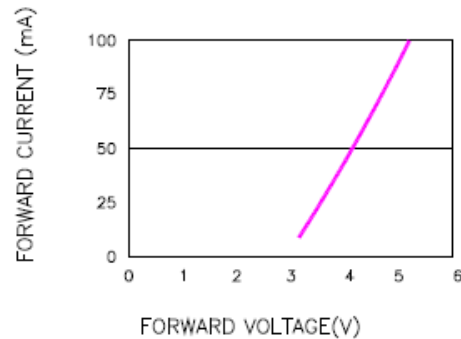


Fig.4 PEAK FORWARD VOLTAGE VS. FORWARD CURRENT
(100us TEST PULSE, 1% DUTY CYCLE)

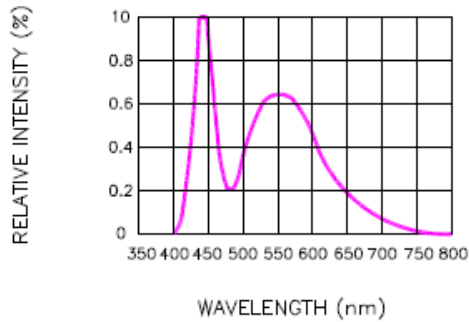


Fig.4 RELATIVE INTENSITY VS. WAVELENGTH

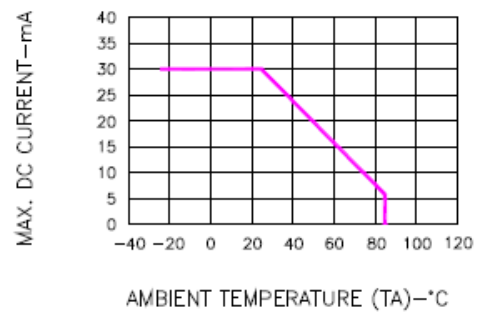


Fig.7 MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE

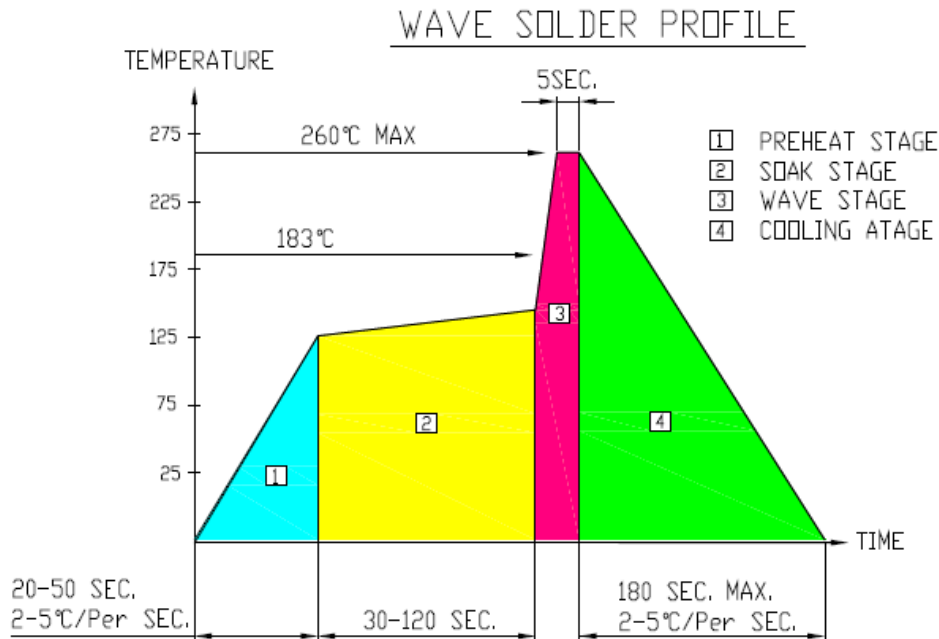


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RECOMMEND SOLDERING PROFILE



Notes:

1. 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
2. Peak wave soldering temperature between 245°C~225°C for 3 sec (5 sec max)
3. 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

1. Customer must finish rework within 3 sec under 350°C
2. The head of soldering iron cannot touch copper foil



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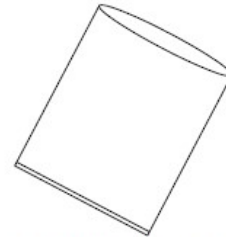
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PACKAGE DIMENSIONS

- 36PCS/1PACKING BLACK ESD TRAY
- 1 PACKING BLACK ESD TRAY / 1 ANTISTATIC E.PE. FOAM SHEET
- 8 PACKING BLACK ESD TRAY / 8 ANTISTATIC E.PE. FOAM SHEET / 2 CARDBOARD

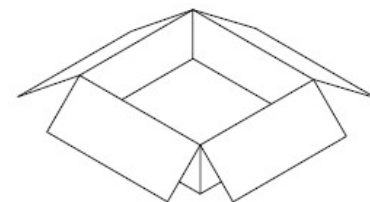


8 PACKING TRAY / 1 ESD BAG / 1 INNER CARTON
288 PCS / 1 INNER CARTON

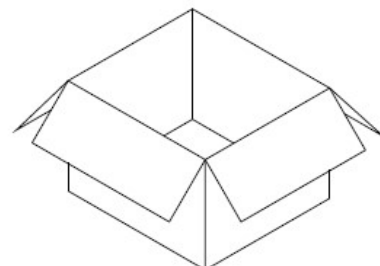


ESD BAG SIZE : 650 x 550 mm

2 INNER CARTON / 1 OUTER CARTON
576 PCS / 1 OUTER CARTON



INNER BOX SIZE : 394 x 370 x 138 mm



OUTER BOX SIZE : 430 x 390 x 300 mm