

**WINSTAR Display**

**OLED SPECIFICATION**

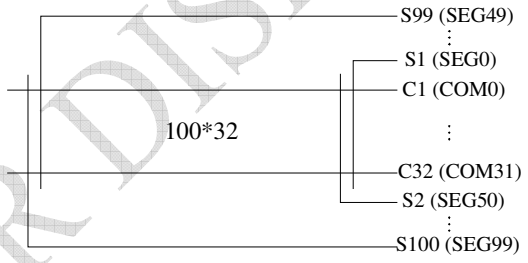
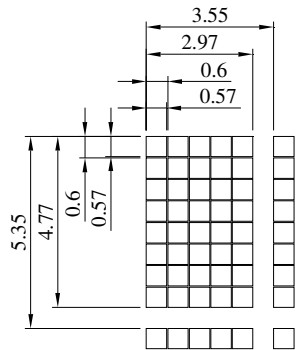
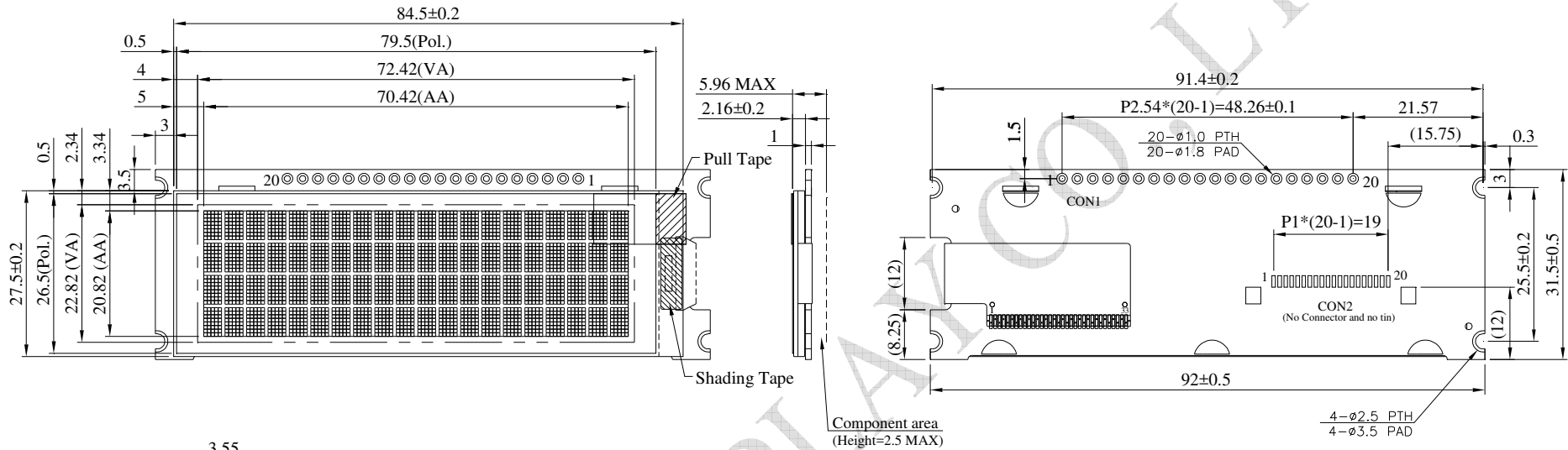
Model No:

***WEA002004C***

## General Specification

Item	Dimension	Unit
Number of Characters	20 characters x 4 Lines	—
Module dimension	92.0 x 31.5 x 5.96 Max.	mm
View area	72.42 x 22.82	mm
Active area	70.42 x 20.82	mm
Dot size	0.57 x 0.57	mm
Dot pitch	0.60 x 0.60	mm
Character size	2.97 x 4.77	mm
Character pitch	3.55 x 5.35	mm
LCD type	OLED , Monochrome	
Duty	1/32	
IC	SSD1311	
Interface	6800, 8080, SPI, I2C	
Size	2.89 inch	

# Contour Drawing & Block Diagram



PIN	SYMBOL	PIN	SYMBOL
1	VSS	11	D4
2	VDD	12	D5
3	REGVDD	13	D6
4	D/C#	14	D7
5	R/W#	15	CS#
6	E/RD#	16	RES#
7	D0	17	BS0
8	D1	18	BS1
9	D2	19	BS2
10	D3	20	VSS

The non-specified tolerance of dimension is  $\pm 0.3$  mm .

## Interface Pin Function

Pin No.	Symbol	Pin Type	Description
1	VSS	P	Ground
2	VDD	P	Power supply and power supply for interface logic level.
3	REGVDD	I	This pin is pulled LOW, internal VDD regulator is disabled (Low voltage I/O application).
4	D/C#	I	<p>This pin is Data/Command control pin connecting to the MCU.</p> <p>When the pin is pulled HIGH, the data at D[7:0] will be interpreted as data.</p> <p>When the pin is pulled LOW, the data at D[7:0] will be transferred to a command register.</p> <p>In I2C mode, this pin acts as SA0 for slave address selection.</p> <p>When serial interface is selected, this pin must be connected to VSS.</p>
5	R/W# (WR#)	I	<p>This pin is read / write control input pin connecting to the MCU interface.</p> <p>When 6800 interface mode is selected, this pin will be used as Read/Write (R/W#) selection input. Read mode will be carried out when this pin is pulled HIGH and write mode when LOW.</p> <p>When 8080 interface mode is selected, this pin will be the Write (WR#) input. Data write operation is initiated when this pin is pulled LOW and the chip is selected.</p> <p>When serial or I2C interface is selected, this pin must be connected to VSS.</p>
6	E/RD#	I	<p>This pin is MCU interface input.</p> <p>When 6800 interface mode is selected, this pin will be used as the Enable (E) signal.</p> <p>Read/write operation is initiated when this pin is pulled HIGH and the chip is selected.</p> <p>When 8080 interface mode is selected, this pin receives the Read (RD#) signal. Read operation is initiated when this pin is pulled LOW and the chip is selected.</p> <p>When serial or I2C interface is selected, this pin must be connected to VSS.</p>

7	D0	I/O	<p>These pins are bi-directional data bus connecting to the MCU data bus. Unused pins are recommended to tie LOW.</p> <p>When serial interface mode is selected, D0 will be the serial clock input: SCLK; D1 will be the serial data input: SID and D2 will be the serial data output: SOD.</p> <p>When I2C mode is selected, D2, D1 should be tied together and serve as SDAout, SDAin in application and D0 is the serial clock input, SCL.</p>																		
8	D1																				
9	D2																				
10	D3																				
11	D4																				
12	D5																				
13	D6																				
14	D7																				
15	CS#	I	<p>This pin is the chip select input connecting to the MCU. The chip is enabled for MCU communication only when CS# is pulled LOW (active LOW). In I2C mode, this pin must be connected to VSS.</p>																		
16	RES#	I	<p>This pin is reset signal input. When the pin is pulled LOW, initialization of the chip is executed. Keep this pin pull HIGH during normal operation.</p>																		
17	BS0	I	<p>setting as described in the following table. BS2, BS1 and BS0 are pin select. Bus Interface selection</p> <table border="1"> <thead> <tr> <th>BS[2:0]</th> <th>Interface</th> </tr> </thead> <tbody> <tr> <td>000</td> <td>Serial Interface</td> </tr> <tr> <td>001</td> <td>Invalid</td> </tr> <tr> <td>010</td> <td>I<sup>2</sup>C</td> </tr> <tr> <td>011</td> <td>Invalid</td> </tr> <tr> <td>100</td> <td>8-bit 6800 parallel</td> </tr> <tr> <td>101</td> <td>4-bit 6800 parallel</td> </tr> <tr> <td>110</td> <td>8-bit 8080 parallel</td> </tr> <tr> <td>111</td> <td>4-bit 8080 parallel</td> </tr> </tbody> </table> <p>Note (1) 0 is connected to VSS (2) 1 is connected to VDD</p>	BS[2:0]	Interface	000	Serial Interface	001	Invalid	010	I <sup>2</sup> C	011	Invalid	100	8-bit 6800 parallel	101	4-bit 6800 parallel	110	8-bit 8080 parallel	111	4-bit 8080 parallel
BS[2:0]	Interface																				
000	Serial Interface																				
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011	Invalid																				
100	8-bit 6800 parallel																				
101	4-bit 6800 parallel																				
110	8-bit 8080 parallel																				
111	4-bit 8080 parallel																				
18	BS1																				
19	BS2																				
20	VSS (FRGnd)	P	Ground																		

## Absolute Maximum Ratings

Item	Symbol	Min	Max	Unit
Operating Temperature	TOP	-40	+80	°C
Storage Temperature	TST	-40	+85	°C
Supply Voltage For Logic	VDD-VSS	-0.3	3.6	V

## Electrical Characteristics

### DC Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	VDD-VSS	—	2.8	3.0	3.3	V
Input High Volt.	VIH	—	0.8xVDD	—	VDD	V
Input Low Volt.	VIL	—	GND	—	0.2xVDD	V
Output High Volt.	VOH	IOH=-0.5mA	0.8xVDD	—	VDD	V
Output Low Volt.	VOL	IOL=0.5mA	GND	—	0.2xVDD	V
50% Check Board Operating Current	IDD	VDD=3V	-	60	110	mA