

WINSTAR Display

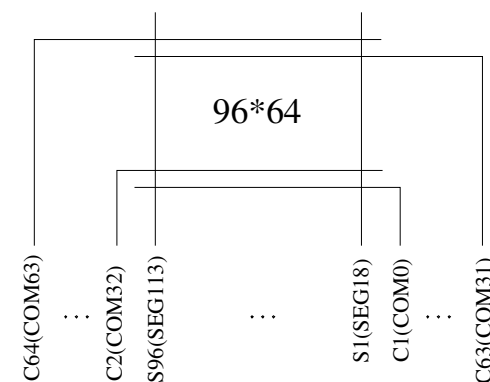
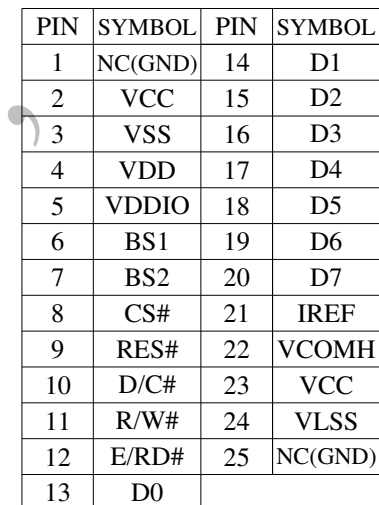
OLED SPECIFICATION

Model No:

WEO009664A

General Specification

Item	Dimension	Unit
Dot Matrix	96 x 64 Dots	—
Module dimension	24.90 x 22.95 x 1.77	mm
Active Area	19.946 x 13.418	mm
Pixel Size	0.184 x 0.186	mm
Pixel Pitch	0.208 x 0.210	mm
Display Mode	Passive Matrix	
Display Color	Monochrome	
Drive Duty	1/64 Duty	
IC	SSD1305	
Interface	6800,8080,4-Wire SPI,I2C	
Size	0.95 inch	



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

Interface Pin Function

Pin Number	Symbol	I/O	Function													
1.	N.C. (GND)	-	Reserved Pin(Supporting Pin) The supporting pins can reduce the influences from stresses on the function pins. These pins must be connected to external ground.													
2.	VCC	P	Power Supply for OLED Panel This is the most positive voltage supply pin of the chip.It must be supplied externally.													
3.	VSS	P	Ground of Logic Circuit This is a ground pin. It also acts as a reference for the logic pins. It must be connected to external ground.													
4.	VDD	P	Power Supply for Logic Circuit This is a voltage supply pin. It must be connected to external source.													
5.	VDDIO	P	Power supply for interface logic level. It should be match with MCU interface voltage level. VDDIO must always be equal or lower than VDD.													
6.	BS1 BS2	I	Communicating Protocol Select These pins are MCU interface selection input. See the following table:													
7.			<table><tr><td></td><td>68XX-parallel</td><td>80XX-parallel</td><td>Serial</td><td>I2C</td></tr><tr><td>BS1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr><tr><td>BS2</td><td>1</td><td>1</td><td>0</td><td>0</td></tr></table>		68XX-parallel	80XX-parallel	Serial	I2C	BS1	0	1	0	1	BS2	1	1
	68XX-parallel	80XX-parallel	Serial	I2C												
BS1	0	1	0	1												
BS2	1	1	0	0												
8.	CS#	I	Chip Select This pin is the chip select input. The chip is enabled for MCU communication only when CS# is pulled low.													
9.	RES#	I	Power Reset for Controller and Driver This pin is reset signal input. When the pin is low, initialization of the chip is executed.													
10.	D/C#	I	Data/ Command Control This pin is Data/Command control pin. When the pin is pulled high, the input at D7~D0 is treated as display data. When the pin is pulled low, the input at D7~D0 will be transferred to the command register. For detail relationship to MCU interface signals, please refer to the Timing Characteristics Diagrams. When the pin is pulled high and serial interface mode is selected, the data at SDIN is treated as data. When it is pulled low, the data at SDIN will be transferred to the command register. In I2C mode, this pin acts as SA0 for slave address selection.													
11.	R/W#	I	Read/ Write Selector Write This pin is MCU interface input. When interfacing to a68XX-series microprocessor, this pin will be used as Read/Write (R/W#) selection input. Pull this pin to “High” for read mode and pull it to “Low” for write mode. When 80XXinterface mode is selected, this pin will be the Write (WR#) input. Data write operation is initiated when this pin is pulled low and the CS# is pulled low.													

12.	E/RD#	I	<p>Read/Write Enable or Read</p> <p>This pin is MCU interface input. When interfacing to a68XX-series microprocessor, this pin will be used as the Enable (E) signal. Read/write operation is initiated when this pin is pulled high and the CS# is pulled low.</p> <p>When connecting to an 80XX-microprocessor, this pin receives the Read (RD#) signal. Data read operation is initiated when this pin is pulled low and CS# is pulled low.</p>
13.	D0~D7	I/O	<p>Host Data In put/ Output Bus</p> <p>These pins are 8-bit bi-directional data bus to be connected to the microprocessor's data bus. When serial mode is selected, D1 will be the serial data input SDIN and D0 will be the serial clock input SCLK. When I2Cmode is selected, D2 & D1 should be tied together and serve as SDAout & SDAin in application and D0 is the serial clock input SCL.</p>
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15.			
16.			
17.			
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20.			
21.	IREF	I	<p>Current Reference for Brightness Adjustment</p> <p>This pin is segment current reference pin. A resistor should be connected between this pin and VSS. Set the current lower than 10μA.</p>
22.	VCOMH	O	<p>Voltage Output High Level for COM Signal</p> <p>This pin is the input pin for the voltage output high level for COM signals. A capacitor should be connected between this pin and VSS.</p>
23.	VCC	P	<p>Power Supply for OLED Panel</p> <p>This is the most positive voltage supply pin of the chip. It must be supplied externally.</p>
24.	VLSS	P	<p>Ground of Analog Circuit</p> <p>This is an analog ground pin. It should be connected to VSS externally.</p>
25.	N.C. (GND)	-	<p>Reserved Pin(Supporting Pin)</p> <p>The supporting pins can reduce the influences from stresses on the function pins. These pins must be connected to external ground.</p>

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD	-0.3	4.0	V
Supply Voltage for Display	VCC	0	15.0	V
Logic Supply Voltage for MCU interface	VDDIO	0.3	VDD+0.5	V
Operating Temperature	TOP	-40	+80	°C
Storage Temperature	TSTG	-40	+85	°C

Electrical Characteristics

DC Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage for Logic	VDD	—	2.8	3.0	3.3	V
Supply Voltage for Display	VCC	—	11.5	12	12.5	V
Logic Supply Voltage for MCU interface	VDDIO	—	1.6	—	VDD	V
Input High Volt.	VIH	—	$0.8 \times VDDIO$	—	VDDIO	V
Input Low Volt.	VIL	—	0	—	$0.2 \times VDDIO$	V
Output High Volt.	VOH	—	$0.9 \times VDDIO$	—	VDDIO	V
Output Low Volt.	VOL	—	0	—	$0.1 \times VDDIO$	V
50% Check Board operating Current	ICC	VCC=12V	—	6.0	7.5	mA