WINSTAR Display

OLED SPECIFICATION

Model No:

WEO12864x#ALxxxxxxx-FC

Represented by:

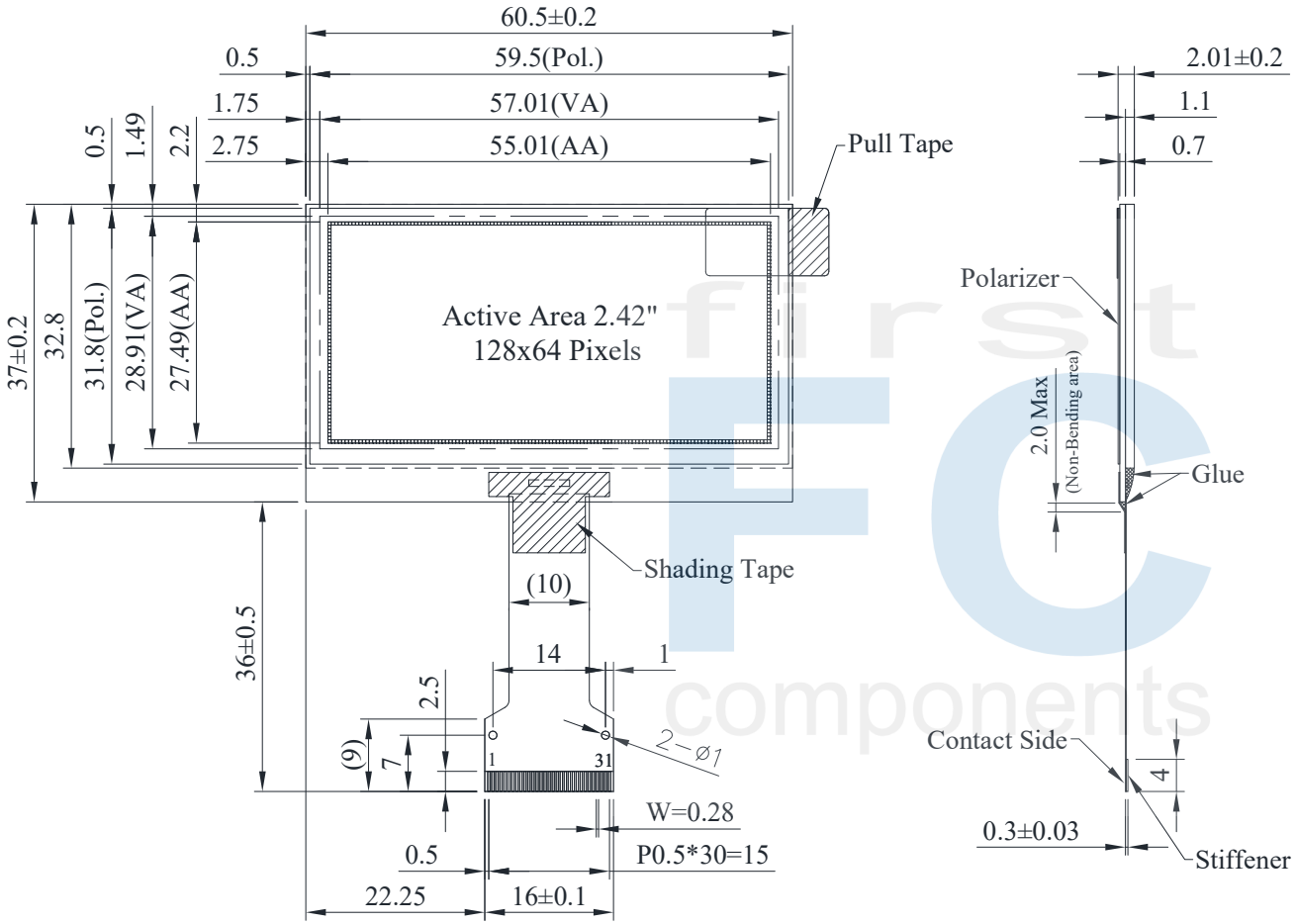
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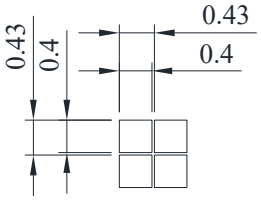
General Specification

Item	Dimension	Unit
Dot Matrix	128 x 64	—
Module dimension	60.5 × 37.0 × 2.01	mm
Active Area	55.01 × 27.49	mm
Pixel Size	0.40 × 0.40	mm
Pixel Pitch	0.43 × 0.43	mm
Display Mode	Passive Matrix	
Display Color	Monochrome	
Drive Duty	1/64 Duty	
IC	SH1106	
Interface	I2C , 4-Wire SPI , 8-bits 6800 or 8080 parallel	
Size	2.42 inch	

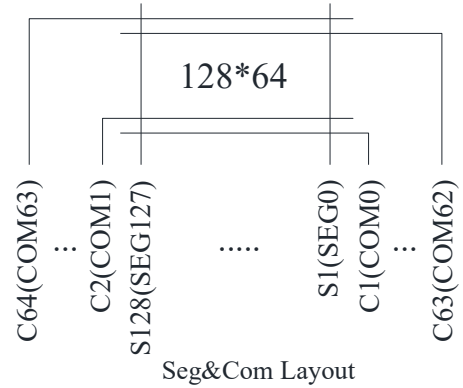
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Contour Drawing & Block Diagram





Dots Size
Scale 10/1



PIN	SYMBOL	PIN	SYMBOL
1	ESD_GND	17	A0
2	VSS	18	$\overline{WR}$
3	NC	19	E/$\overline{RD}$
4	NC	20	D0
5	NC	21	D1
6	NC	22	D2
7	NC	23	D3
8	NC	24	D4
9	NC	25	D5
10	NC	26	D6
11	VDD1	27	D7
12	IM1	28	IREF
13	IM2	29	VCOMH
14	NC	30	VPP
15	$\overline{CS}$	31	ESD_GND
16	$\overline{RES}$		

The non-specified tolerance of dimension is ±0.3mm.

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Interface Pin Function

<table>
<tr><th>No.</th><th>Symbol</th><th>Function</th></tr>
<tr><td>1</td><td>ESD_GND</td><td>ESD Ground pin</td></tr>
<tr><td>2</td><td>VSS</td><td>Ground.</td></tr>
<tr><td>3-10</td><td>NC</td><td>No connection</td></tr>
<tr><td>11</td><td>VDD1</td><td>Power supply input</td></tr>
<tr><td>12</td><td>IM1</td><td rowspan="2">These are the MPU interface mode select pads.
<table>
<tr><td></td><td>8080</td><td>I2C</td><td>6800</td><td>4-wire SPI</td></tr>
<tr><td>IM1</td><td>1</td><td>1</td><td>0</td><td>0</td></tr>
<tr><td>IM2</td><td>1</td><td>0</td><td>1</td><td>0</td></tr>
</table>
Note
(1) 0 is connected to VSS
(2) 1 is connected to VDD1</td></tr>
<tr><td>13</td><td>IM2</td></tr>
<tr><td>14</td><td>NC</td><td>No connection</td></tr>
<tr><td>15</td><td>$\overline{CS}$</td><td>This pad is the chip select input. When $\overline{CS}$ = “L”, then the chip select becomes active, and data/command I/O is enabled.</td></tr>
<tr><td>16</td><td>$\overline{RES}$</td><td>This is a reset signal input pad. When $\overline{RES}$ is set to “L”, the settings are initialized. The reset operation is performed by the $\overline{RES}$ signal level.</td></tr>
<tr><td>17</td><td>A0</td><td>This is the Data/Command control pad that determines whether the data bits are data or a command.
A0 = “H”: the inputs at D0 to D7 are treated as display data.
A0 = “L”: the inputs at D0 to D7 are transferred to the command registers.
In I2C interface, this pad serves as SA0 to distinguish the different address of OLED driver.</td></tr>
<tr><td>18</td><td>$\overline{WR}$
(R/$\overline{W}$)</td><td>This is a MPU interface input pad.
When connected to an 8080 MPU, this is active LOW. This pad connects to the 8080 MPU $\overline{WR}$ signal. The signals on the data bus are latched at the rising edge of the $\overline{WR}$ signal.
When connected to a 6800 Series MPU: This is the read/write control signal input terminal.
When R/$\overline{W}$ = “H”: Read.
When R/$\overline{W}$ = “L”: Write.</td></tr>
</table>

19	E/$\overline{RD}$	This is a MPU interface input pad. When connected to an 8080 series MPU, it is active LOW. This pad is connected to the $\overline{RD}$ signal of the 8080 series MPU, and the data bus is in an output status when this signal is “L”. When connected to a 6800 series MPU, this is active HIGH. This is used as an enable clock input of the 6800 series MPU. When $\overline{RD}$ = “H”: Enable. When $\overline{RD}$ = “L”: Disable.
20~27	D0~D7	This is an 8-bit bi-directional data bus that connects to an 8-bit or 16-bit standard MPU data bus. When the serial interface is selected, then D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SI). At this time, D2 to D7 are set to high impedance. When the I2C interface is selected, then D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SDAI). At this time, D2 to D7 are set to high impedance.
28	IREF	This is a segment current reference pad. A resistor should be connected between this pad and VSS. Set the current at 18.75uA.
29	VCOMH	This is a pad for the voltage output high level for common signals. A capacitor should be connected between this pad and VSS.
30	VPP	OLED panel power supply. Generated by internal charge pump. Connect to capacitor. It could be supplied externally.
31	ESD_GND	ESD Ground pin

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Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD1	-0.3	3.6	V
Supply Voltage for Display	VPP	-0.3	14.5	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	VDD1	–	1.65	3.0	3.3	V
Supply Voltage for Display	VPP	–	6.4	13.0	13.5	V
High Level Input	VIH	–	0.8×VDD1	–	VDD1	V
Low Level Input	VIL	–	VSS	–	0.2×VDD1	V
High Level Output	VOH	–	0.8×VDD1	–	VDD1	V
Low Level Output	VOL	–	VSS	–	0.2×VDD1	V
Display 50% Pixel on	IPP	VPP =13V	–	22	33	mA

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