WINSTAR Display

OLED SPECIFICATION

Model No:

WEX25664W#DP3N00000-FC

Represented by:

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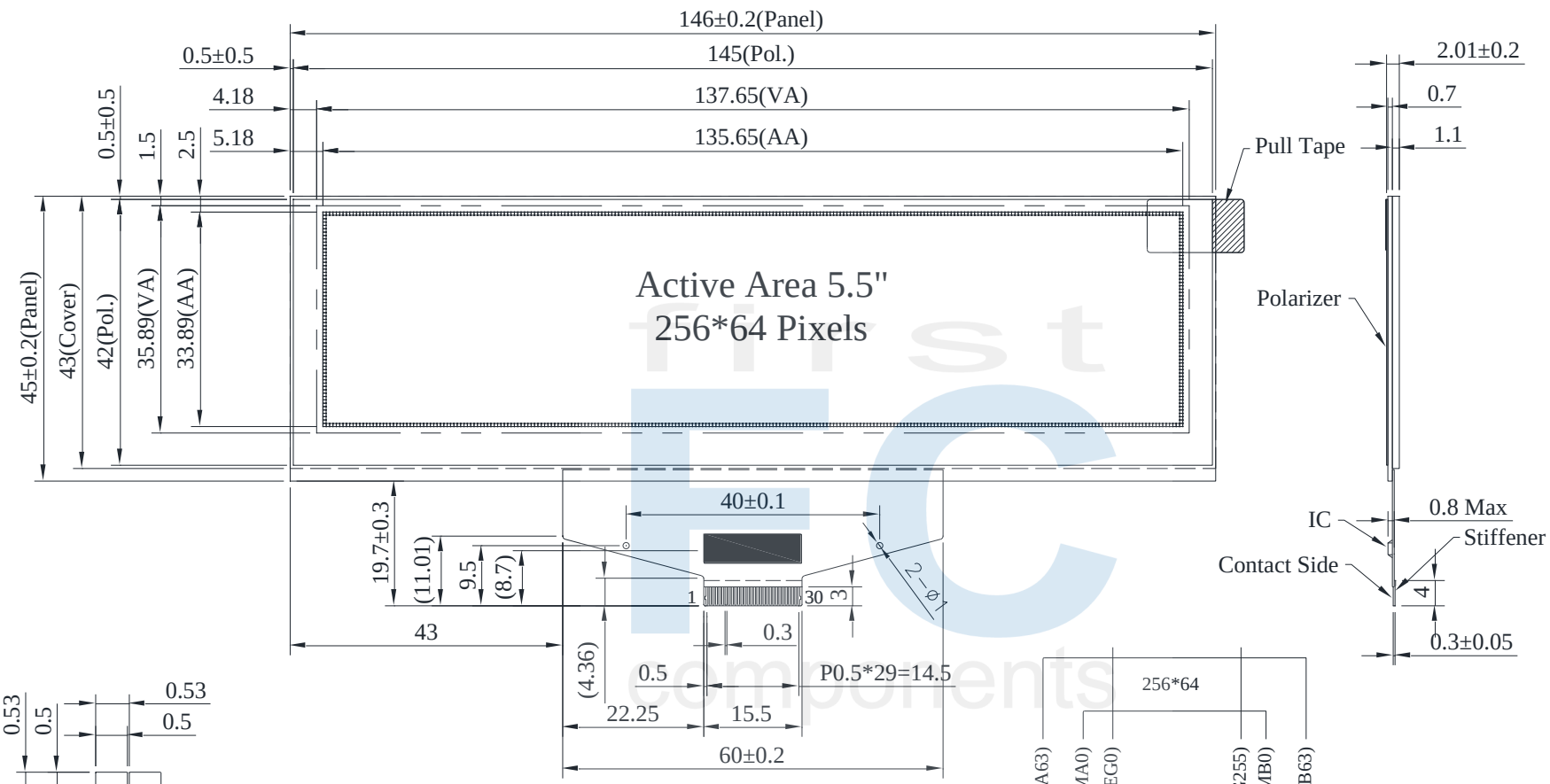
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General Specification

Item	Dimension	Unit
Dot Matrix	256 x 64 Dots	—
Module dimension	146.0 × 45.0 × 2.01	mm
Active Area	135.65 × 33.89	mm
Pixel Size	0.50 × 0.50	mm
Pixel Pitch	0.53 × 0.53	mm
Display Mode	Passive Matrix	
Display Color	White	
Drive Duty	1/64 Duty	
Gray Scale	4 bits	
IC	SSD1322	
Interface	6800, 8080, SPI	
Size	5.5 inch	

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Contour Drawing & Block Diagram



PIN	SYMBOL
1	NC(GND)
2	VSS
3	VCC
4	VCOMH
5	VLSS
6	D7
7	D6
8	D5
9	D4
10	D3
11	D2
12	D1
13	D0
14	E/RD#
15	R/W#
16	BS0
17	BS1
18	DC#
19	CS#
20	RES#
21	FR
22	IREF
23	NC
24	VDDIO
25	VDD
26	VCI
27	VSL
28	VLSS
29	VCC
30	NC(GND)

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

Interface Pin Function

<table>
<tr><th>No.</th><th>Symbol</th><th>Function</th></tr>
<tr><td>1</td><td>N.C.</td><td>The N.C. pin between function pins are reserved for compatible and flexible design.</td></tr>
<tr><td>2</td><td>VSS</td><td>Ground.</td></tr>
<tr><td>3</td><td>VCC</td><td>Power supply for panel driving voltage.
This is also the most positive power voltage supply pin.</td></tr>
<tr><td>4</td><td>VCOMH</td><td>COM signal deselected voltage level.
A capacitor should be connected between this pin and VSS.</td></tr>
<tr><td>5</td><td>VLSS</td><td>Analog system ground pin.</td></tr>
<tr><td>6~13</td><td>D7~D0</td><td>These pins are bi-directional data bus connecting to the MCU data bus.
Unused pins are recommended to tie LOW. (Except for D2 pin in SPI mode)</td></tr>
<tr><td>14</td><td>E/RD#</td><td>This pin is MCU interface input.
When interfacing to a 6800-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 chip is selected.
When connecting to an 8080-microprocessor, this pin receives the Read (RD#) signal. Read operation is initiated when this pin is pulled LOW and the chip is selected.
When serial interface is selected, this pin E(RD#) must be connected to VSS.</td></tr>
<tr><td>15</td><td>R/W#</td><td>This pin is read / write control input pin connecting to the MCU interface.
When interfacing to a 6800-series microprocessor, 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.
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.
When serial interface is selected, this pin R/W (WR#) must be connected to VSS.</td></tr>
<tr><td>16</td><td>BS0</td><td rowspan="2">MCU bus interface selection pins. Select appropriate logic setting as described in the following table.
<table><tr><th>BS[1:0]</th><th>Bus Interface Selection</th></tr><tr><td>00</td><td>4 line SPI</td></tr><tr><td>01</td><td>3 line SPI</td></tr><tr><td>10</td><td>8-bit 8080 parallel</td></tr><tr><td>11</td><td>8-bit 6800 parallel</td></tr></table>Note
(1) 0 is connected to VSS
(2) 1 is connected to VDDIO</td></tr>
<tr><td>17</td><td>BS1</td></tr>
<tr><td>18</td><td>D/C#</td><td>This pin is Data/Command control pin connecting to the MCU.
When the pin is pulled HIGH, the content at D[7:0] will be interpreted as data.
When the pin is pulled LOW, the content at D[7:0] will be interpreted as command.</td></tr>
</table>

19	CS#	This pin is the chip select input connecting to the MCU. The chip is enabled for MCU communication only when CS# is pulled LOW.
20	RES#	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.
21	FR	This pin is No Connection pins. Nothing should be connected to this pin. This pin should be left open individually.
22	IREF	This pin is the segment output current reference pin. A resistor should be connected between this pin and VSS to maintain the current around 10uA.
23	N.C.	The N.C. pin between function pins are reserved for compatible and flexible design.
24	VDDIO	Power supply for interface logic level. It should be matched with the MCU interface voltage level.
25	VDD	Power supply pin for core logic operation. A capacitor is required to connect between this pin and VSS.
26	VCI	Low voltage power supply. VCI must always be equal to or higher than VDD and VDDIO.
27	VSL	This is segment voltage reference pin. When external VSL is used, connect with resistor and diode to ground.
28	VLSS	Analog system ground pin.
29	VCC	Power supply for panel driving voltage. This is also the most positive power voltage supply pin.
30	N.C.	The N.C. pin between function pins are reserved for compatible and flexible design.

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Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Supply Voltage for Logic	VDD	-0.5	2.75	V	1, 2
Low voltage power supply	VCI	-0.3	4.0	V	1, 2
Power supply for I/O pins	VDDIO	-0.5	VCI	V	1, 2
Supply Voltage for Display	VCC	-0.5	21.0	V	1, 2
Operating Temperature	TOP	-40	+80	°C	—
Storage Temperature	TSTG	-40	+85	°C	—

Note ：

1. All the above voltages are on the basis of “VSS = 0V”.
2. When this module is used beyond the above absolute maximum ratings, permanent breakage of the module may occur. Also, for normal operations, it is desirable to use this module under the conditions according to Section 6 ‘’Electrical Characteristics”. If this module is used beyond these conditions, malfunctioning of the module can occur and the reliability of the module may deteriorate.
3. The absolute limit temperature was verified according to the test conditions of reliability test (See section 9. Reliability) , and module was met all criteria.
4. The defined temperature ranges do not include the polarizer. The maximum withstood temperature of the polarizer should be 80 °C.

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Electrical Characteristics

DC Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage for Logic	VDD	–	2.4	2.5	2.6	V
Power Supply for I/O pins	VDDIO	–	1.65	3.0	VCI	V
Low voltage power supply	VCI	–	2.4	3.0	3.5	V
Supply Voltage for Display	VCC	–	10.0	18.0	18.5	V
High Level Input	VIH	–	0.8×VDDIO	–	VDDIO	V
Low Level Input	VIL	–	0	–	0.2×VDDIO	V
High Level Output	VOH	–	0.9×VDDIO	–	VDDIO	V
Low Level Output	VOL	–	0	–	0.1×VDDIO	V
Display 30% Pixel on	ICC	VCC =18V	–	40	60	mA

Note：

1. Supply Voltage for Logic = VDD core power supply can be regulated from VCI.
2. VCI must be larger than or equal to VDD.
3. The VCC (VPP) value can be adjusted according to the demand brightness. When VCC (VPP) is lowered, the brightness decreases or when VCC (VPP) is increased, the brightness increases. The VCC (VPP) value is set within the recommended range. The life time of OLED is directly related to the set brightness, and lower brightness helps to improve the life time.
4. 30% Pixel On: Each Common Line lights up 30% pixels of one line.

Optical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
View Angle	(V)θ	–	160	–	–	deg
	(H)φ	–	160	–	–	deg
Contrast Ratio	CR	Dark	10,000:1	–	–	–
Response Time	T rise	–	–	10	–	μs
	T fall	–	–	10	–	μs
Display with 30% Pixel On Brightness(1)			50	70	–	cd/m²
CIEx(White)		(CIE1931)	0.24	0.28	0.32	–
CIEy(White)		(CIE1931)	0.28	0.32	0.36	–

Note:

1. The brightness value is based on the setting of VCC(VPP) equal to the Typical value.
2. 30% Pixel On: Each Common Line lights up 30% pixels of one line.

