AbN
automation

WINSTAR Display

OLED SPECIFICATION

Model No:

WEF012864H

WINSTAR DISPLAY, T

General Specification

Item	Dimension	Unit
Dot Matrix	128 x 64	—
Module dimension	77.2 × 42.14 ×3.4	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	SSD1309ZC	
Interface	6800,8080,SPI,I2C	
Size	2.42 inch	

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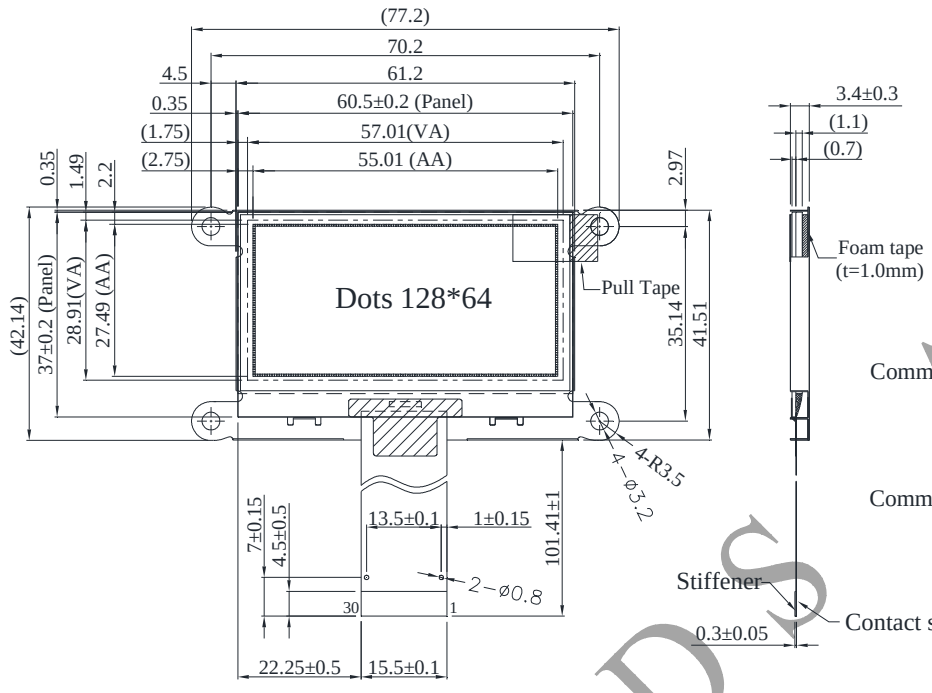
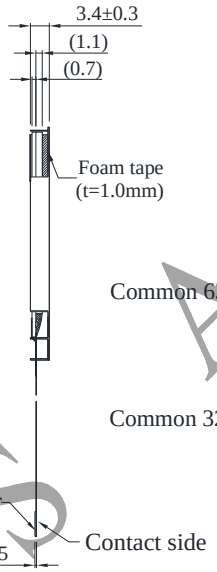
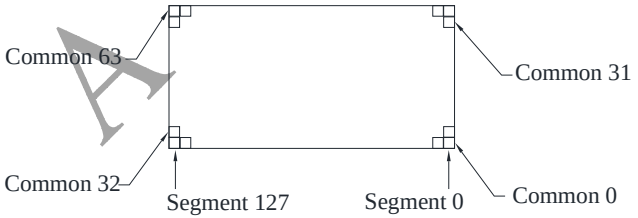
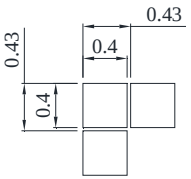
Contour Drawing & Block Diagram



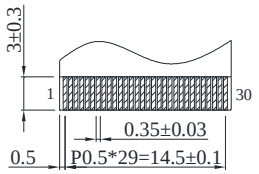




PIN	SYMBOL
1	NC(VSS)
2	VCC
3	VCOMH
4	IREF
5	D7
6	D6
7	D5
8	D4
9	D3
10	D2
11	D1
12	D0
13	E/RD#
14	R/W#
15	D/C#
16	RES#
17	CS#
18	NC
19	BS2
20	BS1
21	VDD
22	NC
23	NC
24	NC
25	NC
26	NC
27	NC
28	NC
29	VSS
30	NC(VSS)



Detail DOTS
Scale 20/1



FPC Contact side
Scale 2/1

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

I S A D S A C · L D

Interface Pin Function

Pin No.	Symbol	Function
1	NC(Vss)	No connection (ground.)
2	VCC	Power supply for panel driving voltage. This is also the most positive power voltage supply pin.
3	VCOMH	COM signal deselected voltage level. A capacitor should be connected between this pin and VSS.
4	IREF	This pin is the segment output current reference pin. IREF is supplied externally. A resistor should be connected between this pin and VSS to maintain the current around 10uA. Please refer to Figure 8-15 for the details of resistor value
5~12	D7~D0	These pins are bi-directional data bus connecting to the MCU data bus. Unused pins are recommended to tie LOW. When serial interface mode is selected, D0 will be the serial clock input: SCLK; D1 will be the serial data input: SDIN and D2 should be kept NC. 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.
13	E/RD#	This pin is MCU interface input. When 6800 interface mode is selected, 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 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. When serial or I2C interface is selected, this pin must be connected to VSS.
14	R/W#	This pin is read / write control input pin connecting to the MCU interface. 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. 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 or I2C interface is selected, this pin must be connected to VSS.

I S A R I P A C L D

<table>
<tr><td>15</td><td>D/C#</td><td>This pin is Data/Command control pin connecting to the MCU.
When the pin is pulled HIGH, the data at D[7:0] will be interpreted as data.
When the pin is pulled LOW, the data at D[7:0] will be transferred to a command
register.
In I2C mode, this pin acts as SA0 for slave address selection.
When 3-wire serial interface is selected, this pin must be connected to VSS.
For detail relationship to MCU interface signals, refer to Timing Characteristics</td></tr>
<tr><td>16</td><td>RES#</td><td>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.</td></tr>
<tr><td>17</td><td>CS#</td><td>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).</td></tr>
<tr><td>18</td><td>NC</td><td>No connection</td></tr>
<tr><td>19</td><td>BS2</td><td rowspan="2">MCU bus interface selection pins. Select appropriate logic setting as described in the
following table.
<table><tr><td></td><td>BS1</td><td>BS2</td></tr><tr><td>I2C</td><td>1</td><td>0</td></tr><tr><td>4-wire Serial</td><td>0</td><td>0</td></tr><tr><td>8-bit 68XX Parallel</td><td>0</td><td>1</td></tr><tr><td>8-bit 80XX Parallel</td><td>1</td><td>1</td></tr></table>Note
(1) 0 is connected to VSS
(2) 1 is connected to VDD</td></tr>
<tr><td>20</td><td>BS1</td></tr>
<tr><td>21</td><td>Vdd</td><td>Power supply pin for core logic operation</td></tr>
<tr><td>22~28</td><td>NC</td><td>No connection</td></tr>
<tr><td>29</td><td>Vss</td><td>Ground pin. It must be connected to external ground.</td></tr>
<tr><td>30</td><td>NC(Vss)</td><td>No connection (ground.)</td></tr>
</table>

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Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD	-0.3	4	V
Supply Voltage for Display	VCC	0	15	V
Operating Temperature	TOP	-40	+80	°C
Storage Temperature	TSTG	-40	+85	°C

Electrical Characteristics

1 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	—	12.5	13.0	13.5	V
High Level Input	VIH	—	0.8×VDD	—	VDD	V
Low Level Input	VIL	—	0	—	0.2×VDD	V
High Level Output	VOH	—	0.9×VDD	—	VDD	V
Low Level Output	VOL	—	0	—	0.1×VDD	V
50% Check Board operating Current		VCC =13V	-	29	43.5	mA

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