WINSTAR Display

OLED SPECIFICATION

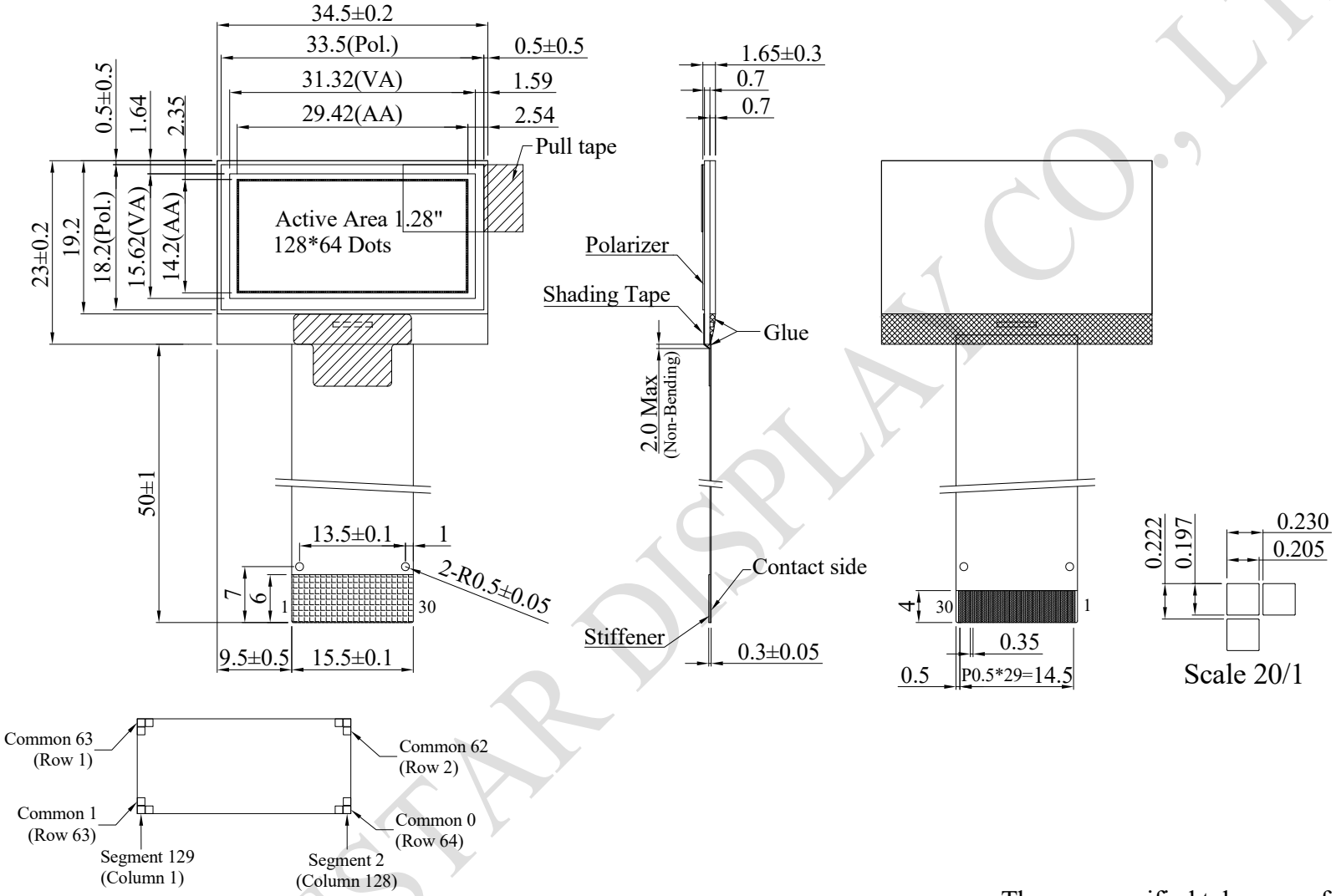
Model No:

WEO012864LLAP3N00F00
(ZIF FPC)

General Specification

Item	Dimension	Unit
Dot Matrix	128 x 64	—
Module dimension	34.50 × 23.00 × 1.65	mm
Active Area	29.42 × 14.20	mm
Pixel Size	0.205 × 0.197	mm
Pixel Pitch	0.230 × 0.222	mm
Display Mode	Passive Matrix	
Display Color	Monochrome	
Drive Duty	1/64 Duty	
Controller IC	SH1106G	
Interface	6800/8080/3-SPI /4-SPI / I2C	
Size	1.28 inch	

Contour Drawing & Block Diagram



PIN No.	SYMBOL
1	NC(GND)
2	C1N
3	C1P
4	C2P
5	C2N
6	VDD2
7	NC
8	VSS
9	VDD1
10	IM0
11	IM1
12	IM2
13	CSB
14	RESB
15	A0
16	WRB
17	RDB
18	D0
19	D1
20	D2
21	D3
22	D4
23	D5
24	D6
25	D7
26	IREF
27	VCOMH
28	VPP
29	VSL
30	NC(GND)

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

Interface Pin Function

<table>
<tr><th>No.</th><th>Symbol</th><th>Function</th></tr>
<tr><td>1</td><td>NC(GND)</td><td>No connection</td></tr>
<tr><td>2</td><td>C1N</td><td rowspan="2">Connect to charge pump capacitor.
These pins are not used and should be disconnected when Vpp is supplied externally.</td></tr>
<tr><td>3</td><td>C1P</td></tr>
<tr><td>4</td><td>C2P</td><td rowspan="2">Connect to charge pump capacitor.
These pins are not used and should be disconnected when Vpp is supplied externally.</td></tr>
<tr><td>5</td><td>C2N</td></tr>
<tr><td>6</td><td>VDD2</td><td>3.0 – 4.7V power supply pad for Power supply for charge pump circuit.
This pin should be disconnected when VPP is supplied externally</td></tr>
<tr><td>7</td><td>NC</td><td>No connection</td></tr>
<tr><td>8</td><td>VSS</td><td>Ground.</td></tr>
<tr><td>9</td><td>VDD1</td><td>Power supply input: 1.65 - 3.5V</td></tr>
<tr><td>10</td><td>IM0</td><td rowspan="3">These are the MPU interface mode select pads.
<table>
<tr><th></th><th>8080</th><th>I²C</th><th>6800</th><th>4-wire SPI</th><th>3-wire SPI</th></tr>
<tr><td>IM0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td>IM1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>IM2</td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr>
</table></td></tr>
<tr><td>11</td><td>IM1</td></tr>
<tr><td>12</td><td>IM2</td></tr>
<tr><td>13</td><td>CSB</td><td>This pad is the chip select input. When CSB = “L”, then the chip select becomes active, and data/command I/O is enabled.</td></tr>
<tr><td>14</td><td>RESB</td><td>This is a reset signal input pad. When RES is set to “L”, the settings are initialized. The reset operation is performed by the RES signal level.</td></tr>
<tr><td>15</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>16</td><td>WRB</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 WR signal. The signals on the data bus are latched at the rising edge of the WR signal.
When connected to a 6800 Series MPU: This is the read/write control signal input terminal.
When R/W = “H”: Read.
When R/W = “L”: Write.</td></tr>
</table>

17	RDB	This is a MPU interface input pad. When connected to an 8080 series MPU, it is active LOW. This pad is connected to the 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 RD = “H”: Enable. When RD = “L”: Disable.
18	D0	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.
19	D1	
20	D2	
21	D3	
22	D4	
23	D5	
24	D6	
25	D7	
26	IREF	This is a segment current reference pad. A resistor should be connected between this pad and VSS. Set the current at 18.75uA.
27	VCOMH	This is a pad for the voltage output high level for common signals. A capacitor should be connected between this pad and VSS.
28	VPP	OLED panel power supply. Generated by internal charge pump. Connect to capacitor. It could be supplied externally.
29	VSL	This is a segment voltage reference pad. This pad should be connected to VSS externally.
30	NC(GND)	No connection

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD1	-0.3	3.6	V
Power supply for charge pump circuit	VDD2	-0.3	4.8	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	—	2.8	3.0	3.3	V
Supply Voltage for Display	VPP	—	6.75	7.25	7.75	V
High Level Input	VIH	—	0.8xVDD1	—	VDD1	V
Low Level Input	VIL	—	VSS	—	0.2xVDD1	V
High Level Output	VOH	—	0.8xVDD1	—	VDD1	V
Low Level Output	VOL	—	VSS	—	0.2xVDD1	V
Display 50% Pixel on	IPP	VPP =7.25V	—	6.0	9.0	mA