WINSTAR Display

OLED SPECIFICATION

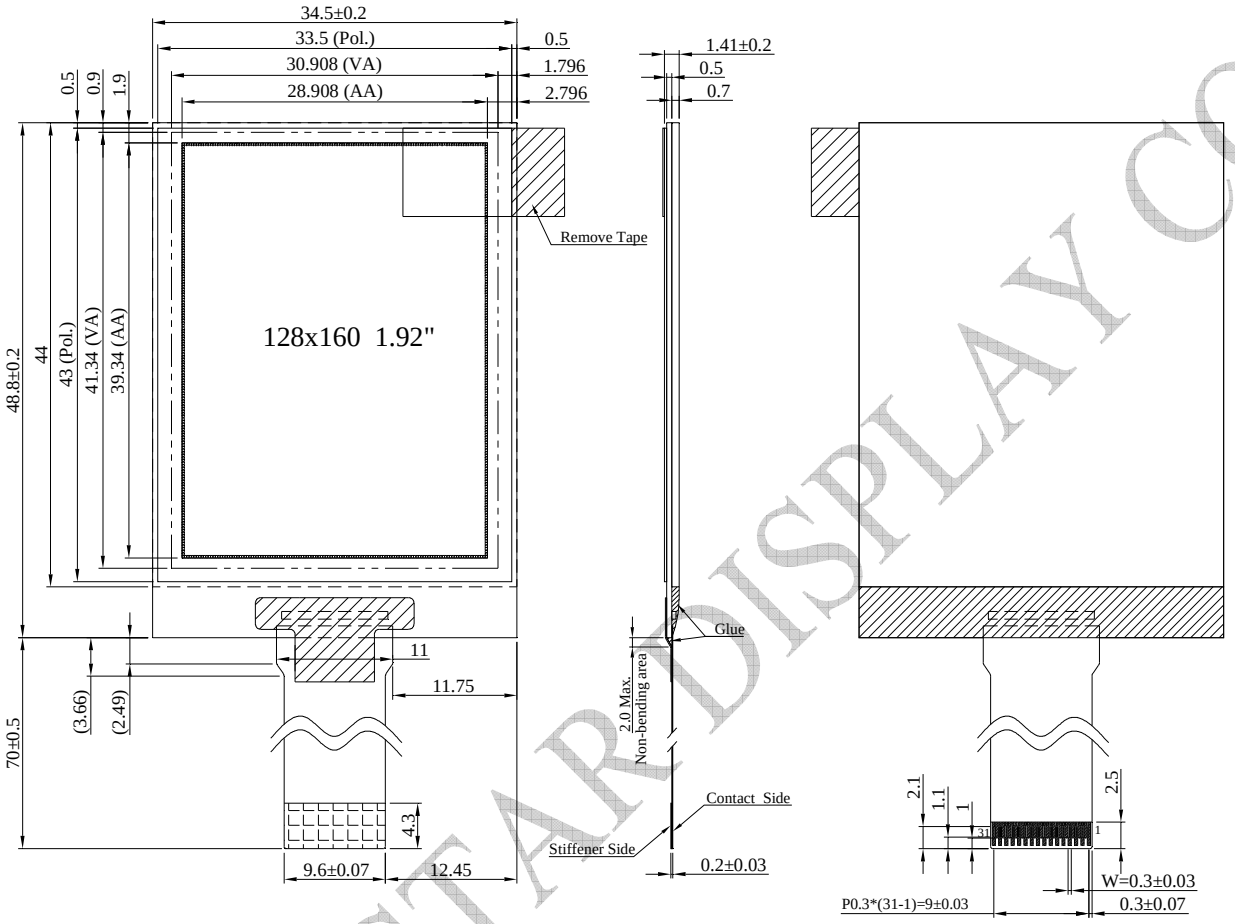
Model No:

WEO160128A

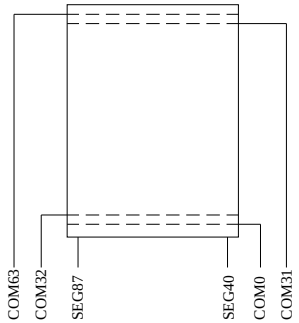
General Specification

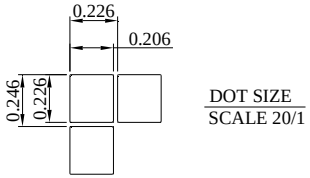
Item	Dimension	Unit
Dot Matrix	128 × 160 Dots	—
Module dimension	34.5 × 48.8 × 1.41	mm
Active Area	28.908 × 39.34	mm
Pixel Size	0.206 × 0.226	mm
Pixel Pitch	0.226 × 0.246	mm
Display Mode	Passive Matrix	
Display Color	Monochrome	
Drive Duty	1/128 Duty	
IC	SH1108	
Interface	6800, 8080,I2C, SPI	
Size	1.92 inch	

Contour Drawing & Block Diagram



PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	NC	16	IM2
2	VPP	17	CS
3	VSEGM	18	RES
4	VCOMH	19	A0
5	VSL	20	WR
6	NC	21	RD
7	IREF	22	D0
8	VPP	23	D1
9	NC	24	D2
10	VSS	25	D3
11	VCL	26	D4
12	VDD	27	D5
13	IM0	28	D6
14	IM1	29	D7
15	VDD	30	NC
		31	VPP





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>NC</td><td>NC</td></tr>
<tr><td>2</td><td>VPP</td><td>This is the most positive voltage supply pad of the chip.
It should be supplied externally.</td></tr>
<tr><td>3</td><td>VSEGM</td><td>This is a pad for the voltage output level for segment pre-charge.
A capacitor should be connected between this pad and VSS.</td></tr>
<tr><td>4</td><td>VCOMH</td><td>This is a pad for the voltage output high level for common signals.
A capacitor should be connected between this pad and VSS.</td></tr>
<tr><td>5</td><td>VSL</td><td>This is a segment voltage reference pad.
A capacitor should be connected between this pad and VSS.</td></tr>
<tr><td>6</td><td>NC</td><td>NC</td></tr>
<tr><td>7</td><td>IREF</td><td>This is a segment current reference pad.
A resistor should be connected between this pad and VSS. Set the current at 15.625uA.</td></tr>
<tr><td>8</td><td>VPP</td><td>This is the most positive voltage supply pad of the chip.
It should be supplied externally.</td></tr>
<tr><td>9</td><td>NC</td><td>NC</td></tr>
<tr><td>10</td><td>VSS</td><td>Ground for analog, logic&buffer respectively.</td></tr>
<tr><td>11</td><td>VCL</td><td>This is a common voltage reference pad.
This pad should be connected to VSS externally.</td></tr>
<tr><td>12</td><td>VDD</td><td>1.65 - 3.5V power supply input pad for logic.</td></tr>
<tr><td>13</td><td>IM0</td><td rowspan="4">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>14</td><td>IM1</td></tr>
<tr><td rowspan="2">16</td><td rowspan="2">IM2</td></tr>
<tr></tr>
<tr><td>15</td><td>VDD</td><td>1.65 - 3.5Vpower supply input pad</td></tr>
<tr><td>17</td><td>CS</td><td>This pad is the chip select input. When /CS = “L”, then the chip select becomes active, and data/command I/O is enabled.</td></tr>
<tr><td>18</td><td>RES</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>19</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>20</td><td>WR</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</td></tr>
</table>

		connected to a 6800 Series MPU: This is the read/write control signal input terminal.When /WR = “H”: Read.When /WR = “L”: Write.
21	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 /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.
22	D0	Data bus.
23	D1	Data bus.
24	D2	Data bus.
25	D3	Data bus.
26	D4	Data bus.
27	D5	Data bus.
28	D6	Data bus.
29	D7	Data bus.
30	NC	NC
31	VPP	This is the most positive voltage supply pad of the chip. It should be supplied externally.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD	-0.3	3.6	V
Supply Voltage for Display	VPP	-0.3	17.0	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	—	1.65	3.0	3.5	V
Supply Voltage for Display	VPP	—	11.5	12.0	12.5	V
Input High Volt.	VIH	—	0.8xVDD	—	VDD	V
Input Low Volt.	VIL	—	VSS	—	0.2xVDD	V
Output High Volt.	VOH	IOH=-0.5mA	0.8xVDD	—	VDD	V
Output Low Volt.	VOL	IOL=0.5mA	VSS	—	0.2xVDD	V
Operating Current for VPP (VCC Supplied Externally)	Ipp	VPP=12.0V	—	23.0	34.5	mA