WINSTAR Display

# OLED SPECIFICATION

Model No:

***WEA2002L#AA3N00000-FC***

Represented by:

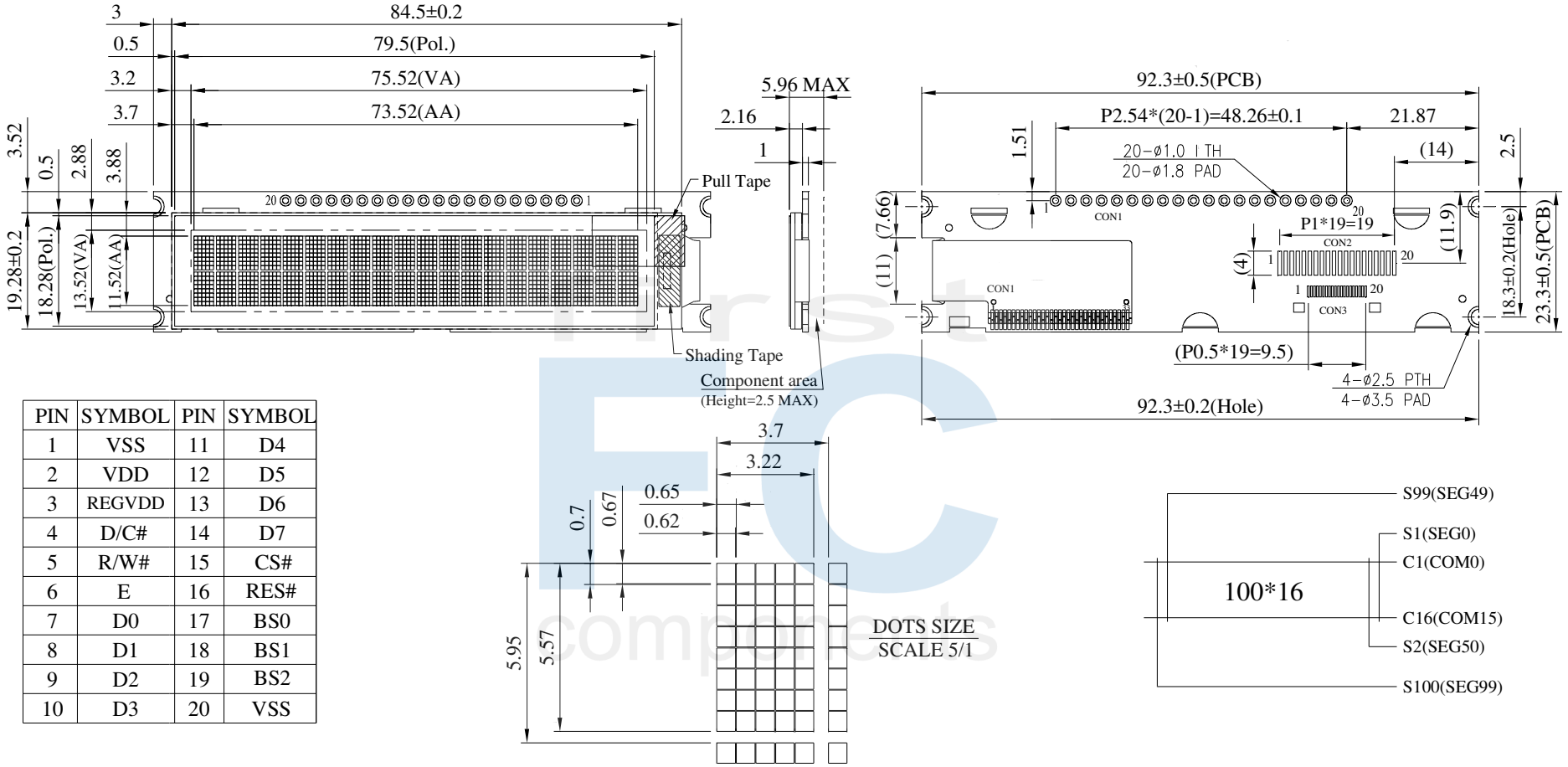
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# General Specification

| Item | Dimension | Unit |
|---|---|---|
| Number of Characters | 20 characters x 2 Lines | — |
| Module dimension | 92.3 x 23.3 x 5.96 Max. | mm |
| Active area | 73.52 x 11.52 | mm |
| Dot size | 0.62 x 0.67 | mm |
| Dot pitch | 0.65 x 0.70 | mm |
| Character size | 3.22 x 5.57 | mm |
| Character pitch | 3.70 x 5.95 | mm |
| Display type | OLED, White | |
| Duty | 1/16 | |
| IC | SSD1311 | |
| Interface | 6800,8080,SPI,I2C | |
| Size | 2.93 inch | |

first FC components

# Contour Drawing & Block Diagram




| PIN | SYMBOL | PIN | SYMBOL |
|---|---|---|---|
| 1 | VSS | 11 | D4 |
| 2 | VDD | 12 | D5 |
| 3 | REGVDD | 13 | D6 |
| 4 | D/C# | 14 | D7 |
| 5 | R/W# | 15 | CS# |
| 6 | E | 16 | RES# |
| 7 | D0 | 17 | BS0 |
| 8 | D1 | 18 | BS1 |
| 9 | D2 | 19 | BS2 |
| 10 | D3 | 20 | VSS |

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

# Interface Pin Function

| Pin No. | Symbol | Pin Type | Description |
|---|---|---|---|
| 1 | VSS | P | Ground pin. It must be connected to external ground. |
| 2 | VDD | P | Power supply for core logic operation.<br>A capacitor should be connected between VDD and VSS under all circumstances. |
| 3 | REGVDD | I | Internal VDD regulator selection pin<br>It must be connected to external ground. |
| 4 | D/C# | I | This pin is Data/Command control pin connecting to the MCU.<br>When the pin is pulled HIGH, the data at D[7:0] will be interpreted as data.<br>When the pin is pulled LOW, the data at D[7:0] will be transferred to a command register.<br>In I2C mode, this pin acts as SA0 for slave address selection.<br>When serial interface is selected, this pin must be connected to VSS. |
| 5 | R/W# | I | This pin is read / write control input pin connecting to the MCU interface.<br>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.<br>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.<br>When serial or I2C interface is selected, this pin must be connected to VSS. |
| 6 | E | I | This pin is MCU interface input.<br>When 6800 interface mode is selected, this pin will be used as the Enable (E) signal.<br>Read/write operation is initiated when this pin is pulled HIGH and the chip is selected.<br>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.<br>When serial or I2C interface is selected, this pin must be connected to VSS. |

<table>
<tr><td>7</td><td>D0</td><td rowspan="8">I/O</td><td rowspan="8">These pins are bi-directional data bus connecting to the MCU data bus.<br>Unused pins are recommended to tie LOW.<br>When serial interface mode is selected, D0 will be the serial clock input: SCLK; D1 will be the serial data input: SID and D2 will be the serial data output: SOD.<br>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.</td></tr>
<tr><td>8</td><td>D1</td></tr>
<tr><td>9</td><td>D2</td></tr>
<tr><td>10</td><td>D3</td></tr>
<tr><td>11</td><td>D4</td></tr>
<tr><td>12</td><td>D5</td></tr>
<tr><td>13</td><td>D6</td></tr>
<tr><td>14</td><td>D7</td></tr>
<tr><td>15</td><td>CS#</td><td>I</td><td>This pin is the chip select input connecting to the MCU.<br>The chip is enabled for MCU communication only when CS# is pulled LOW (active LOW).<br>In I2C mode, this pin must be connected to VSS.</td></tr>
<tr><td>16</td><td>RES#</td><td>I</td><td>This pin is reset signal input.<br>When the pin is pulled LOW, initialization of the chip is executed.<br>Keep this pin pull HIGH during normal operation.</td></tr>
<tr><td>17</td><td>BS0</td><td rowspan="3">I</td><td rowspan="3">MCU bus interface selection pins. Select appropriate logic setting as described in the following table. BS2, BS1 and BS0 are pin select.<br>Bus Interface selection<br><table><tr><td>BS[2:0]</td><td>Interface</td></tr><tr><td>000</td><td>Serial Interface</td></tr><tr><td>001</td><td>Invalid</td></tr><tr><td>010</td><td>I²C</td></tr><tr><td>011</td><td>Invalid</td></tr><tr><td>100</td><td>8-bit 6800 parallel</td></tr><tr><td>101</td><td>4-bit 6800 parallel</td></tr><tr><td>110</td><td>8-bit 8080 parallel</td></tr><tr><td>111</td><td>4-bit 8080 parallel</td></tr></table><br>Note<br>(1) 0 is connected to VSS<br>(2) 1 is connected to VDD</td></tr>
<tr><td>18</td><td>BS1</td></tr>
<tr><td>19</td><td>BS2</td></tr>
<tr><td>20</td><td>VSS</td><td>P</td><td>Ground pin. It must be connected to external ground.</td></tr>
</table>

# Absolute Maximum Ratings

| Item | Symbol | Min | Max | Unit |
|---|---|---|---|---|
| Supply Voltage For Logic | VDD-VSS | -0.3 | 3.6 | V |
| Operating Temperature | TOP | -40 | +80 | °C |
| Storage Temperature | TST | -40 | +85 | °C |

# Electrical Characteristics

## DC Electrical Characteristics

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Supply Voltage For Logic | VDD-VSS | — | 3.1 | 3.3 | 3.5 | V |
| Input High Volt. | VIH | — | 0.8xVDD | — | — | V |
| Input Low Volt. | VIL | — | — | — | 0.2xVDD | V |
| Output High Volt. | VOH | IOH=-0.5mA | 0.9xVDD | — | — | V |
| Output Low Volt. | VOL | IOL=0.5mA | — | — | 0.1xVDD | V |
| 50% Check Board operating Current | IDD | VDD=3.3V | — | 50 | 75 | mA |