

**WINSTAR Display**

# **OLED SPECIFICATION**

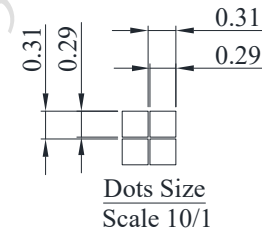
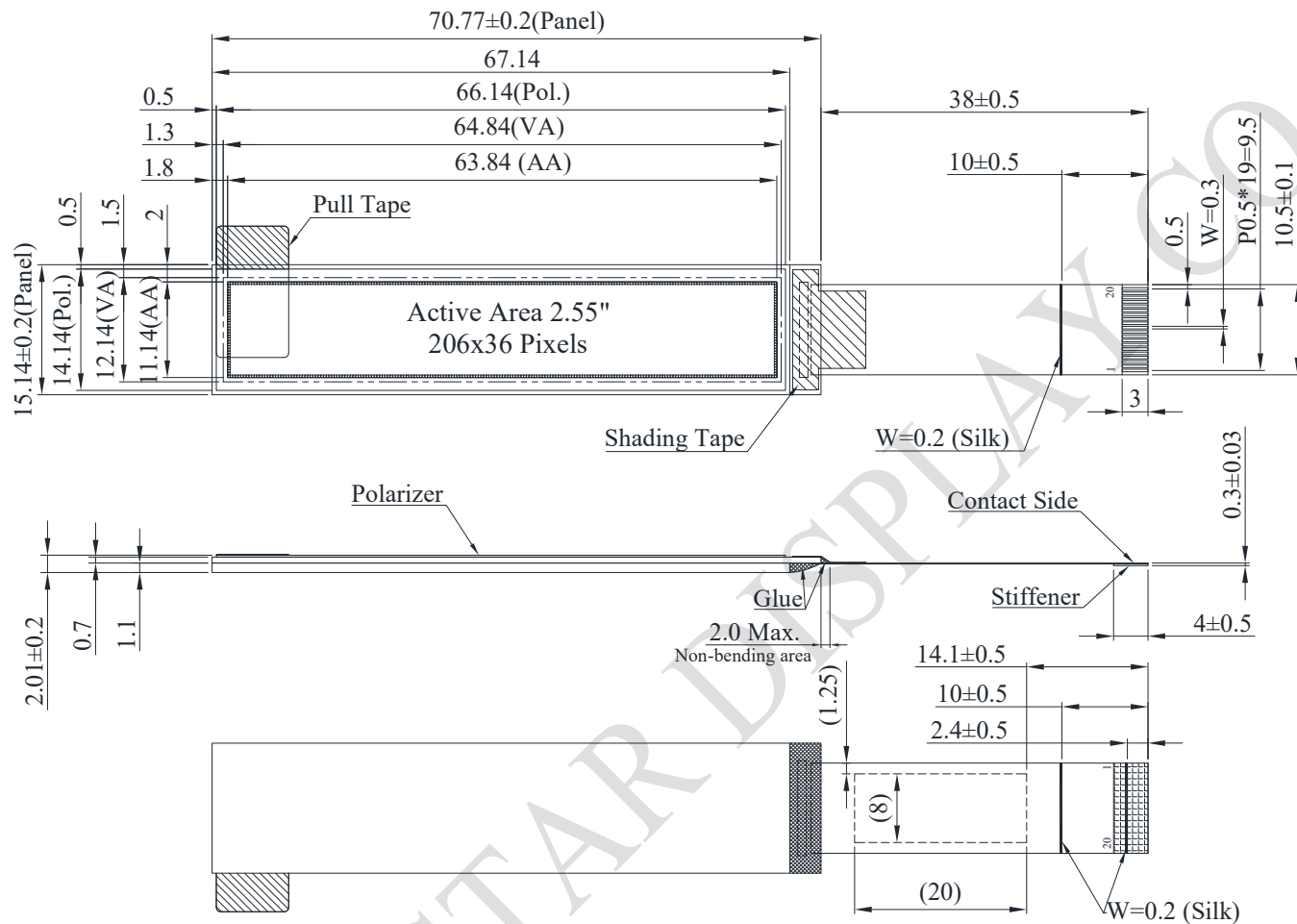
Model No:

**WEO020636A**

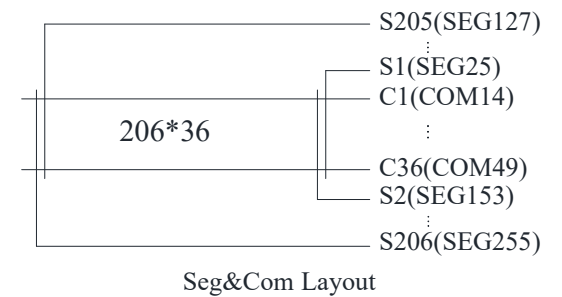
## General Specification

| Item             | Dimension                 | Unit |
|------------------|---------------------------|------|
| Dot Matrix       | 206 x 36 Dots             | —    |
| Module dimension | 70.77 x 15.14 x 2.01      | mm   |
| Active Area      | 63.84 x 11.14             | mm   |
| Pixel Size       | 0.29 x 0.29               | mm   |
| Pixel Pitch      | 0.31 x 0.31               | mm   |
| Display Mode     | Passive Matrix            |      |
| Display Color    | Monochrome                |      |
| Drive Duty       | 1/36 Duty                 |      |
| Gray Scale       | 4 Bits                    |      |
| IC               | SSD1362                   |      |
| Interface        | 3-Wire SPI、4-Wire SPI、I2C |      |
| Size             | 2.55 inch                 |      |

# Contour Drawing & Block Diagram



| PIN | SYMBOL |
|-----|--------|
| 1   | VCC    |
| 2   | VCOMH  |
| 3   | VP     |
| 4   | VSL    |
| 5   | VLSS   |
| 6   | VDD    |
| 7   | VCI    |
| 8   | VDDIO  |
| 9   | CS#    |
| 10  | RES#   |
| 11  | D/C#   |
| 12  | D0     |
| 13  | D1     |
| 14  | D2     |
| 15  | BS0    |
| 16  | BS1    |
| 17  | VSS    |
| 18  | IREF   |
| 19  | VCC    |
| 20  | VCC    |



The non-specified tolerance of dimension is  $\pm 0.3$  mm.

## Interface Pin Function

| No. | Symbol | Function                                                                                                                                                                                                                                                                                                                                                                             |
|-----|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | VCC    | Power supply for panel driving voltage. This is also the most positive power voltage supply pin. It is supplied by external high voltage source.                                                                                                                                                                                                                                     |
| 2   | VCOMH  | COM signal deselected voltage level.<br>A capacitor should be connected between this pin and VSS.<br>No external power supply is allowed to connect to this pin.                                                                                                                                                                                                                     |
| 3   | VP     | This pin is the segment pre-charge voltage reference pin.<br>A capacitor should be connected between this pin and VSS.<br>No external power supply is allowed to connect to this pin.                                                                                                                                                                                                |
| 4   | VSL    | This is a reserved pin. It should be connected to VLSS externally.                                                                                                                                                                                                                                                                                                                   |
| 5   | VLSS   | Analog system ground pin. It must be connected to external ground.                                                                                                                                                                                                                                                                                                                   |
| 6   | VDD    | VDD can be supplied externally (within the range of 1.65V to 2.6V) or regulated internally from VCI when VCI is >2.6V. A capacitor should be connected between VDD and VSS under all circumstances.                                                                                                                                                                                  |
| 7   | VCI    | Low voltage power supply.<br>VCI must always be equal to or higher than VDD and VDDIO.                                                                                                                                                                                                                                                                                               |
| 8   | VDDIO  | Power supply for interface logic level. It should match with the MCU interface voltage level and must be connected to external source.                                                                                                                                                                                                                                               |
| 9   | CS#    | 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). In I2C mode, this pin must be connected to VSS.                                                                                                                                                                                      |
| 10  | RES#   | 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.                                                                                                                                                                                                                           |
| 11  | D/C#   | This pin is Data/Command control pin connecting to the MCU.<br>When the pin is pulled HIGH, the data will be interpreted as data.<br>When the pin is pulled LOW, the data will be transferred to a command register.<br>In I2C mode, this pin acts as SA0 for slave address selection.<br>When 3-wire serial interface is selected, this pin must be connected to VSS.               |
| 12  | D0     | These pins are bi-directional data bus connecting to the MCU data bus.<br>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: SID. 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  | D1     |                                                                                                                                                                                                                                                                                                                                                                                      |
| 14  | D2     |                                                                                                                                                                                                                                                                                                                                                                                      |

|       |      |                                                                                                                                                                                       |            |
|-------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 15    | BS0  | MCU bus interface selection pins.                                                                                                                                                     |            |
|       |      | BS[1:0]                                                                                                                                                                               | Interface  |
|       |      | 00                                                                                                                                                                                    | 4-Wire SPI |
| 16    | BS1  | 01                                                                                                                                                                                    | 3-Wire SPI |
|       |      | 10                                                                                                                                                                                    | I2C        |
| 17    | VSS  | Ground pin.                                                                                                                                                                           |            |
| 18    | IREF | When external IREF is used, a resistor should be connected between this pin and VSS to maintain current of around 18.75uA.<br>When internal IREF is used, this pin should be kept NC. |            |
| 19~20 | VCC  | Power supply for panel driving voltage. This is also the most positive power voltage supply pin. It is supplied by external high voltage source.                                      |            |

#### Note

- (1) Low is connected to VSS
- (2) High is connected to VCI

## Absolute Maximum Ratings

| Parameter             | Symbol | Min  | Max  | Unit |
|-----------------------|--------|------|------|------|
| Supply Voltage        | VDD    | -0.5 | 2.75 | V    |
| Supply Voltage        | VCI    | -0.3 | 5.5  | V    |
| Supply Voltage        | VDDIO  | -0.5 | 5.5  | V    |
| Supply Voltage        | VCC    | 7    | 21   | V    |
| Operating Temperature | TOP    | -40  | +80  | °C   |
| Storage Temperature   | TSTG   | -40  | +85  | °C   |

## 6. Electrical Characteristics

### 1 DC Electrical Characteristics

| Item                       | Symbol | Condition | Min                | Typ  | Max                | Unit |
|----------------------------|--------|-----------|--------------------|------|--------------------|------|
| Supply Voltage for Display | VCC    | —         | 10.0               | 12.0 | 12.5               | V    |
| Low voltage power supply   | VCI    | —         | 1.65               | —    | 3.5                | V    |
| Power supply for I/O pins  | VDDIO  | —         | 1.65               | —    | VCI                | V    |
| Logic Supply Voltage       | VDD    | —         | 1.65               | —    | 2.6                | V    |
| High Level Input           | VIH    | —         | $0.8 \times VDDIO$ | —    | —                  | V    |
| Low Level Input            | VIL    | —         | —                  | —    | $0.2 \times VDDIO$ | V    |
| High Level Output          | VOH    | —         | $0.9 \times VDDIO$ | —    | —                  | V    |
| Low Level Output           | VOL    | —         | —                  | —    | $0.1 \times VDDIO$ | V    |
| Display 50% Pixel on       | ICC    | VCC = 12V | —                  | 25   | 35                 | mA   |