

# WINSTAR Display

## OLED SPECIFICATION

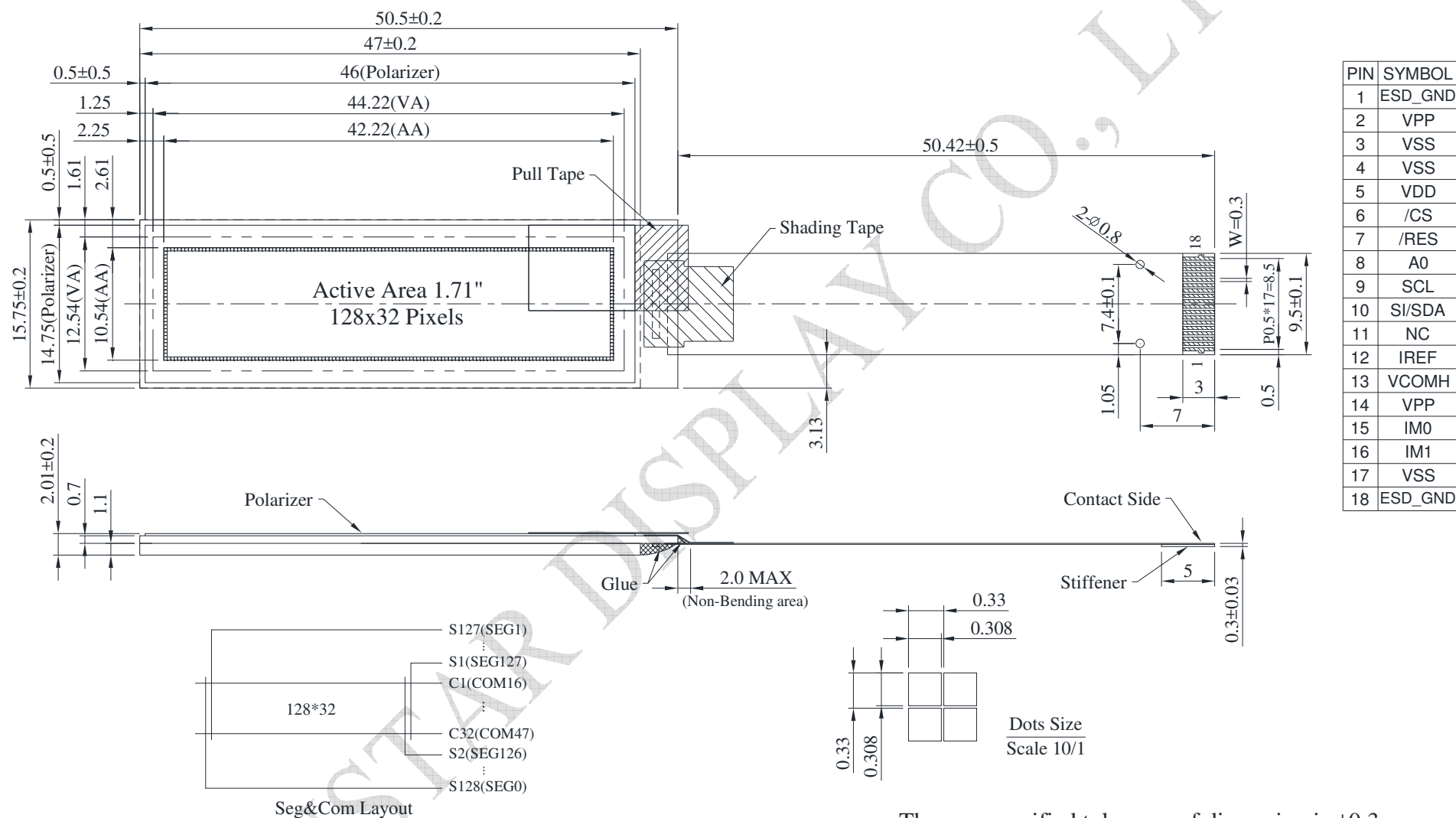
Model No:

**WEO012832P**

### General Specification

| Item             | Dimension            | Unit |
|------------------|----------------------|------|
| Dot Matrix       | 128 x 32 Dots        | —    |
| Module dimension | 50.50 x 15.75 x 2.01 | mm   |
| Active Area      | 42.22 x 10.54        | mm   |
| Pixel Size       | 0.308 x 0.308        | mm   |
| Pixel Pitch      | 0.33 x 0.33          | mm   |
| Display Mode     | Passive Matrix       |      |
| Display Color    | Monochrome           |      |
| Drive Duty       | 1/32 Duty            |      |
| IC               | CH1115               |      |
| Interface        | SPI,I2C              |      |
| Size             | 1.71 inch            |      |

# Contour Drawing & Block Diagram



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

## Interface Pin Function

| No. | Symbol           | Function                                                                                                                                                                                           |
|-----|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | ESD_GND          | ESD Ground pin                                                                                                                                                                                     |
| 2   | VPP              | OLED panel power supply.                                                                                                                                                                           |
| 3   | VSS              | This is a ground pin.                                                                                                                                                                              |
| 4   | VSS              | This is a ground pin.                                                                                                                                                                              |
| 5   | VDD              | Power Supply for Logic                                                                                                                                                                             |
| 6   | $\overline{CS}$  | This pad is the chip select input. When $\overline{CS} = "L"$ , then the chip select becomes active, and data/command I/O is enabled.                                                              |
| 7   | $\overline{RES}$ | This is a reset signal input pad. When $\overline{RES}$ is set to "L", the settings are initialized. The reset operation is performed by the $\overline{RES}$ signal level.                        |
| 8   | A0               | This is the Data/Command control pad that determines whether the data bits are data or a command.<br>In I2C interface, this pad serves as SA0 to distinguish the different address of OLED driver. |
| 9   | SCL              | The serial clock input pad                                                                                                                                                                         |
| 10  | SI/SDA           | The serial data input pad                                                                                                                                                                          |
| 11  | NC               | Dummy Pin                                                                                                                                                                                          |
| 12  | IREF             | This is a segment current reference pad. A resistor should be connected between this pad and VSS. Set the current at $18.75 \mu A$ .                                                               |
| 13  | VCOMH            | The pin is for COM signal deselected voltage level.<br>A capacitor should be connected between this pin and VSS.                                                                                   |
| 14  | VPP              | OLED panel power supply.                                                                                                                                                                           |

|    |         |                                               |      |      |     |
|----|---------|-----------------------------------------------|------|------|-----|
| 15 | IM0     | These are the MPU interface mode select pads. |      |      |     |
|    |         |                                               | 3SPI | 4SPI | I2C |
| 16 | IM1     | IM0                                           | 1    | 0    | 0   |
|    |         | IM1                                           | 0    | 0    | 1   |
| 17 | VSS     | This is a ground pin.                         |      |      |     |
| 18 | ESD_GND | ESD Ground pin                                |      |      |     |

## 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 | 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   | VDD    | —         | 1.65    | 3.0  | 3.3     | V    |
| Supply Voltage for Display | VPP    | —         | 6.4     | 12.0 | 12.5    | V    |
| High Level Input           | VIH    | —         | 0.8×VDD | —    | VDD     | V    |
| Low Level Input            | VIL    | —         | VSS     | —    | 0.2×VDD | V    |
| High Level Output          | VOH    | —         | 0.8×VDD | —    | VDD     | V    |
| Low Level Output           | VOL    | —         | VSS     | —    | 0.2×VDD | V    |
| Display 50% Pixel on       | IPP    | VPP=12V   | —       | 5    | 10      | mA   |