

# TFT DISPLAY SPECIFICATION



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**



## SPECIFICATION

**MODULE NO.: WF35XTYBCDBT0#**

### General Specifications

| Item             | Dimension                          | Unit |
|------------------|------------------------------------|------|
| Size             | 3.5                                | inch |
| Dot Matrix       | 320 x RGBx240(TFT)                 | dots |
| Module dimension | 93.5 x 66.44 x 9.0                 | mm   |
| Active area      | 70.08 x 52.56                      | mm   |
| Pixel pitch      | 0.219 x 0.219                      | mm   |
| LCD type         | TFT, normally black, Transmissive  |      |
| Viewing Angle    | 80/80/80/80                        |      |
| Aspect Ratio     | 4:3                                |      |
| Backlight Type   | LED, Normally White                |      |
| Controller IC    | SSD1963                            |      |
| Interface        | Digital 8080 family MPU 8bit/16bit |      |
| Touch Panel      | Resistive Touch Panel              |      |
| Surface          | Anti-glare                         |      |

\*Color tone slight changed by temperature and driving voltage.

# Absolute Maximum Ratings

| Item                  | Symbol | Min | Typ | Max | Unit |
|-----------------------|--------|-----|-----|-----|------|
| Operating Temperature | TOP    | -20 | —   | +70 | °C   |
| Storage Temperature   | TST    | -30 | —   | +80 | °C   |

# Electrical Characteristics

## 1. Operating conditions: (CON2.Pin1=GND, Pin2=VDD)

| Item                   | Symbol | Min | Typ | Max | Unit |
|------------------------|--------|-----|-----|-----|------|
| Supply Voltage For LCM | VDD    | 3.0 | 3.1 | 3.3 | V    |
| Supply Current For LCM | IDD    | -   | 50  | 75  | mA   |

## 2. Backlight driving conditions (CON2.Pin33,34=VLED-, Pin35,36=VLED+)

| Parameter                        | Symbol    | Min. | Typ.   | Max.  | Unit |
|----------------------------------|-----------|------|--------|-------|------|
| Operation Current For LED Driver | VLED=3.3V | -    | 150    | 225   | mA   |
| Power Consumption                | VLED=3.3V | -    | 495    | 742.5 | mW   |
| Supply Voltage For LED Driver    | VLED+     | 3.3  | -      | 5     | V    |
| LED Life Time                    |           | -    | 50,000 | -     | Hr   |

# Interface

## 1. LCM PIN Definition (CON2)

| Pin   | Symbol | Function                                              |
|-------|--------|-------------------------------------------------------|
| 1     | GND    | System ground pin of the IC.Connect to system ground. |
| 2     | VDD    | Power Supply : +3.3V                                  |
| 3     | BLE    | Backlight control signal , H: On \ L: Off             |
| 4     | D/C    | Data/Command select                                   |
| 5     | WR     | Write strobe signal                                   |
| 6     | RD     | Read strobe signal                                    |
| 7     | DB0    | Data bus                                              |
| 8     | DB1    | Data bus                                              |
| 9     | DB2    | Data bus                                              |
| 10    | DB3    | Data bus                                              |
| 11    | DB4    | Data bus                                              |
| 12    | DB5    | Data bus                                              |
| 13    | DB6    | Data bus                                              |
| 14    | DB7    | Data bus                                              |
| 15    | DB8    | Data bus (When select 8bits Mode, this pin is NC)     |
| 16    | DB9    | Data bus (When select 8bits Mode, this pin is NC)     |
| 17    | DB10   | Data bus (When select 8bits Mode, this pin is NC)     |
| 18    | DB11   | Data bus (When select 8bits Mode, this pin is NC)     |
| 19    | DB12   | Data bus (When select 8bits Mode, this pin is NC)     |
| 20    | DB13   | Data bus (When select 8bits Mode, this pin is NC)     |
| 21    | DB14   | Data bus (When select 8bits Mode, this pin is NC)     |
| 22    | DB15   | Data bus (When select 8bits Mode, this pin is NC)     |
| 23-24 | NC     | No connect                                            |
| 25    | CS     | Chip select                                           |
| 26    | RST    | Hardware reset                                        |
| 27-28 | NC     | No connect                                            |
| 29    | XL     | Left electrode                                        |
| 30    | YU     | Top electrode                                         |
| 31    | XR     | Right electrode                                       |
| 32    | YD     | Down electrode                                        |
| 33-34 | VLED-  | VLED- for B/L LED inverter (GND)                      |
| 35-36 | VLED+  | VLED+ for B/L LED inverter (+3.3V)                    |

Technical drawing of the LCD module showing top and side views with dimensions.

**Top View Dimensions:**

- Overall Width:  $79.12 \pm 0.5$  TFT OD
- TP OD:  $76.80$
- TP V.A:  $72.10$
- TP A.A:  $71.10$
- A.A:  $70.08$
- TP V.A Offset:  $1.21 \pm 0.5$
- TP A.A Offset:  $3.51 \pm 0.5$
- A.A Offset:  $(4.01)$
- A.A Offset:  $(4.52)$

**Bottom View Dimensions:**

- Overall Height:  $66.44 \pm 0.5$  TFT OD
- TP OD:  $63.80$
- TP V.A:  $54.60$
- TP A.A:  $53.60$
- A.A:  $52.56$

**Other Dimensions:**

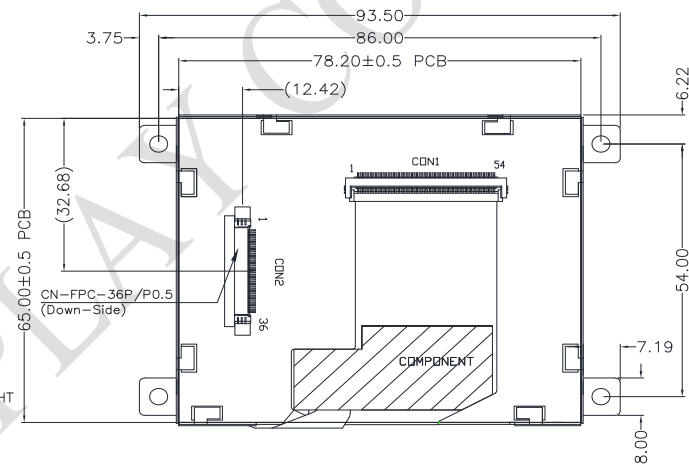
- TP V.A Offset:  $0.72 \pm 0.5$
- TP A.A Offset:  $3.12 \pm 0.5$
- A.A Offset:  $(3.62)$
- A.A Offset:  $(4.14)$
- TP V.A Offset:  $(4.01)$
- TP A.A Offset:  $(4.52)$
- A.A Offset:  $(4.52)$

**Module Label:** 320xRGBx240

**Mounting Holes:** 4- $\phi 3.5$  PTH

**Side View Dimensions:**

- Overall Thickness:  $9.00 \text{ MAX}$
- TP Thickness:  $6.16 \pm 0.5$
- A.A Thickness:  $5.06 \pm 0.3$
- Component Thickness:  $1.65 \text{ MAX COMPONENT}$



| CON2 |        |
|------|--------|
| Pin  | Symbol |
| 1    | GND    |
| 2    | VDD    |
| 3    | BLE    |
| 4    | D/C    |
| 5    | WR     |
| 6    | RD     |
| 7    | DB0    |
| 8    | DB1    |
| 9    | DB2    |
| 10   | DB3    |
| 11   | DB4    |
| 12   | DB5    |
| 13   | DB6    |
| 14   | DB7    |
| 15   | DB8    |
| 16   | DB9    |
| 17   | DB10   |
| 18   | DB11   |
| 19   | DB12   |
| 20   | DB13   |
| 21   | DB14   |
| 22   | DB15   |
| 23   | NC     |
| 24   | NC     |
| 25   | CS     |
| 26   | RST    |
| 27   | NC     |
| 28   | NC     |
| 29   | XL     |
| 30   | YU     |
| 31   | XR     |
| 32   | YD     |
| 33   | VLED-  |
| 34   | VLED-  |
| 35   | VLED+  |
| 36   | VLED+  |

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