**Winstar Display Co., LTD**
**華凌光電股份有限公司**
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# SPECIFICATION

**CUSTOMER :** _____

**MODULE NO.:** WF35-320240XD#0PW3-FC

| | |
|---|---|
| **APPROVED BY:**<br>**( FOR CUSTOMER USE ONLY )** | **PCB VERSION:** **DATA:** |

| SALES BY | APPROVED BY | CHECKED BY | PREPARED BY |
|---|---|---|---|
| first FC components | | | 葉虹蘭 |
| **ISSUED DATE:** 2022/01/24 | | | |

# General Specifications

| Item | Dimension | Unit |
|---|---|---|
| Size | 3.5 | inch |
| Dot Matrix | 320 x RGBx240(TFT) | dots |
| Module dimension | 76.84(W) x 63.84(H) x 4.86(D) | mm |
| Active area | 70.08 x 52.56 | mm |
| Pixel pitch | 0.219 x 0.219 | mm |
| LCD type | TFT, normally black, Transmissive | |
| View Direction | 80/80/80/80 | |
| Driver IC | ST7272A or equivalent | |
| Interface | 24-bit RGB | |
| Aspect Ratio | 4:3 | |
| Backlight Type | LED,Normally White | |
| CTP IC | ILI2130 or equivalent | |
| CTP Interface | I2C | |
| CTP FW Version | 0x07.0x00.0x00.0x00.0x00.0x35.0x5A.0x01 | |
| CTP Resolution | 16384*16384 | |
| With /Without TP | With CTP | |
| Surface | Glare | |

*Color tone slight changed by temperature and driving voltage.

# Absolute Maximum Ratings

| Item | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Temperature | TOP | -30 | — | +85 | ℃ |
| Storage Temperature | TST | -30 | — | +85 | ℃ |

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

# Electrical Characteristics

**1. Operating conditions:**

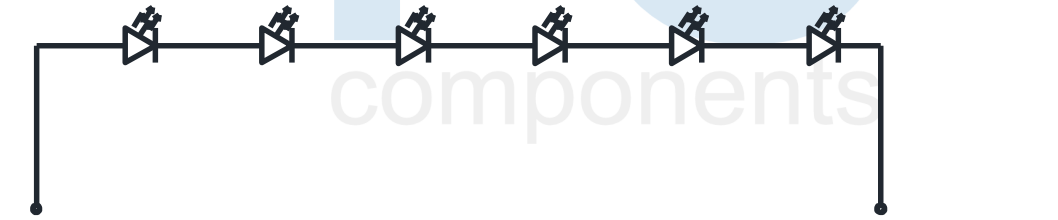
| Item | Symbol | Min | Typ | Max | Unit | Remark |
|---|---|---|---|---|---|---|
| Supply Voltage For LCM | VCC | 3.0 | 3.3 | 3.6 | V | |
| Supply Current For LCM | ICC | — | 20 | 30 | mA | Note 1 |
| Supply CTP | VDDT | 3.0 | 3.3 | 3.6 | V | |
| | ICTP | — | 45 | 68 | mA | |

Note 1 : This value is test for VCC =3.3V , Ta=25 ℃ only

**2. LED driving conditions**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Remark |
|---|---|---|---|---|---|---|
| LED current | | - | 20 | - | mA | |
| Power Consumption | | 324 | 384 | 408 | mW | |
| LED voltage | LED+ | 16.2 | 19.2 | 20.4 | V | Note 1 |
| LED Life Time | | - | 50,000 | - | Hr | Note 2,3,4 |

Note 1 : There are 1 Groups LED




CIRCUIT DIAGRAM

Note 2 : Ta = 25 ℃
Note 3 : Brightness to be decreased to 50% of the initial value
Note 4 : The single LED lamp case

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# Interface

**. LCM PIN Definition**

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | LED- | Power for LED backlight cathode | |
| 2 | LED- | Power for LED backlight cathode | |
| 3 | LED+ | Power for LED backlight anode | |
| 4 | LED+ | Power for LED backlight anode | |
| 5 | NC | No connect | |
| 6 | NC | No connect | |
| 7 | NC(SPI_IIC_SEL) | No connect | |
| 8 | /RESET | Hardware reset | |
| 9 | NC(CS) | No connect | |
| 10 | NC(SDA) | No connect | |
| 11 | NC(SCL) | No connect | |
| 12 | B0 | Data bus | |
| 13 | B1 | Data bus | |
| 14 | B2 | Data bus | |
| 15 | B3 | Data bus | |
| 16 | B4 | Data bus | |
| 17 | B5 | Data bus | |
| 18 | B6 | Data bus | |
| 19 | B7 | Data bus | |
| 20 | G0 | Data bus | |
| 21 | G1 | Data bus | |
| 22 | G2 | Data bus | |
| 23 | G3 | Data bus | |
| 24 | G4 | Data bus | |
| 25 | G5 | Data bus | |
| 26 | G6 | Data bus | |
| 27 | G7 | Data bus | |
| 28 | R0 | Data bus | |
| 29 | R1 | Data bus | |
| 30 | R2 | Data bus | |

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| | | | |
|---|---|---|---|
| 31 | R3 | Data bus | |
| 32 | R4 | Data bus | |
| 33 | R5 | Data bus | |
| 34 | R6 | Data bus | |
| 35 | R7 | Data bus | |
| 36 | HSYNC | Horizontal sync signal, default is negative polarity. | |
| 37 | VSYNC | Vertical sync signal, default is negative polarity. | |
| 38 | DCLK | Dot-clock signal and oscillator source | |
| 39 | NC(HDIR) | No connect | |
| 40 | NC(VDIR) | No connect | |
| 41 | VCC | Power Supply | |
| 42 | VCC | Power Supply | |
| 43 | NC | No connect | |
| 44 | NC | No connect | |
| 45 | NC(PARA_SERI) | No connect | |
| 46 | NC(BIST_EN) | No connect | |
| 47 | NC(ENPROG) | No connect | |
| 48 | NC | No connect | |
| 49 | NC | No connect | |
| 50 | NC | No connect | |
| 51 | NC(DISP) | No connect | |
| 52 | DE | Data input enable. Display access is enabled when DE is “H” . | |
| 53 | GND | Ground | |
| 54 | GND | Ground | |

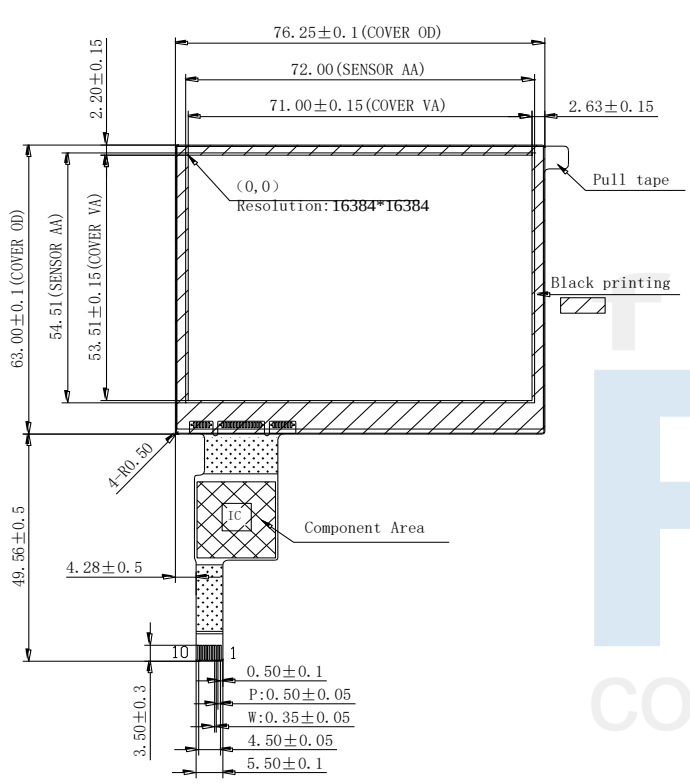
first components

## 2. CTP PIN Definition

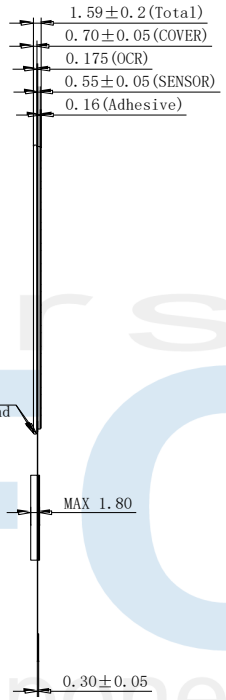
| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | VSS | System ground pin of the IC. Connect to system ground. | |
| 2 | VDDT | Power Supply : +3.3V | |
| 3 | SCL | I2C clock input | |
| 4 | NC | No connect | |
| 5 | SDA | I2C data input and output | |
| 6 | NC | No connect | |
| 7 | /RST | External Reset, Low is active | |
| 8 | NC | No connect | |
| 9 | /INT | External interrupt to the host | |
| 10 | VSS | System ground pin of the IC. Connect to system ground. | |

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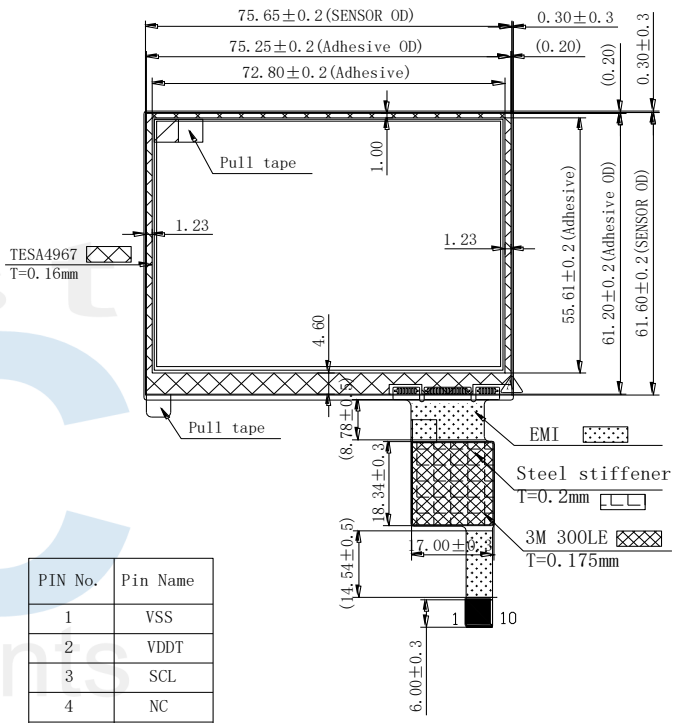
# Touch Panel Information




Front view




Side view

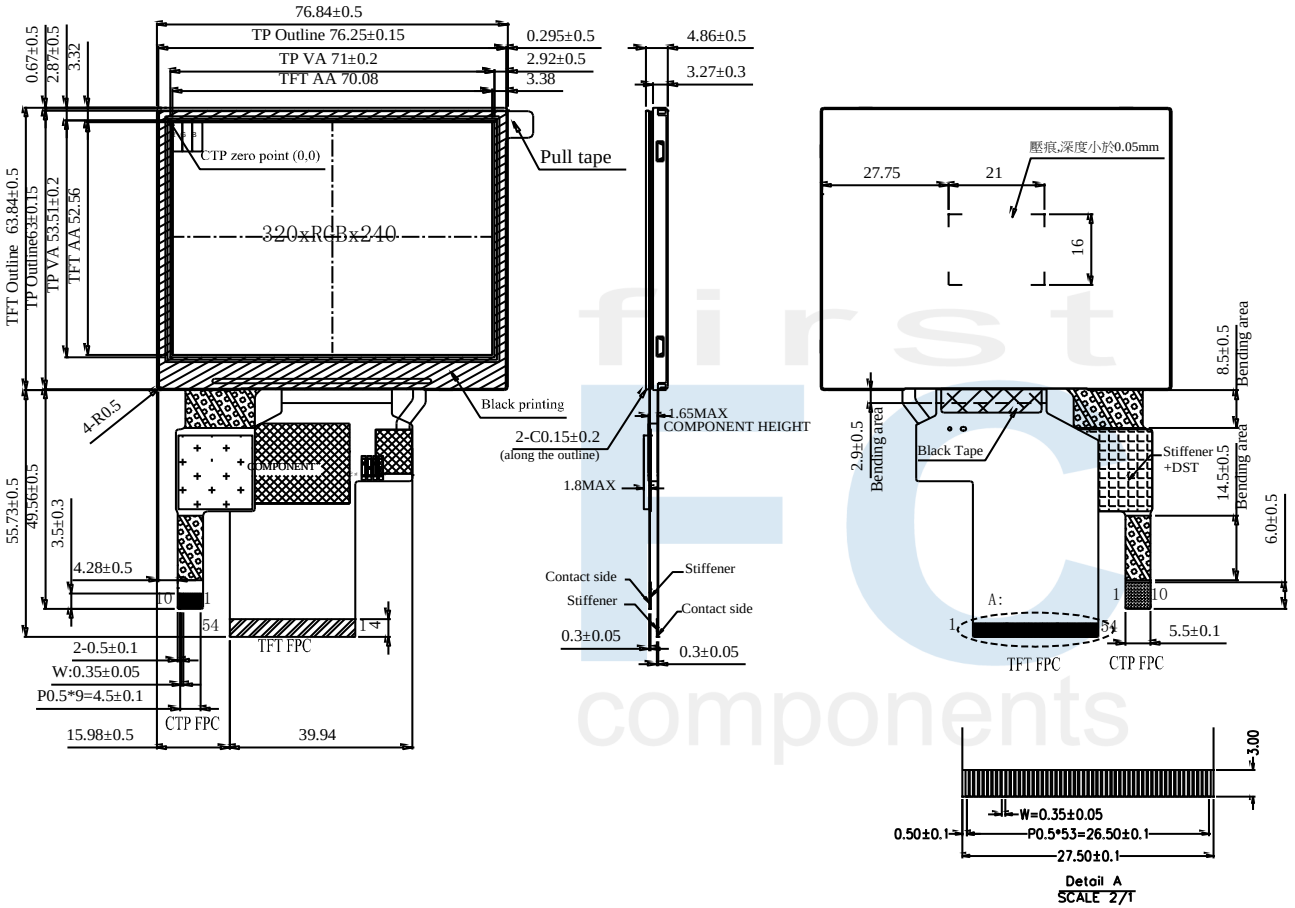



Back view

| PIN No. | Pin Name |
|---|---|
| 1 | VSS |
| 2 | VDDT |
| 3 | SCL |
| 4 | NC |
| 5 | SDA |
| 6 | NC |
| 7 | RST |
| 8 | NC |
| 9 | INT |
| 10 | VSS |

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# Contour Drawing




TFT

| PinNo. | Symbol | PinNo. | Symbol |
|---|---|---|---|
| 1 | LED- | 28 | R0 |
| 2 | LED- | 29 | R1 |
| 3 | LED+ | 30 | R2 |
| 4 | LED+ | 31 | R3 |
| 5 | NC | 32 | R4 |
| 6 | NC | 33 | R5 |
| 7 | NC(SPI_IIC_SEL) | 34 | R6 |
| 8 | /RESET | 35 | R7 |
| 9 | NC(CS) | 36 | HSYNC |
| 10 | NC(SDA) | 37 | VSYNC |
| 11 | NC(SCL) | 38 | DCLK |
| 12 | B0 | 39 | NC(HDIR) |
| 13 | B1 | 40 | NC(VDIR) |
| 14 | B2 | 41 | VCC |
| 15 | B3 | 42 | VCC |
| 16 | B4 | 43 | NC |
| 17 | B5 | 44 | NC |
| 18 | B6 | 45 | NC(PARA_SERI) |
| 19 | B7 | 46 | NC(BIST_EN) |
| 20 | G0 | 47 | NC(ENPROG) |
| 21 | G1 | 48 | NC |
| 22 | G2 | 49 | NC |
| 23 | G3 | 50 | NC |
| 24 | G4 | 51 | NC(DISP) |
| 25 | G5 | 52 | DE |
| 26 | G6 | 53 | GND |
| 27 | G7 | 54 | GND |

CTP

| PIN NO. | SYMBOL | PIN NO. | SYMBOL |
|---|---|---|---|
| 1 | VSS | 6 | NC |
| 2 | VDDT | 7 | /RST |
| 3 | SCL | 8 | NC |
| 4 | NC | 9 | /INT |
| 5 | SDA | 10 | VSS |

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