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

**CUSTOMER :** _____

**MODULE NO.: WF50-800480BD#C03-FC**

## General Specifications

| Item | Dimension | Unit |
|---|---|---|
| Size | 5.0 | inch |
| Dot Matrix | 800× 3(RGB) × 480 | dots |
| Module dimension | 120.7(W) ×75.8(H) ×4.475mm | mm |
| Active area | 108(W) ×64.8 (H) mm | mm |
| Dot pitch | 0.135(W) ×0.135(H) mm | mm |
| LCD type | TFT, Normally White, Transmissive | |
| View Direction | 12 o'clock | |
| Gray Scale Inversion Direction | 6 o'clock | |
| TFT Interface | 24-bit RGB | |
| Aspect Ratio | 16:9 | |
| Backlight Type | LED ,Normally White | |
| CTP IC | FT5426DQ8 Or Equal | |
| CTP Interface | I2C | |
| CTP FW Version: | 2 | |
| With /Without TP | With CTP | |
| Surface | Glare | |

*Color tone slight changed by temperature and driving voltage.

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# Absolute Maximum Ratings

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

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

## Typical Operation Conditions

| Item | Symbol | Values | | | Unit | Remark |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Power voltage | VDD | 3.0 | 3.3 | 3.6 | V | |
| Current for Driver(Black) | IDD | - | 110 | 170 | mA | VDD=3.3V |
| Input logic high voltage | VIH | 0.7 VDD | - | VDD | V | Note 1 |
| Input logic low voltage | VIL | 0 | - | 0.3 VDD | | |

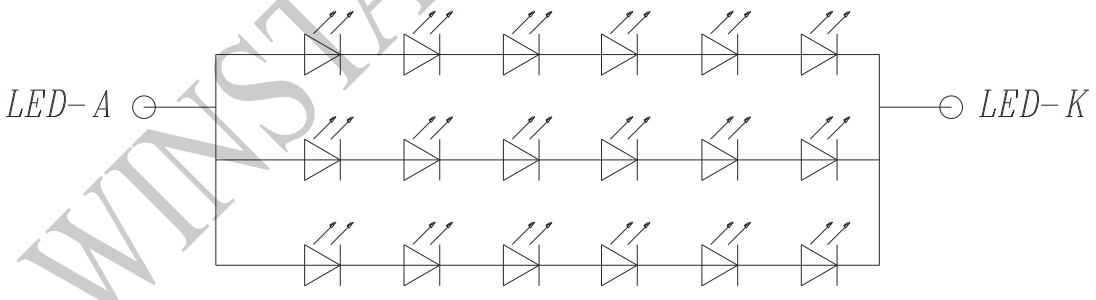
Note1: CLK,DE,R0~R7, G0~7, B0~7.

## Backlight Driving Conditions

| Item | Symbol | Values | | | Unit | Remark |
|---|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | | |
| Voltage for LED backlight | VL | 18 | 19.2 | 20 | V | Note 1 |
| Current for LED backlight | IL | -- | 60 | -- | mA | |
| LED life time | - | -- | 50,000 | - | Hr | Note 2 |

Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and $I_L$ =20ma/pcs.

Note 2: The “LED life time” is defined as the module brightness decrease to 50% Original brightness at Ta=25℃ and $I_L$ =20mA/pcs. The LED lifetime could be decreased if operating $I_L$ is lager than 25mA/pcs.




CIRCUIT DIAGRAM : 6*3 Dice

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# Interface

**LCM PIN Definition**

FPC Connector is used for the module electronics interface.

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | VLED- | Power for LED backlight (Cathode) | |
| 2 | VLED+ | Power for LED backlight (Anode) | |
| 3 | GND | Power Ground | |
| 4 | VDD | Power voltage | |
| 5 | R0 | Red data (LSB) | |
| 6 | R1 | Red data | |
| 7 | R2 | Red data | |
| 8 | R3 | Red data | |
| 9 | R4 | Red data | |
| 10 | R5 | Red data | |
| 11 | R6 | Red data | |
| 12 | R7 | Red data(MSB) | |
| 13 | G0 | Green data(LSB) | |
| 14 | G1 | Green data | |
| 15 | G2 | Green data | |
| 16 | G3 | Green data | |
| 17 | G4 | Green data | |
| 18 | G5 | Green data | |
| 19 | G6 | Green data | |
| 20 | G7 | Green data(MSB) | |
| 21 | B0 | Blue data(LSB) | |
| 22 | B1 | Blue data | |
| 23 | B2 | Blue data | |
| 24 | B3 | Blue data | |
| 25 | B4 | Blue data | |
| 26 | B5 | Blue data | |
| 27 | B6 | Blue data | |
| 28 | B7 | Blue data(MSB) | |
| 29 | GND | Power Ground | |

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| | | | |
|---|---|---|---|
| 30 | CLK | Sample clock | |
| 31 | DISP | Display on/off | |
| 32 | NC/HS | No connection /Horizontal sync input | (Note) |
| 33 | NC/VS | No connection /Vertical sync input | (Note) |
| 34 | DE | Data input enable | |
| 35 | NC | No connection | |
| 36 | GND | Power Ground | |
| 37 | NC | No connection | |
| 38 | NC | No connection | |
| 39 | NC | No connection | |
| 40 | NC | No connection | |

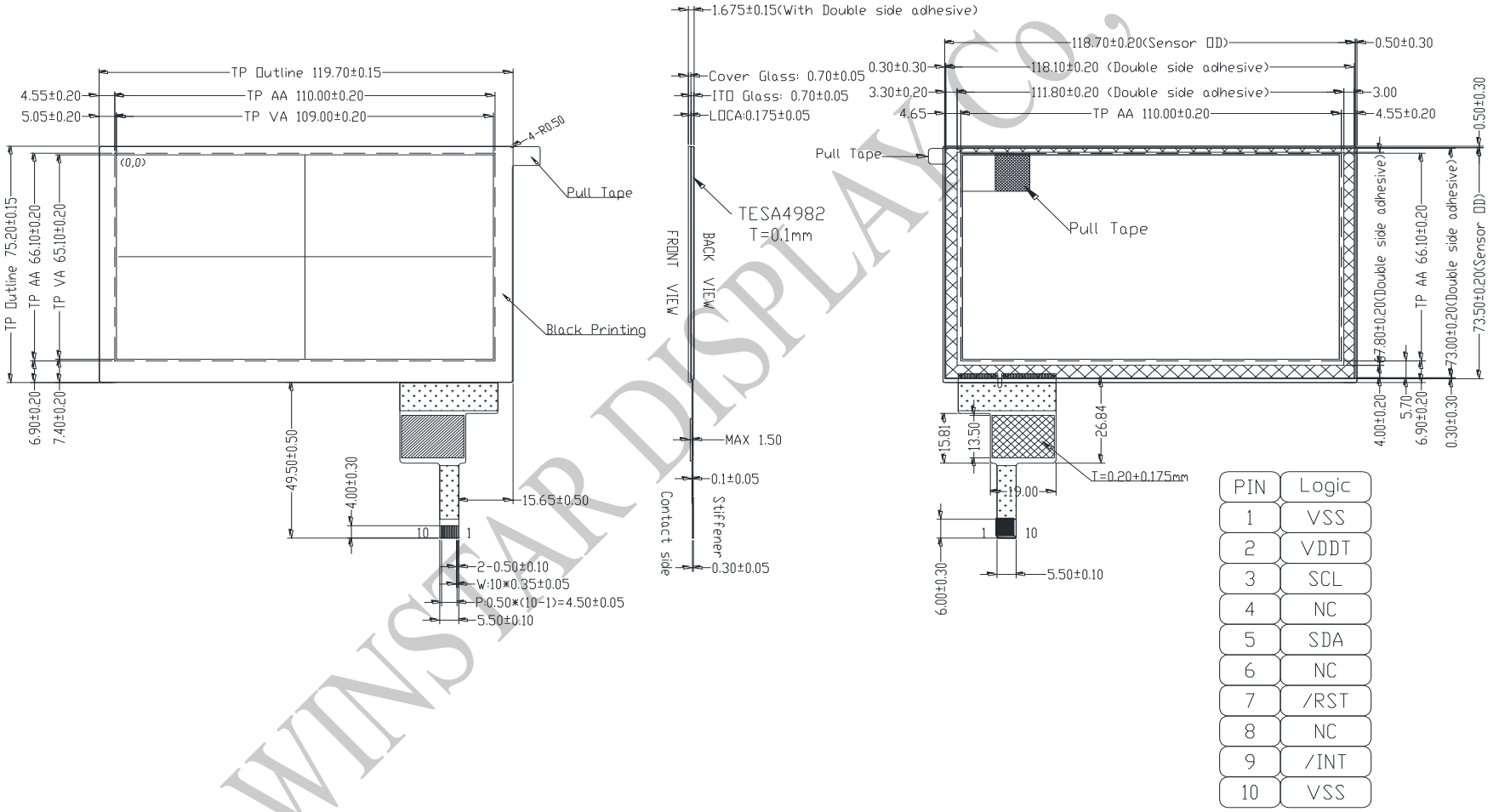
Note : This module default function is for DE mode, if this module want change to use SYNC mode , the FPC have to modify resistive jumper .

### 7.2. CTP PIN Definition

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | VSS | Ground for analog circuit | |
| 2 | VDDT | Power Supply : +3.0V | |
| 3 | SCL | I2C clock inputI2C 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 | Ground for analog circuit | |

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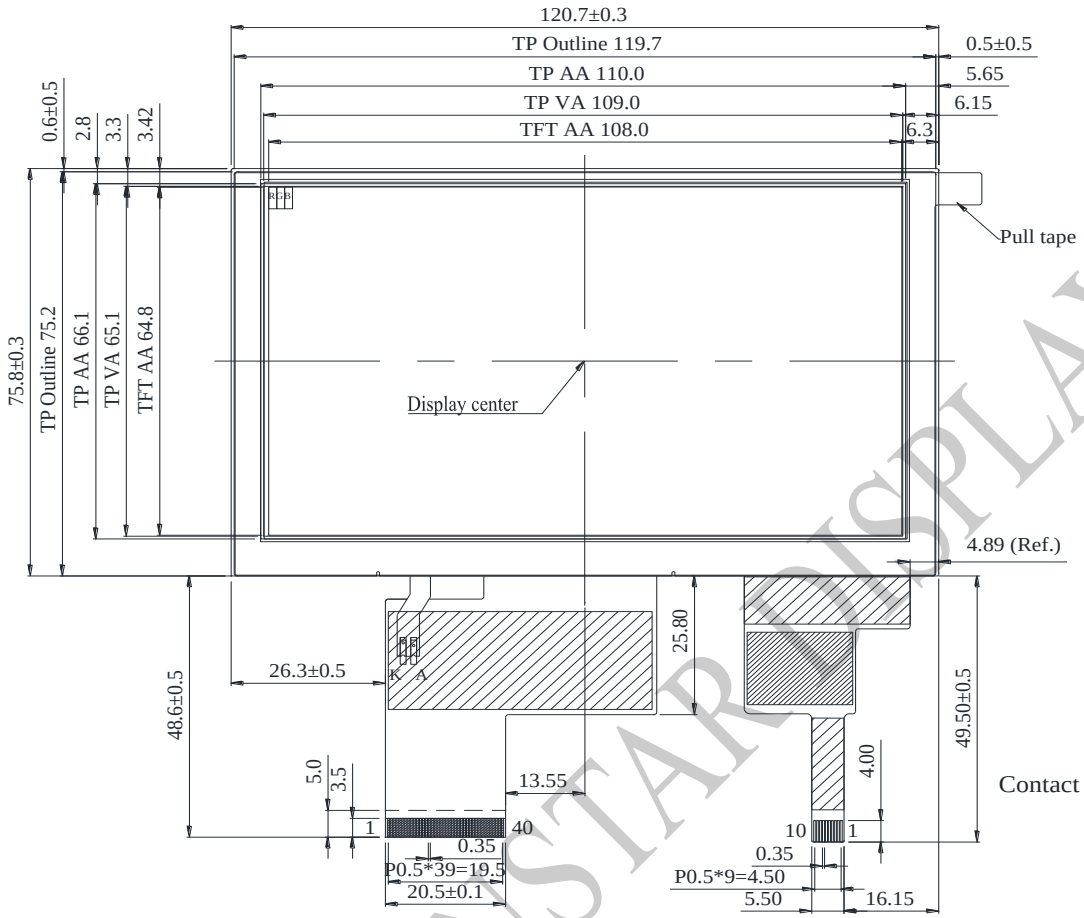
# Touch Panel Information

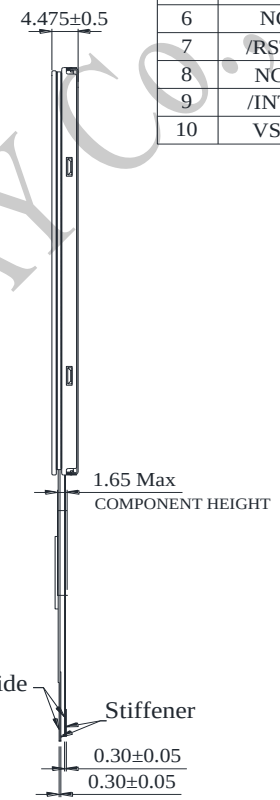



| PIN | Logic |
|---|---|
| 1 | VSS |
| 2 | VDDT |
| 3 | SCL |
| 4 | NC |
| 5 | SDA |
| 6 | NC |
| 7 | /RST |
| 8 | NC |
| 9 | /INT |
| 10 | VSS |

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# Contour Drawing




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

| PIN NO. | SYMBOL |
|---|---|
| 1 | $V_{LED-}$ |
| 2 | $V_{LED+}$ |
| 3 | GND |
| 4 | $V_{DD}$ |
| 5 | R0 |
| 6 | R1 |
| 7 | R2 |
| 8 | R3 |
| 9 | R4 |
| 10 | R5 |
| 11 | R6 |
| 12 | R7 |
| 13 | G0 |
| 14 | G1 |
| 15 | G2 |
| 16 | G3 |
| 17 | G4 |
| 18 | G5 |
| 19 | G6 |
| 20 | G7 |

| PIN NO. | SYMBOL |
|---|---|
| 21 | B0 |
| 22 | B1 |
| 23 | B2 |
| 24 | B3 |
| 25 | B4 |
| 26 | B5 |
| 27 | B6 |
| 28 | B7 |
| 29 | GND |
| 30 | CLK |
| 31 | DISP |
| 32 | NC/$H_{Sync}$ |
| 33 | NC/$V_{Sync}$ |
| 34 | DE |
| 35 | NC |
| 36 | GND |
| 37 | NC |
| 38 | NC |
| 39 | NC |
| 40 | NC |

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

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