**Winstar Display Co., LTD**
**華凌光電股份有限公司**
WEB: http://www.winstar.com.tw E-mail: winstar@winstar.com.tw

# SPECIFICATION

**CUSTOMER :** _____

**MODULE NO.:** WF70-800480HD#006-FC

## General Specifications

| Item | Dimension | Unit |
|---|---|---|
| Size | 7.0 | inch |
| Dot Matrix | 800 x RGBx480(TFT) | dots |
| Module dimension | 181.2(W) x 105.24(H) x 7.56(D) | mm |
| Active area | 152.4 x 91.44 | mm |
| Dot pitch | 0.0635 x 0.1905 | mm |
| LCD type | TFT, Normally White, Transmissive | |
| View Direction | 12 o'clock | |
| Gray Scale Inversion Direction | 6 o'clock | |
| Backlight Type | LED,Normally White | |
| 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 | -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

**Operating conditions:**

**Absolute Maximum Ratings (GND=0V)**

| Item | Symbol | Min | Typ | Max | Unit | Remark |
|---|---|---|---|---|---|---|
| Power Voltage | Vcc | -0.3 | - | 6 | V | |
| Input Signal Voltage | Vi | -0.3 | - | Vcc+0.3 | V | Note 1 |

Note 1: DCLK, DE, R0~ R5, G0~ G5, B0~ B5.

**Recommended Operation condition (GND=0V，Ta=25℃)**

| Item | | Symbol | Min | Typ | Max | Unit | Remark |
|---|---|---|---|---|---|---|---|
| Power Supply Voltage | | Vcc | 3.0 | 3.3 | 3.6 | V | - |
| Supply current For LCM | | Icc | - | 160 | 270 | mA | Note2 |
| Power Consumption | | - | - | 530 | 970 | mW | Vcc=3.3V |
| Supply Voltage For CTP | | VDDT | 2.8 | - | 3.3 | V | - |
| Input logic Voltage | High Level | $V_{IH}$ | 0.7Vcc | - | Vcc | V | Note 1 |
| | Low Level | $V_{IL}$ | 0 | - | 0.3Vcc | | |

Note 1: DCLK, DE, R0~ R5, G0~ G5, B0~ B5.

Note 2 : This value is test for Vcc=3.3V , Ta=25 ℃ only

**LED driving conditions**

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Remark |
|---|---|---|---|---|---|---|
| LED current | - | - | 160 | 200 | mA | - |
| Power Consumption | VBL+=9.8V | | 1568 | 2200 | mW | - |
| LED voltage | VBL+ | 8.4 | - | 11 | V | Note 1 |
| LED Life Time | - | - | 50,000 | - | Hr | Note 2,3,4 |

# Interface

**LCM PIN Definition**

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | GND | Power Ground | |
| 2 | GND | Power Ground | |
| 3 | NC | Not Connect | |
| 4 | Vcc | Power Supply for Digital Circuit | |
| 5 | Vcc | Power Supply for Digital Circuit | |
| 6 | Vcc | Power Supply for Digital Circuit | |
| 7 | Vcc | Power Supply for Digital Circuit | |
| 8 | NC | Not Connect | |
| 9 | DE | Data Enable | |
| 10 | GND | Power Ground | |
| 11 | GND | Power Ground | |
| 12 | GND | Power Ground | |
| 13 | B5 | Blue Data 5 (MSB) | |
| 14 | B4 | Blue Data 4 | |
| 15 | B3 | Blue Data 3 | |
| 16 | GND | Power Ground | |
| 17 | B2 | Blue Data 2 | |
| 18 | B1 | Blue Data 1 | |
| 19 | B0 | Blue Data 0 (LSB) | |
| 20 | GND | Power Ground | |
| 21 | G5 | Green Data 5 (MSB) | |
| 22 | G4 | Green Data 4 | |
| 23 | G3 | Green Data 3 | |
| 24 | GND | Power Ground | |
| 25 | G2 | Green Data 2 | |
| 26 | G1 | Green Data 1 | |
| 27 | G0 | Green Data 0(LSB) | |
| 28 | GND | Power Ground | |
| 29 | R5 | Red Data 5 (MSB) | |

| | | | |
|---|---|---|---|
| 30 | R4 | Red Data 4 | |
| 31 | R3 | Red Data 3 | |
| 32 | GND | Power Ground | |
| 33 | R2 | Red Data 2 | |
| 34 | R1 | Red Data 1 | |
| 35 | R0 | Red Data 0(LSB) | |
| 36 | GND | Power Ground | |
| 37 | GND | Power Ground | |
| 38 | DCLK | Clock Signals ; Latch Data at the Falling Edge | |
| 39 | GND | Power Ground | |
| 40 | GND | Power Ground | |

## Backlight Driving Part

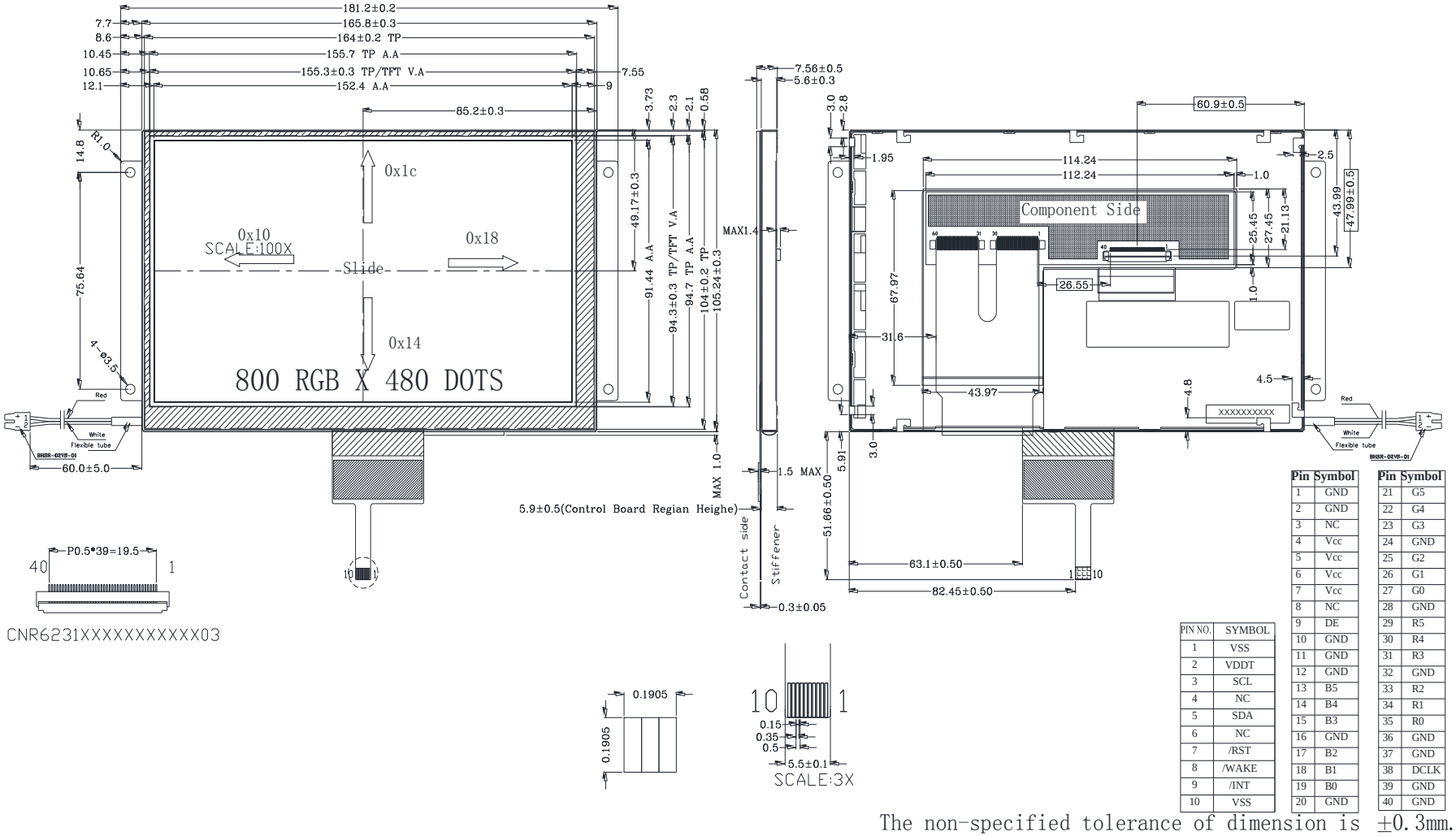
| Pin No. | Symbol | Description |
|---|---|---|
| 1 | VLED+ | Red, LED_ Anode |
| 2 | VLED- | White, LED_ Cathode |

Note: The backlight interface connector is a model SM02B-BHSS-1-TB manufactured by JST or equivalent. The matching connector part number is BHSR-20VS-1 manufactured by JST or equivalent.

## CTP PIN Definition

| Pin | Symbol | Function | Remark |
|---|---|---|---|
| 1 | VSS | Ground for analog circuit | |
| 2 | VDDT | Power Supply : +3.3V | |
| 3 | SCL | SPI Slave mode, chip select, active low<br>I2C clock input | |
| 4 | NC | No connect | |
| 5 | SDA | SPI Slave mode, data input<br>I2C data input and output | |
| 6 | NC | No connect | |
| 7 | /RST | External Reset, Low is active | |
| 8 | /WAKE | External interrupt from the host | |
| 9 | /INT | External interrupt to the host | |
| 10 | VSS | Ground for analog circuit | |

# Contour Drawing



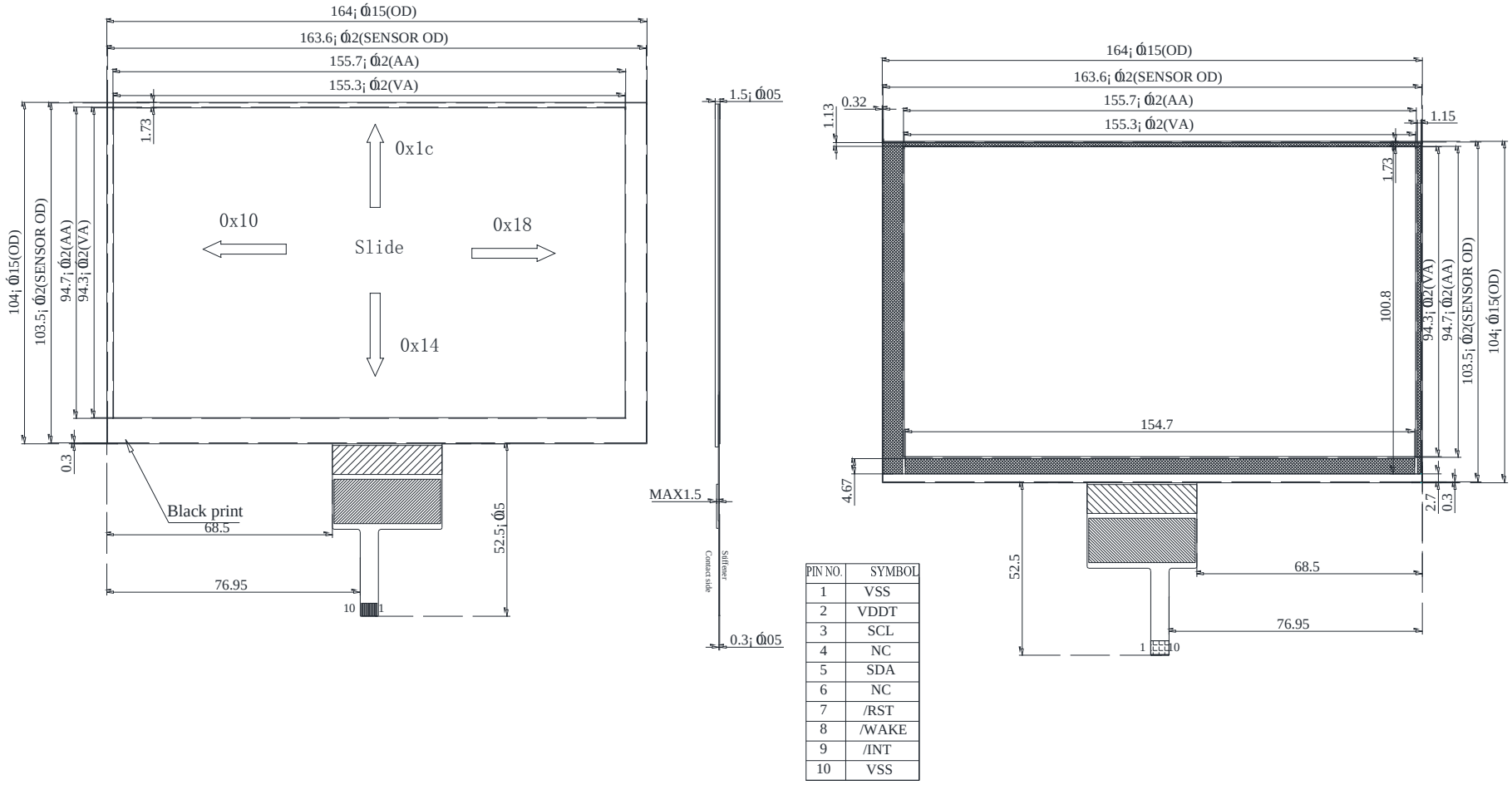

| PIN NO. | SYMBOL |
|---|---|
| 1 | VSS |
| 2 | VDDT |
| 3 | SCL |
| 4 | NC |
| 5 | SDA |
| 6 | NC |
| 7 | /RST |
| 8 | /WAKE |
| 9 | /INT |
| 10 | VSS |

| Pin | Symbol |
|---|---|
| 1 | GND |
| 2 | GND |
| 3 | NC |
| 4 | Vcc |
| 5 | Vcc |
| 6 | Vcc |
| 7 | Vcc |
| 8 | NC |
| 9 | DE |
| 10 | GND |
| 11 | GND |
| 12 | GND |
| 13 | B5 |
| 14 | B4 |
| 15 | B3 |
| 16 | GND |
| 17 | B2 |
| 18 | B1 |
| 19 | B0 |
| 20 | GND |

| Pin | Symbol |
|---|---|
| 21 | G5 |
| 22 | G4 |
| 23 | G3 |
| 24 | GND |
| 25 | G2 |
| 26 | G1 |
| 27 | G0 |
| 28 | GND |
| 29 | R5 |
| 30 | R4 |
| 31 | R3 |
| 32 | GND |
| 33 | R2 |
| 34 | R1 |
| 35 | R0 |
| 36 | GND |
| 37 | GND |
| 38 | DCLK |
| 39 | GND |
| 40 | GND |

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

# Touch Panel Information




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