

TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



SPECIFICATION

MODULE NO.: WF24LTYAJDNN0#

General Specifications

| Item | Dimension | Unit |
|------------------|-----------------------------------|------|
| Size | 2.4" | |
| Dot Matrix | 240 x RGB x 320(TFT) | dots |
| Module dimension | 42.72(W) x 60.26(H) x 2.8(D) | mm |
| Active area | 36.72 x 48.96 | mm |
| Dot pitch | 0.153 x 0.153 | mm |
| LCD type | TFT, Normally Black, Transmissive | |
| Controller IC | ILI9341V or equivalent | |
| Viewing angle | 80/80/80/80 | |
| Aspect Ratio | Portrait | |
| Backlight Type | LED, Normally White | |
| Touch Panel | Without Touch Panel | |
| 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 | °C |
| Storage Temperature | TST | -30 | — | +80 | °C |

Electrical Characteristics

1. Operating conditions:

| Item | Symbol | Min | Typ | Max | Unit |
|---------------------------|--------|------------------------|-----|-----|------|
| Supply Voltage For Analog | VCI | 2.5 | — | 3.3 | V |
| Supply Voltage For Logic | IOVCC | 2.5 | — | 3.3 | V |
| Supply Current For LCM | ICC | IOVCC=VCI =VCC=3.0V | 6 | 9 | mA |

2. LED driving conditions

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|-------------------|--------|--------|------|------|------|
| LED current | — | — | 80 | — | mA |
| Power Consumption | — | — | 280 | — | mW |
| LED voltage | VBL+ | 2.8 | 3.5 | 3.7 | V |
| LED Life Time | — | 50,000 | — | — | Hr |

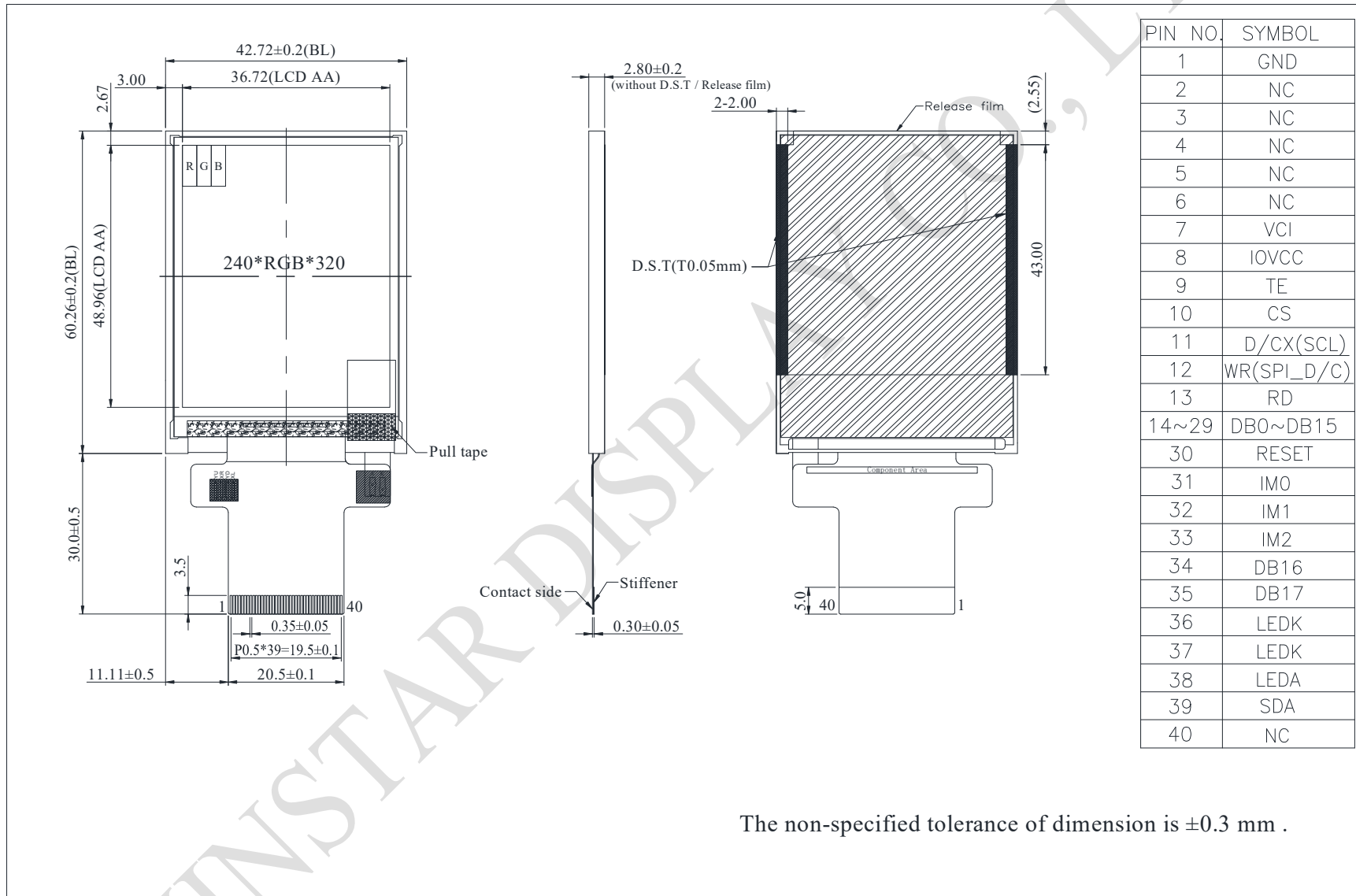
Interface

1. LCM PIN Definition

| NO | Symbol | Function | I/O |
|-------|-------------|---|-----|
| 1 | GND | Ground | P |
| 2-6 | NC | No connection | - |
| 7 | VCI | High voltage power supply for analog circuit blocks (2.5 ~ 3.3 V) | P |
| 8 | IOVCC | Low voltage power supply for interface logic circuits (2.5 ~ 3.3 V) | P |
| 9 | TE | Tearing effect output pin to synchronize MPU to frame writing, activated by S/W command. When this pin is not activated, this pin is low. If not used, open this pin. | O |
| 10 | CS | Chip select signal. | I |
| 11 | D/CX(SCL) | (D/CX): This pin is used to select "Data or Command" in the parallel interface. When DCX = 1, data is selected. When DCX = 0, command is selected. (SCL): This pin is used as the serial interface clock in 3-wire 9-bit/4-wire 8-bit serial data interface. If not used, this pin should be connected to IOVCC or GND. | I |
| 12 | WR(SPI_D/C) | (WRX) - 8080- I /8080- II system: Serves as a write signal and writes data at the rising edge. (D/CX) - 4-line system: Serves as the selector of command or parameter. Fix to IOVCC level when not in use. | I |
| 13 | RD | 8080- I /8080- II system (RDX): Serves as a read signal and MCU read data at the rising edge. Fix to IOVCC level when not in use. | I |
| 14-29 | DB0~DB15 | 18-bit parallel bi-directional data bus for MCU system. Fix to GND level when not in use. | I/O |
| 30 | RESET | This signal will reset the device and must be applied to properly initialize the chip. Signal is active low. | I |
| 31 | IM0 | Select the MCU interface mode | I |
| 32 | IM1 | | |
| 33 | IM2 | | |

| | | IM2 | IM1 | IM0 | MCU-Interface Mode | DB Pin in use | | | |
|--|------|--|-----|-----|--------------------------------------|------------------|---------|--|-----|
| | | | | | | Register/Content | GRAM | | |
| | | 0 | 0 | 0 | 80 MCU 8-bit bus interface I | D[7:0] | D[7:0] | | |
| | | 0 | 0 | 1 | 80 MCU 16-bit bus interface I | D[7:0] | D[15:0] | | |
| | | 0 | 1 | 0 | 80 MCU 9-bit bus interface I | D[7:0] | D[8:0] | | |
| | | 0 | 1 | 1 | 80 MCU 18-bit bus interface I | D[7:0] | D[17:0] | | |
| | | 1 | 0 | 1 | 3-wire 9-bit data serial interface I | SDA: In/OUT | | | |
| | | 1 | 1 | 0 | 4-wire 8-bit data serial interface I | SDA: In/OUT | | | |
| <p>MPU Parallel interface bus and serial interface select If use RGB Interface must select serial interface. * : Fix this pin at IOVCC or GND.</p> | | | | | | | | | |
| 34 | DB16 | 18-bit parallel bi-directional data bus for MCU system and RGB interface mode Fix to GND level when not in use. | | | | | | | I/O |
| 35 | DB17 | | | | | | | | |
| 36 | LEDK | Cathode of LED backlight. | | | | | | | P |
| 37 | LEDK | Cathode of LED backlight. | | | | | | | P |
| 38 | LEDA | Anode of LED backlight. | | | | | | | P |
| 39 | SDA | SDA : Serial in/out signal. The data is applied on the rising edge of the SCL signal. If not used, fix this pin at IOVCC or GND. | | | | | | | I/O |
| 40 | NC | Not used, open this pin | | | | | | | N |

Contour Drawing



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