

# TFT DISPLAY SPECIFICATION



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



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### SPECIFICATION

**MODULE NO.: WF24LTYAJDNN0#**

### General Specifications

Item	Dimension	Unit
Size	2.4	inch
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

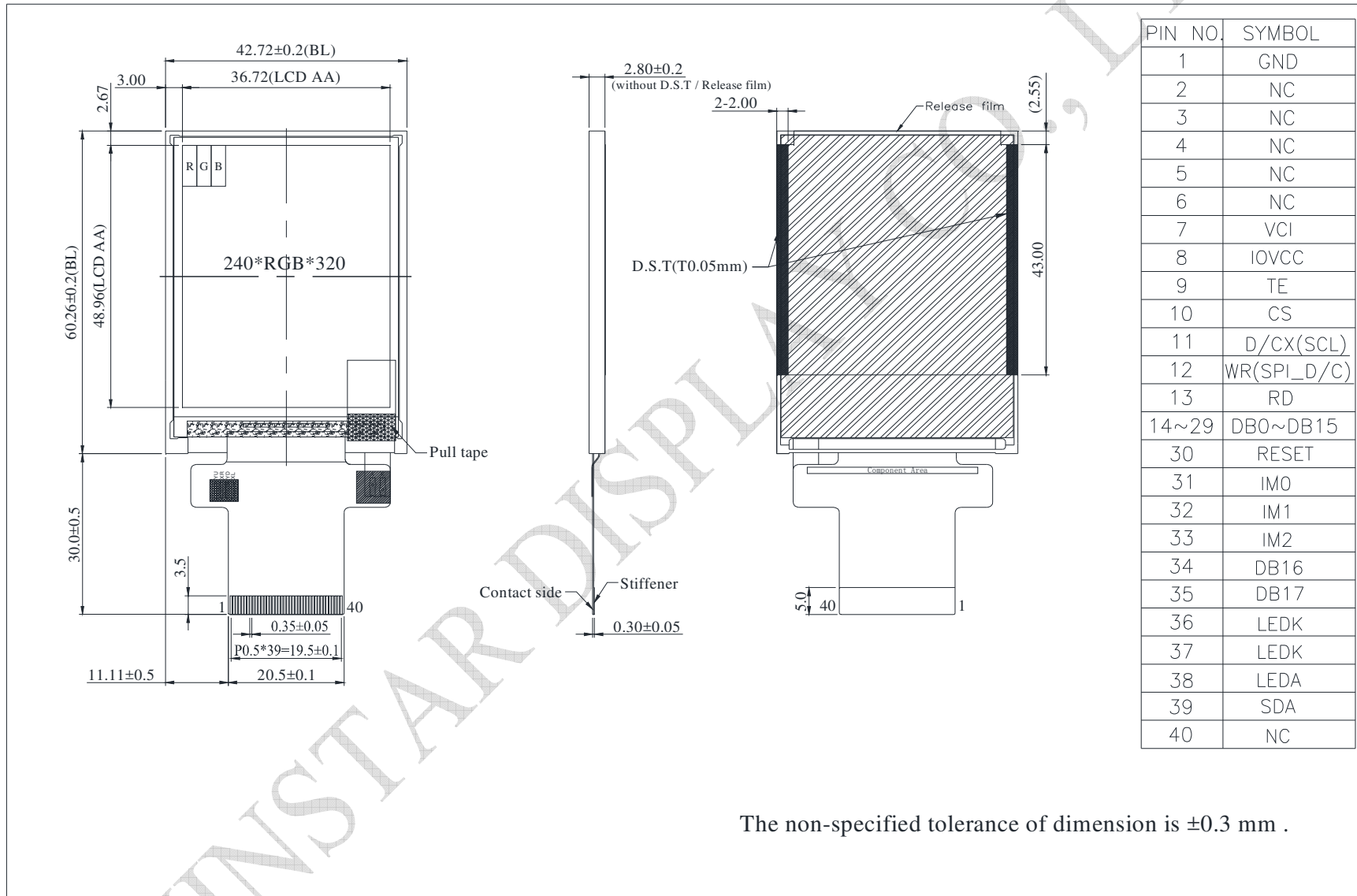
# Interface

## 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			
MPU Parallel interface bus and serial interface select If use RGB Interface must select serial interface. * : Fix this pin at IOVCC or GND.									
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



PIN NO.	SYMBOL
1	GND
2	NC
3	NC
4	NC
5	NC
6	NC
7	VCI
8	IOVCC
9	TE
10	CS
11	D/CX(SCL)
12	WR(SPI_D/C)
13	RD
14~29	DB0~DB15
30	RESET
31	IM0
32	IM1
33	IM2
34	DB16
35	DB17
36	LEDK
37	LEDK
38	LEDA
39	SDA
40	NC

The non-specified tolerance of dimension is  $\pm 0.3$  mm .