TFT DISPLAY SPECIFICATION



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SPECIFICATION

MODULE NO.: WF24-240320LD#0SP0-FC

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
Pixel 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.

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Absolute Maximum Ratings

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

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	—	6	9	mA

2. LED driving conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
LED current	—	—	40	—	mA
LED voltage	VBL+	10.8	11.6	12.4	V
LED Life Time	—	30,000	—	—	Hr

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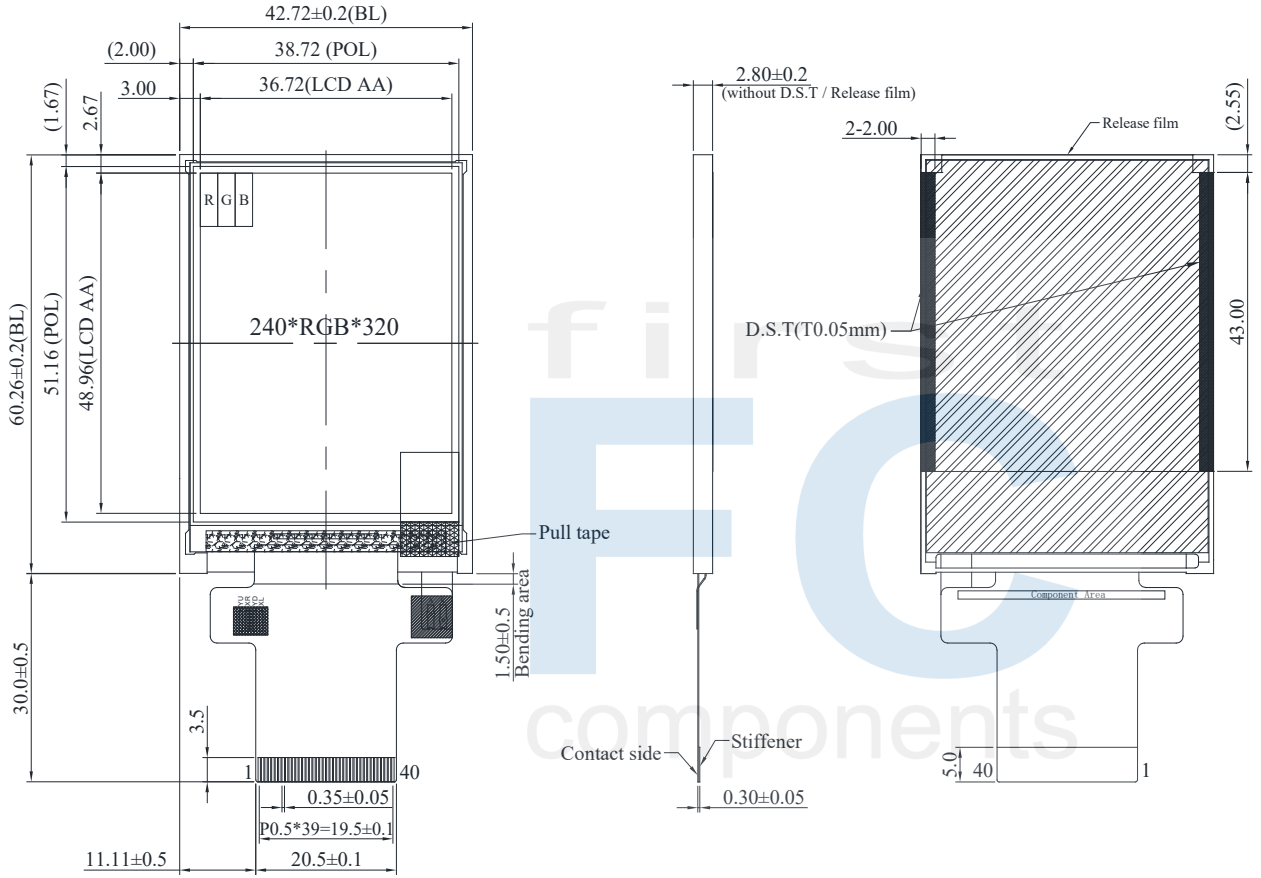
Interface

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		

<table>
<tr><td></td><td></td><td>
<table>
<tr><th rowspan="2">IM2</th><th rowspan="2">IM1</th><th rowspan="2">IM0</th><th rowspan="2">MCU-Interface Mode</th><th colspan="2">DB Pin in use</th></tr>
<tr><th>Register/Content</th><th>GRAM</th></tr>
<tr><td>0</td><td>0</td><td>0</td><td>80 MCU 8-bit bus interface I</td><td>D[7:0]</td><td>D[7:0]</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>80 MCU 16-bit bus interface I</td><td>D[7:0]</td><td>D[15:0]</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>80 MCU 9-bit bus interface I</td><td>D[7:0]</td><td>D[8:0]</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>80 MCU 18-bit bus interface I</td><td>D[7:0]</td><td>D[17:0]</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>3-wire 9-bit data serial interface I</td><td colspan="2">SDA: In/OUT</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>4-wire 8-bit data serial interface I</td><td colspan="2">SDA: In/OUT</td></tr>
</table>
MPU Parallel interface bus and serial interface select
If use RGB Interface must select serial interface.
* : Fix this pin at IOVCC or GND.
</td><td></td></tr>
<tr><td>34</td><td>DB16</td><td rowspan="2">18-bit parallel bi-directional data bus for MCU system and RGB
interface mode
Fix to GND level when not in use.</td><td rowspan="2">I/O</td></tr>
<tr><td>35</td><td>DB17</td></tr>
<tr><td>36</td><td>VLED-</td><td>Cathode of LED backlight.</td><td>P</td></tr>
<tr><td>37</td><td>VLED-</td><td>Cathode of LED backlight.</td><td>P</td></tr>
<tr><td>38</td><td>VLED+</td><td>Anode of LED backlight.</td><td>P</td></tr>
<tr><td>39</td><td>SDA</td><td>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.</td><td>I/O</td></tr>
<tr><td>40</td><td>NC</td><td>Not used, open this pin</td><td>N</td></tr>
</table>

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	VLED-
37	VLED-
38	VLED+
39	SDA
40	NC

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