

TFT DISPLAY SPECIFICATION



RAYSTAR

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RFJ240M-ALW-DNN

General Specifications

- Size: 2.4-inch
- Dot Matrix: 240 x RGB x 320 (TFT) dots
- Module Dimension: 42.72 (W) x 60.26 (H) x 2.25 (D) mm
- Active Area: 36.72 x 48.96 mm
- Pixel Pitch: 0.153 x 0.153 mm
- LCD Type: TFT, Normally White, Transmissive
- TFT Interface: SPI
- TFT Driver IC: ST7789V
- View Direction: 6 o'clock
- Gray Scale Inversion Direction: 12 o'clock
- Aspect Ratio: Portrait
- Backlight Type: LED, Normally White
- Touch Panel: Without Touch Panel
- Surface: Glare

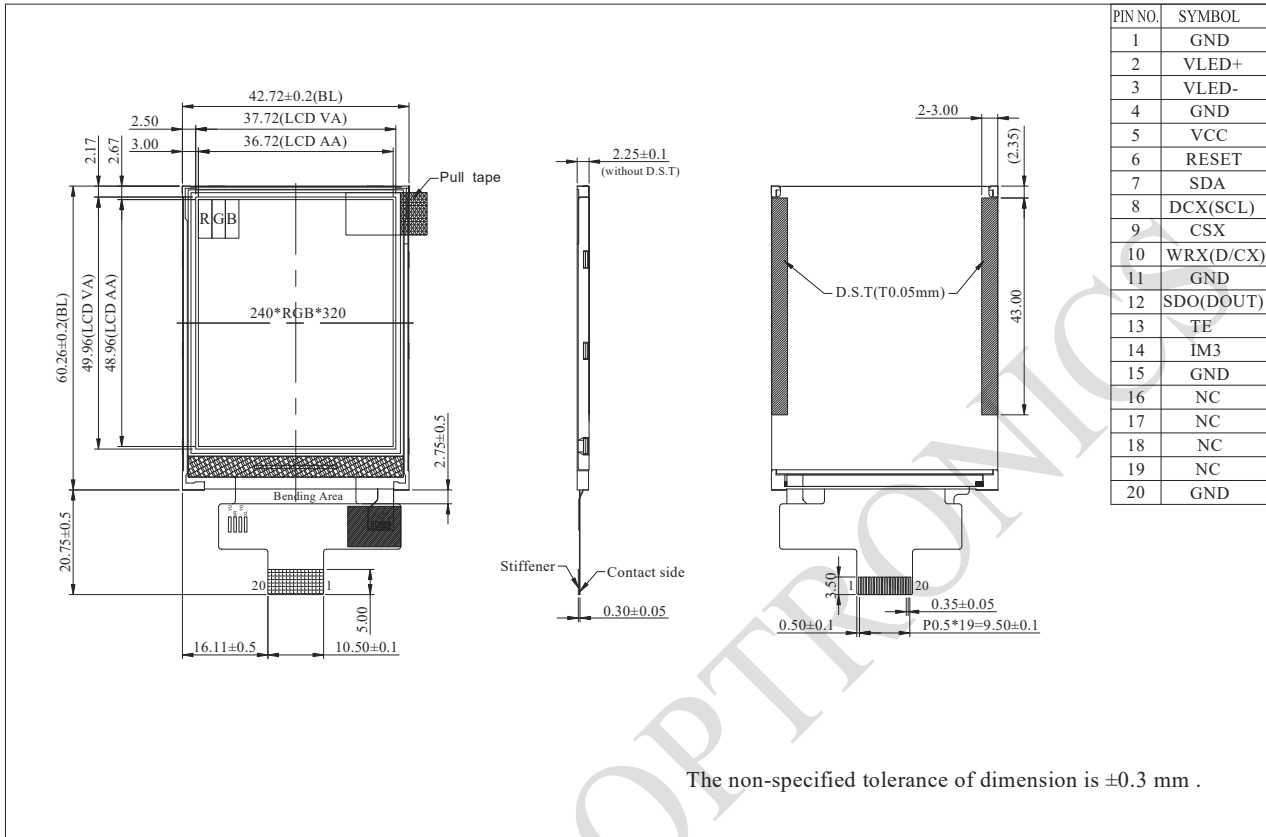
*Color tone slight changed by temperature and driving voltage.

Interface

LCM PIN Definition

Pin No.	Symbol	Function																		
1	GND	Ground																		
2	VLED+	Anode of LED backlight.																		
3	VLED-	Cathode of LED backlight.																		
4	GND	Ground																		
5	VCC	Power supply																		
6	RESET	System reset pin. (RESX) signal is active low																		
7	SDA	When IM3: Low, SPI interface input/output pin. When IM3: High, SPI interface input pin. The data is latched on the rising edge of the SCL signal. If not used, please fix this pin at VDDI or DGND level.																		
8	DCX(SCL)	This pin is used to be serial interface clock. DCX='1': display data or parameter. DCX='0': command data. If not used, please fix this pin at VDDI or DGND.																		
9	CSX	Chip selection pin Low enable. High disable.																		
10	WRX(D/CX)	Display data/command selection pin in 4-line serial interface. Second Data lane in 2 data lane serial interface. If not used, please fix this pin at VDDI or DGND.																		
11	GND	Ground																		
12	SDO(DOUT)	SPI interface output pin. The data is output on the falling edge of the SCL signal. If not used, let this pin open.																		
13	TE	Tearing effect signal is used to synchronize MCU to frame memory writing. If not used, please let this pin open																		
14	IM3	The MCU interface mode select. <table border="1" data-bbox="507 1514 1423 1742"> <thead> <tr> <th>IM3</th> <th>IM2</th> <th>IM1</th> <th>IM0</th> <th>MPU Interface Mode</th> <th>Data pin</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td>1</td> <td>0</td> <td>4-line 8bit serial I/F</td> <td>SDA: in/out</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>0</td> <td>4-line 8bit serial I/F II</td> <td>SDA:in/ SDO: out</td> </tr> </tbody> </table>	IM3	IM2	IM1	IM0	MPU Interface Mode	Data pin	0	1	1	0	4-line 8bit serial I/F	SDA: in/out	1	1	1	0	4-line 8bit serial I/F II	SDA:in/ SDO: out
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15	GND	Ground																		
16-19	NC	No connection																		
20	GND	Ground																		

Contour Drawing



Absolute Maximum Ratings

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

Electrical Characteristics

Operating Conditions

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Analog	V _{CC}	—	2.4	3.3	3.6	V
Supply Current For LCM	I _{CC}	—	—	6.4	9.6	mA

LED Driving Conditions

Parameter	Symbol	Min	Typ	Max	Unit
LED Current	—	—	80	—	mA
Power Consumption	—	—	256	—	mW
LED Voltage	V _{LED+}	2.8	3.1	3.3	V
LED Life Time	—	—	50,000	—	Hr