

TFT DISPLAY SPECIFICATION



RAYSTAR

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RFJ280J-AYH-DNN

General Specifications

- Size: 2.8-inch
- Dot Matrix: 240 x RGB x 320 (TFT) dots
- Module Dimension: 50.5 (W) x 69.7 (H) x 4.55 (D) mm
- Active Area: 43.2 x 57.6 mm
- Dot Pitch: 0.18 x 0.18 mm
- LCD Type: TFT, Normally Black, Transmissive
- Controller IC: ILI9341V
- Interface: MCU/SPI
- Viewing Angle: 80/80/80/80
- Aspect Ratio: 3 : 4
- Backlight Type: LED, Normally White
- Touch Panel: Without Touch Panel
- Surface: Glare

*Color tone slight changed by temperature and driving voltage.

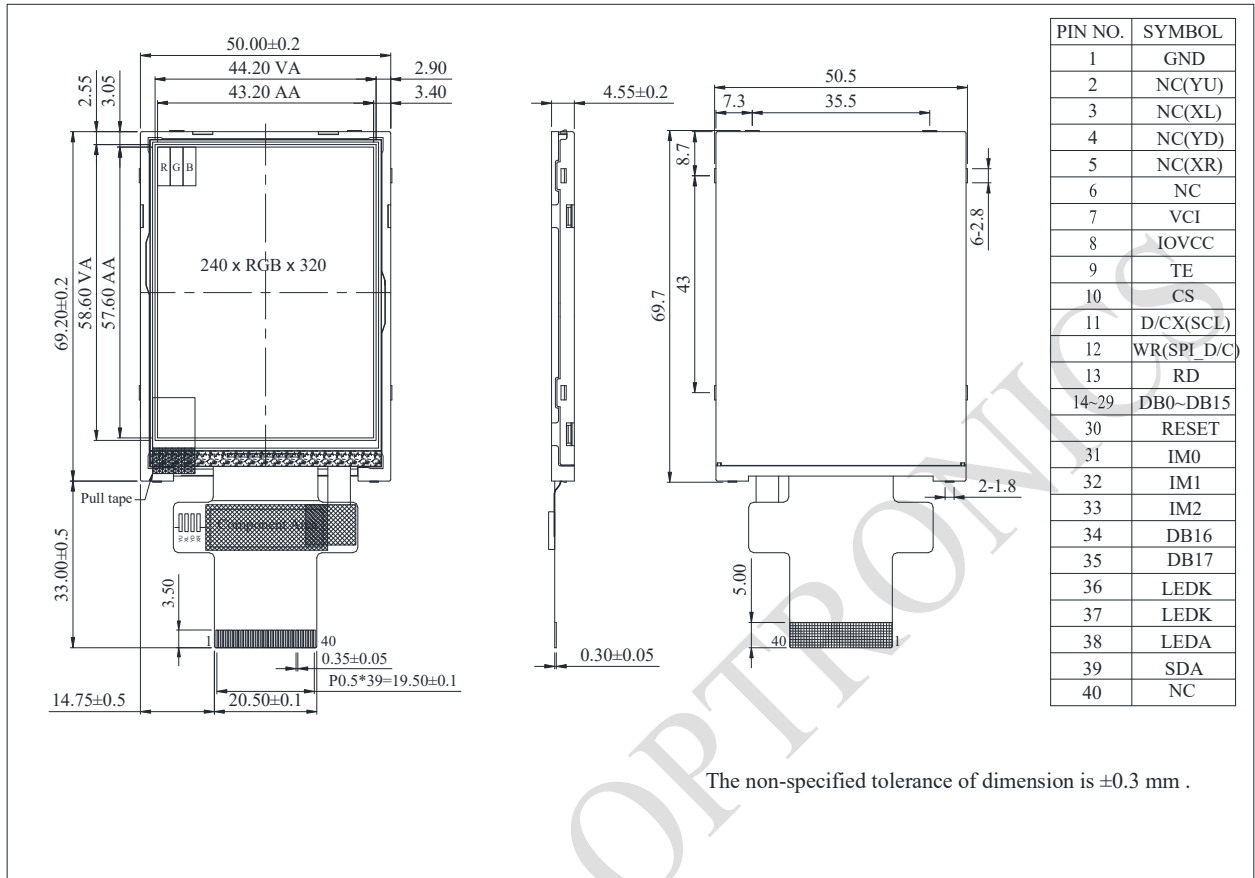
Interface

LCM PIN Definition

Pin No.	Symbol	Function	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 (RD _X): Serves as a read signal and MCU read data at the rising edge. Fix to IOVCC level when not in use.	I
14-	DB0~DB15	18-bit parallel bi-directional data bus for MCU system.	I/O

29		Fix to GND level when not in use.																																													
30	RESET	(RESX)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	<table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table> <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>		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	
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33	IM2																																														
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



RAYSTAR OPTRO

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 Digital	IOVCC	—	1.65	—	3.3	V
Supply Voltage for Analog	VCI	—	2.5	—	3.3	V
Power Supply for Current	ICC	IOVCC=VCI =VCC=3.0V	—	13	20	mA

LED Driving Conditions

Parameter	Symbol	Min	Typ	Max	Unit
LED Current	—	—	100	—	mA
LED Voltage	LEDA	8.1	9.3	10.5	V
LED Life Time	—	50,000	—	—	Hr