



RAYSTAR

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## RFJ320D-ALH-DNN

### SPECIFICATION

#### General Specifications

- Size: 3.2 inch
- Dot Matrix: 240x RGB x 320(TFT) dots
- Module dimension: 55.04 (W) x 77.6 (H) x 2.55(D) mm
- Active area: 48.6 x 64.8 mm
- Pixel pitch: 0.2025 x 0.2025 mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 6 o'clock
- Gray Scale Inversion Direction: 12 o'clock
- Aspect Ratio: Portrait
- Driver IC: ILI9341 or Equivalent
- Interface: 80 MCU 8bit /9bit/16bit/18bit/SPI(3 Wire/4 Wire)
- Backlight Type: LED, Normally White
- Touch Panel: Without Touch Panel
- Surface: Anti-Glare

\*Color tone slight changed by temperature and driving voltage.

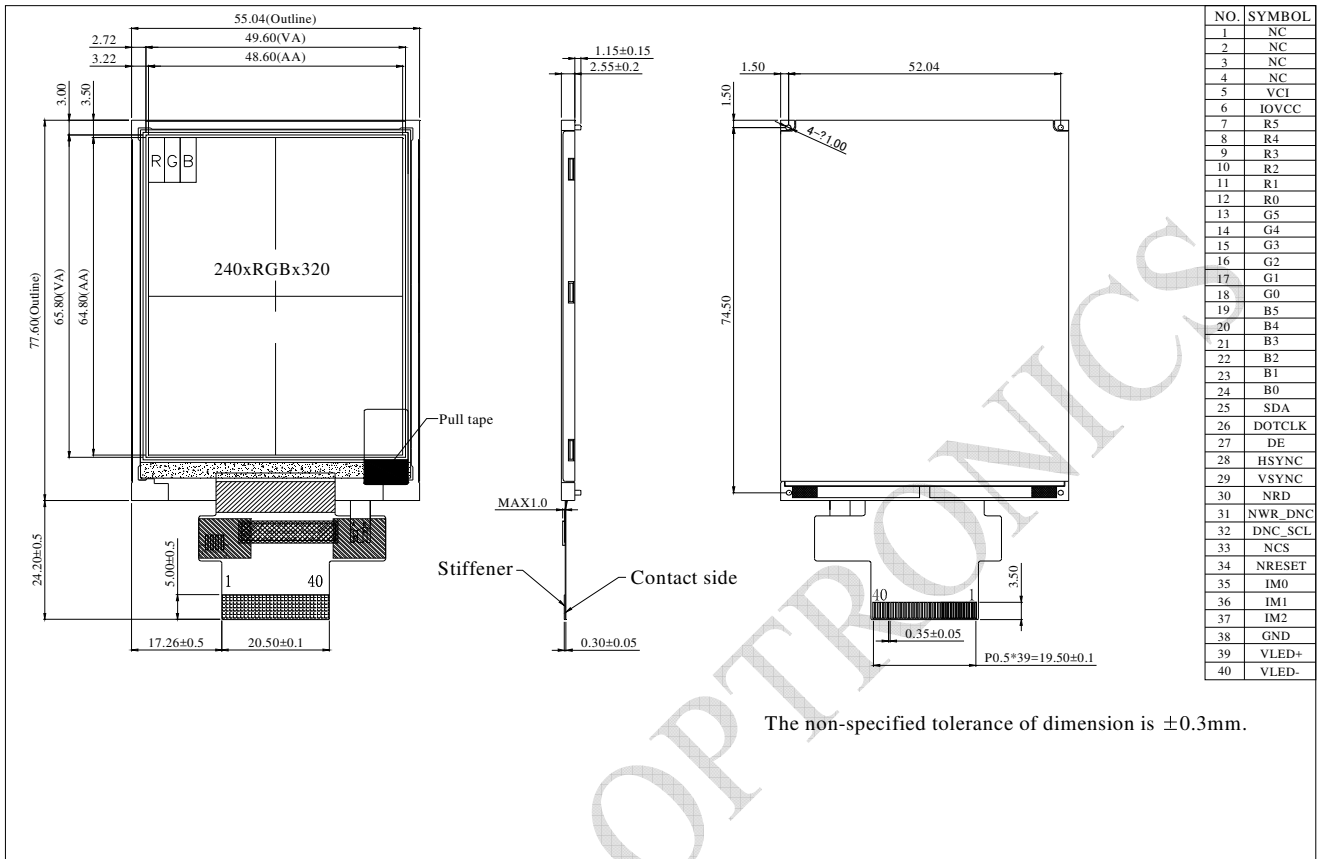
# Interface

## LCM PIN Definition

NO	Symbol	Function	I/O
1	NC	No connection	—
2	NC	No connection	—
3	NC	No connection	—
4	NC	No connection	—
5	VCI	Power supply(TYP: 2.8V).	P
6	IOVCC	Power supply(TYP:1.8V/2.8V).	P
7	R5	18-bit parallel bi-directional data bus for MCU system and RGB interface mode Fix to VSS level when not in use	I/O
8	R4		
9	R3		
10	R2		
11	R1		
12	R0		
13	G5		
14	G4		
15	G3		
16	G2		
17	G1		
18	G0		
19	B5		
20	B4		
21	B3		
22	B2		
23	B1		
24	B0		
25	SDA	Serial data input/output	I/O
26	DOTCLK	Data enable signal in RGB interface.	I
27	DE	A data ENABLE signal in RGB I/F mode	I
28	HSYNC	Horizontal synchronizing signal in RGB interface	I
29	VSYSN	Vertical synchronizing signal in RGB interface	I
30	NRD	Read enable pin I80 parallel bus system interface	I
31	NWR_DNC	NWR Write enable pin I80 parallel bus system interface	I

		DNC Command/parameter or display data selection pin in serial bus system interface																																													
32	DNC_SCL	DNC Command/parameter or display data selection pin in parallel interface SCL Serial data clock in serial bus system Interface	I																																												
33	NCS	Chip select signal	I																																												
34	NRESET	System Reset	I																																												
35	IM0	System interface select: <table border="1" data-bbox="467 566 1013 902"> <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>	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		I
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38	GND	Ground	P																																												
39	VLED+	Anode of LED backlight.	P																																												
40	VLED-	Cathode of LED backlight.	P																																												

# 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	Type	Max	Unit
Power supply voltage	VCI		2.5	2.8	3.3	V
Power supply voltage	IOVCC		1.65	2.8	3.3	V
Input high voltage	Vih		0.7IOVCC	-	IOVCC	V
Input low voltage	Vil		GND	-	0.3IOVCC	V
Output high voltage	Voh	IOL=-1.0mA	0.8 IOVCC	-	IOVCC	V
Output low voltage	Vol	IOL =1.0mA	GND	-	0.2 IOVCC	V
Current consumption	Ivci	-	-	5.5	8.25	mA

### LED driving conditions

Parameter	Symbol	Min	Typ	Max	Unit
LED current	—	—	120	—	mA
LED voltage	VLED+	5.5	6.0	6.5	V
LED Life Time	—	—	50000	—	Hr