



**RAYSTAR**

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## **RFJ320C-ALW-DNS**

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### **SPECIFICATION**

#### **General Specifications**

- Size: 3.2 inch
- Dot Matrix: 240 x RGB x 320(TFT) dots
- Module dimension: 55.04 (W) x 77.6 (H) x 2.65(D) mm
- Active area: 48.6 x 64.8 mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 6 o'clock
- Gray Scale Inversion Direction: 12 o'clock
- Backlight Type: LED, Normally White
- With /Without TP: With RTP
- Surface: Glare

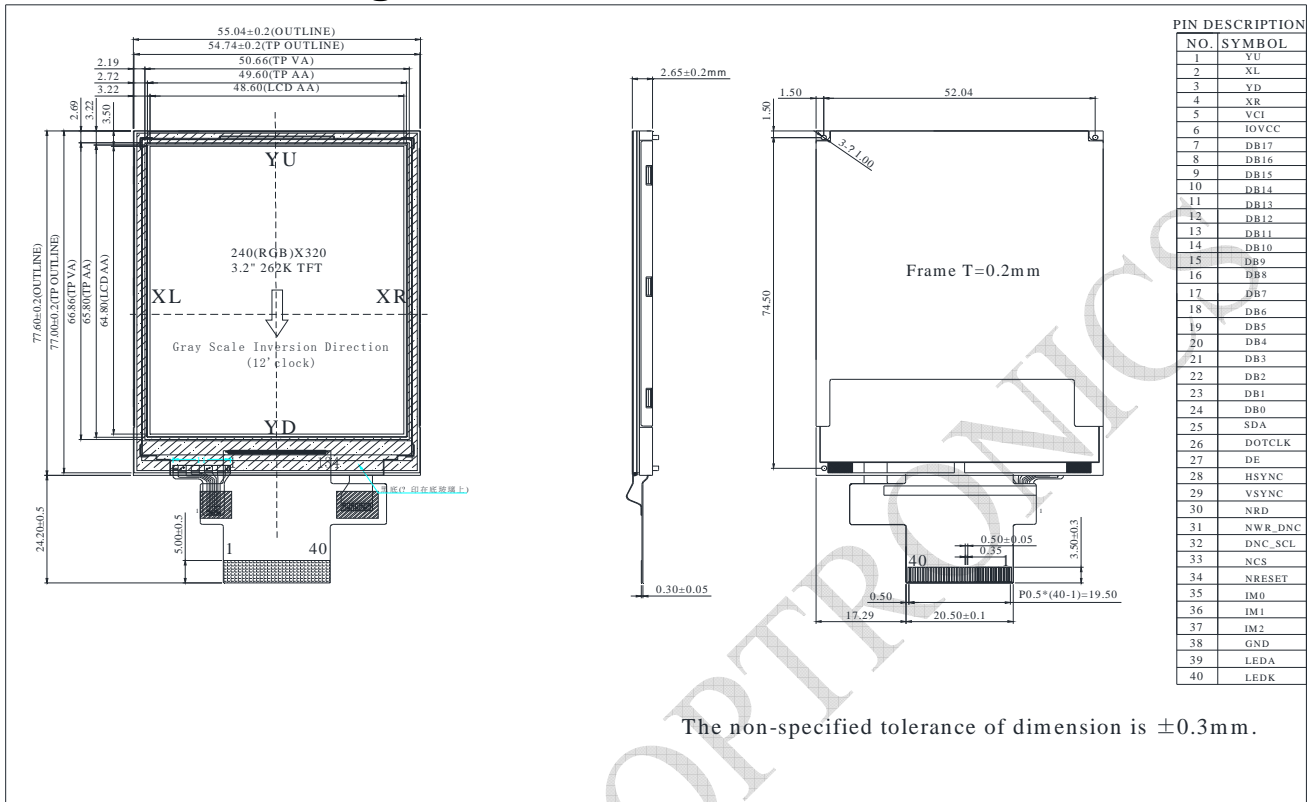
\*Color tone slight changed by temperature and driving voltage.

# Interface

## LCM PIN Definition

NO	Symbol	Function	I/O																																												
1	YU	Y up for touch panel	—																																												
2	XL	X left for touch panel	—																																												
3	YD	Y down for touch panel	—																																												
4	XR	X right for touch panel	—																																												
5	VCI	Power supply(TYP: 2.8V).	P																																												
6	IOVCC	Power supply(TYP:1.8V/2.8V).	P																																												
7-24	DB17~DB0	Data bus	I/O																																												
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	VSYNC	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 DNC Command/parameter or display data selection pin in serial bus system interface	I																																												
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" style="width: 100%; border-collapse: collapse;"> <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>Registers/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 16-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: I&lt;sup&gt;v&lt;/sup&gt;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: I&lt;sup&gt;v&lt;/sup&gt;OUT</td> </tr> </tbody> </table>	IM2	IM1	IM0	MCU-Interface Mode	DB Pin in use		Registers/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 16-bit bus interface I	D[7:0]	D[17:0]	1	0	1	3-wire 9-bit data serial interface I	SDA: I<sup>v</sup>OUT		1	1	0	4-wire 8-bit data serial interface I	SDA: I<sup>v</sup>OUT		I
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36	IM1																																														
37	IM2																																														
38	GND	Ground	P																																												
39	LEDA	Anode of LED backlight.	P																																												
40	LEDK	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	V <sub>DD</sub>		2.5	-	3.3	V
Power supply voltage	IOVCC		1.65		3.3	V
Input high voltage	V <sub>ih</sub>		0.7IOVCC	-	IOVCC	V
Input low voltage	V <sub>il</sub>		GND	-	0.3IOVCC	V
Output high voltage	V <sub>oh</sub>	I <sub>oh</sub> =-1.0mA	0.8 IOVCC	-	IOVCC	V
Output low voltage	V <sub>ol</sub>	I <sub>ol</sub> =1.0mA	GND	-	0.2 IOVCC	V
Current consumption	I <sub>dd</sub>	-	-	9	-	mA

### LED driving conditions

Parameter	Symbol	Min	Typ	Max	Unit
LED current	—	—	120	150	mA
LED voltage	V <sub>BL+</sub>	2.8	3.2	3.4	V
LED Life Time	—	—	20000	—	Hr