

# TFT DISPLAY SPECIFICATION



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**



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## 華凌光電股份有限公司



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### SPECIFICATION

**MODULE NO.: WF32DTLAJDNT0#**

### General Specifications

Item	Dimension	Unit
Size	3.2	inch
Dot Matrix	240 x RGB x 320(TFT)	dots
Module dimension	55.04 (W) x 77.6 (H) x 3.65(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	Resistive Touch Panel	
Surface	Glare	

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

# Absolute Maximum Ratings

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

# Electrical Characteristics

## 1. 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

## 2. LED driving conditions

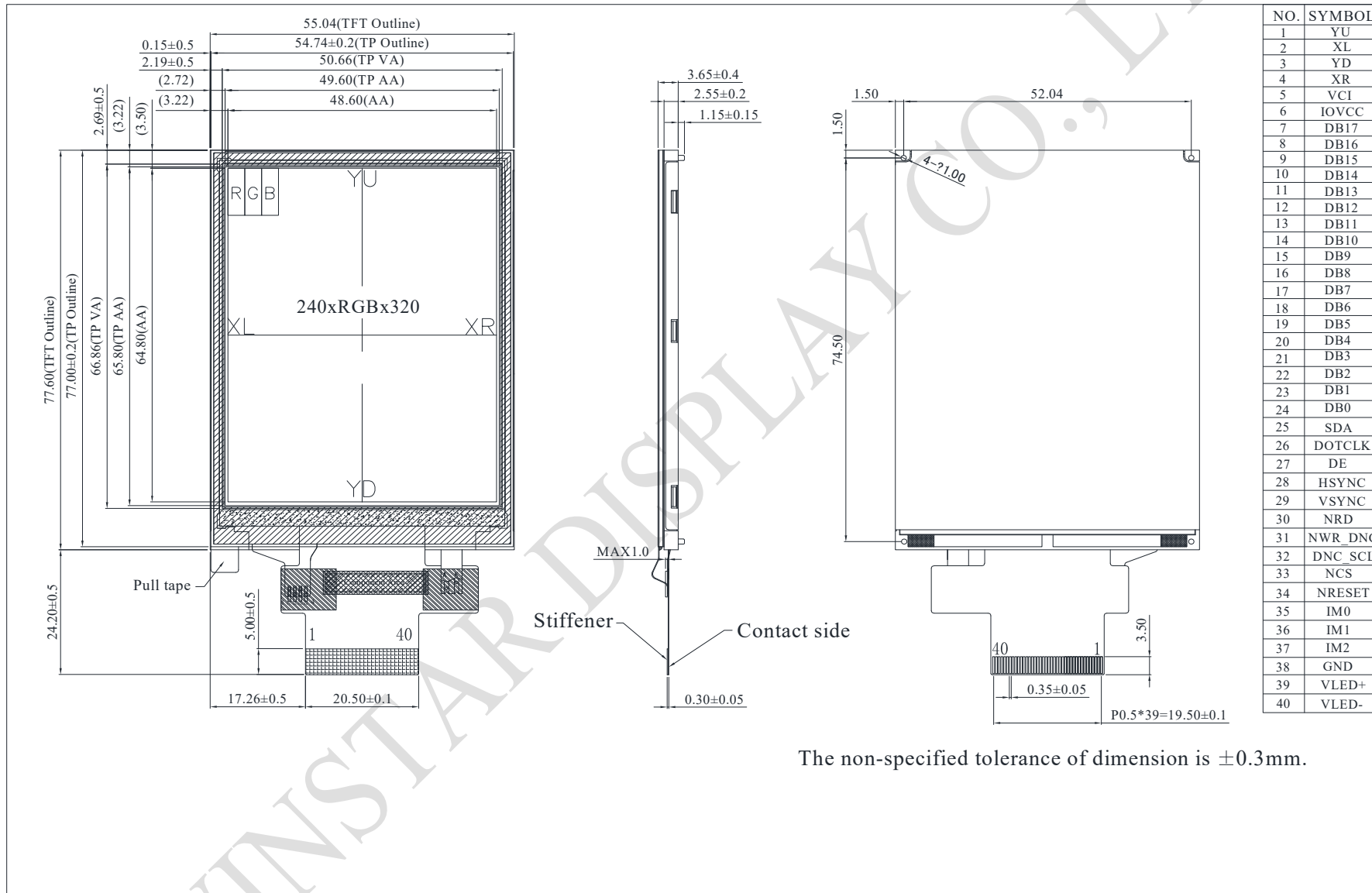
Parameter	Symbol	Min	Typ	Max	Unit
LED current	—	—	120	—	mA
LED voltage	VLED+	2.7	3.1	3.4	V
LED Life Time	—	—	50000	—	Hr

# 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:	I																																												
36	IM1																																														
37	IM2																																														
<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>				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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39	VLED+	Anode of LED backlight.	P																																												
40	VLED-	Cathode of LED backlight.	P																																												

# Contour Drawing



The non-specified tolerance of dimension is  $\pm 0.3\text{mm}$ .