

TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



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SPECIFICATION

MODULE NO.: WF28KTLAJDNT0#

General Specifications

Item	Dimension	Unit
Size	2.8	inch
Dot Matrix	240 x RGB x 320(TFT)	dots
Module dimension	50.0(W) x 69.2(H) x 3.48(D)	mm
Active area	43.2 x 57.6	mm
Pixel pitch	0.18 x 0.18	mm
LCD type	TFT, Normally White, Transmissive	
TFT Interface	SPI	
TFT Driver IC	ST7789V or Equivalent	
View Direction	6 o'clock	
Gray Scale Inversion Direction	12 o'clock	
Aspect Ratio	Portrait	
Backlight Type	LED, Normally White	
Touch Panel	Resistive Touch Screen	
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

Operating conditions

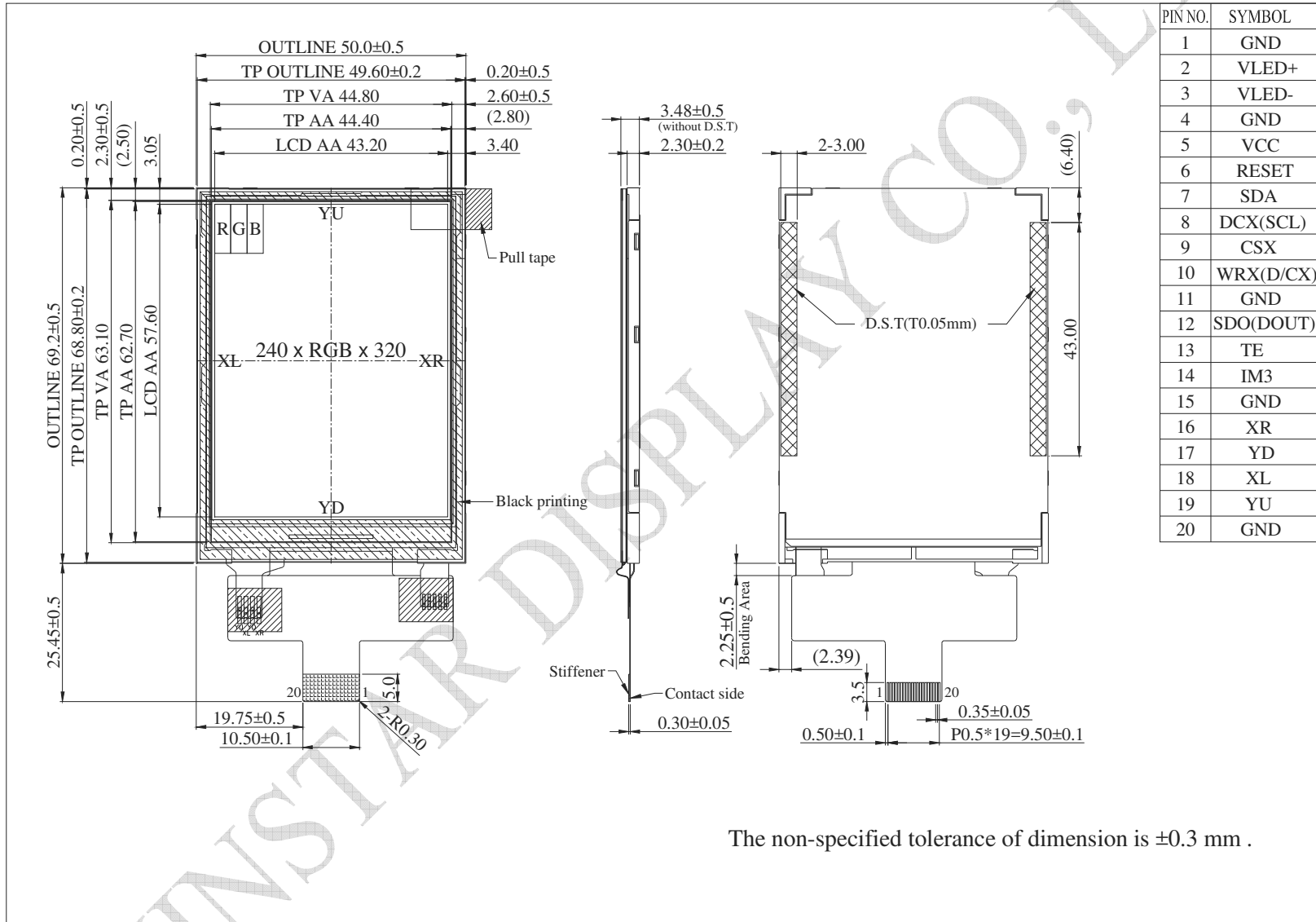
Item	Symbol	Min	Typ	Max	Unit
Supply Voltage For Analog	V _{CC}	2.4	3.3	3.6	V
Supply Current For LCM	I _{CC}	—	6.7	10.0	mA

Interface

LCM PIN Definition

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="539 1532 1394 1749"> <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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0	1	1	0	4-line 8bit serial I/F	SDA: in/out															
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15	GND	Ground																		
16	XR	Right electrode																		
17	YD	Bottom electrode																		
18	XL	Left electrode																		
19	YU	Top electrode																		
20	GND	Ground																		

Contour Drawing



PIN NO.	SYMBOL
1	GND
2	VLED+
3	VLED-
4	GND
5	VCC
6	RESET
7	SDA
8	DCX(SCL)
9	CSX
10	WRX(D/CX)
11	GND
12	SDO(DOUT)
13	TE
14	IM3
15	GND
16	XR
17	YD
18	XL
19	YU
20	GND

The non-specified tolerance of dimension is ±0.3 mm .