WINSTAR

WINSTAR Display Co.,Ltd.

華凌光電股份有限公司

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SPECIFICATION

MODULE NO.: WF22GN5AB2DNN0#

General Specifications

Item	Dimension	Unit
Size	2.13	inch
Dot Matrix	122 x 250	dots
Module dimension	27.07(W) x 56.2 (H) x 1.09 (D)	mm
Active area	23.668 x 48.50	mm
Pixel Pitch	0.194 x 0.194	mm
LCD type	Mono TFT (Reflective type)	
Viewing Angle	65/65/65/65	
Aspect Ratio	18:9	
Driver IC	ST7306 or or Equivalent	
Interface	8bit MCU/4-SPI/3-SPI	
Touch Panel	Without Touch Panel	
Surface	Anti-Glare	

*Color tone slight changed by temperature and driving voltage.

Absolute Maximum Ratings

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

Electrical Characteristics

1. Operating conditions:

Item	Symbol	Min	Typ	Max	Unit
Supply voltage for logic (Normal Mode)	VDDA	1.8	-	3.3	V
Supply voltage for logic (Normal Mode)	VDDI	2.8	-	3.3	V
Supply voltage for logic (1.8V Mode)	VDDA/ VDDI		1.8		V
Supply Current For LCM	I$_{VDDA}$	-	-	1	mA

Interface

LCM PIN Definition

Pin	Symbol	Function
1	VDDA	Power Supply (Analog)
2	VDDI	Power Supply (Digital)
3	GND	Ground
4	RSTB	Reset input pin. When RSTB is "L", internal initialization procedure is executed.
5	NC(VPP)	No connect (The programming power supply of the built-in NVM. Apply external power 7.5V here when programming (> 8mA for successful programming). If not used, left this pin open.)
6	A0	When using 8080. It determines whether the access is related to data or command. A0 = "H": Indicates that D[7:0] are display data; A0 = "L": Indicates that D[7:0] are control data.
7	NC(WR)	No connect (When using 8080 Write enable in 8080 parallel interface.)
8	NC(RD)	No connect (Read enable in 8080 interface. This pin is not used in serial interfaces and should be connected to VDDI.)
9	CSB	Chip select input pin. CSB="L": This chip is selected and the MPU interface is active. CSB="H": This chip is not selected and the MPU interface is disabled (D[7:0] are high impedance).
10	SCLK(D0)	When using 8-bit parallel interface: 8080 mode 8 bit bi-directional data bus. Connect to the data bus of 8-bit microprocessor. When CSB is "H", D[7:0] are high impedance. When using serial interface: 4-line SPI, 3-line SPI. D[7:4] : fix to "H" by VDDI. D[3:2] : serial output data (SDA_OUT). D[1] : serial input data (SDA_IN). D[0] : serial input clock (SCLK). D1 to D3 must be connected together (SDA) When CSB is "H", D[7:0] are high impedance.
11	SDA(D1)	
12	SDO(SDA/D2)	
13	SDO(SDA/D3)	
14	NC(D4)	
15	NC(D5)	
16	NC(D6)	
17	NC(D7)	
18	NC	No connect
19	NC(TE)	No connect (Tearing effect signal is used to synchronize MCU to frame memory writing. If not used, please let this pin open)
20	IF1	These pins select interface operation mode <table><tr><th>IF1</th><th>IF0</th><th>interface</th></tr><tr><td>L</td><td>L</td><td>8bit MCU</td></tr><tr><td>L</td><td>H</td><td>4-SPI</td></tr><tr><td>H</td><td>H</td><td>3-SPI</td></tr></table>
21	IF0	
22	GND	Ground

Contour Drawing
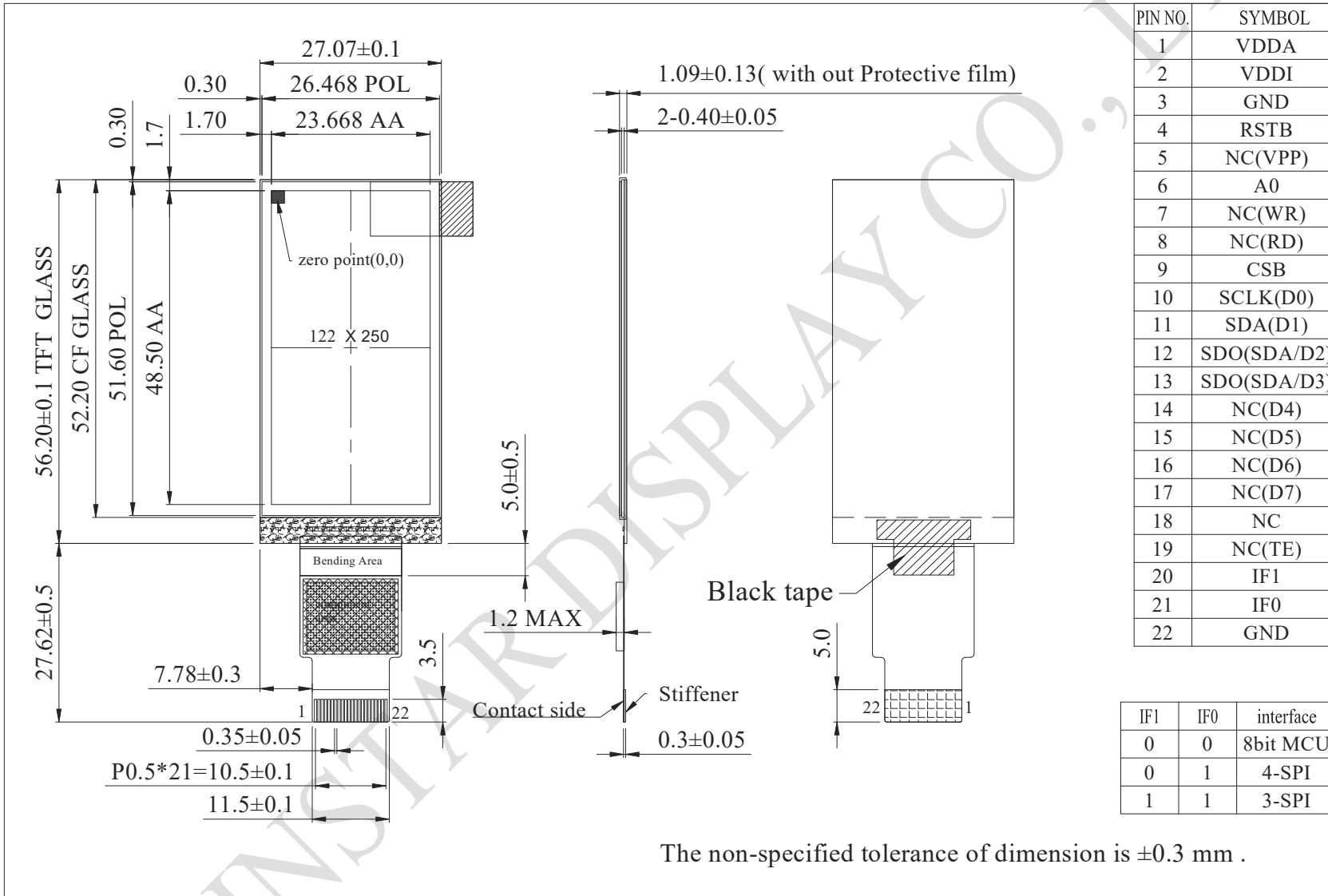
PIN NO.	SYMBOL
1	VDDA
2	VDDI
3	GND
4	RSTB
5	NC(VPP)
6	A0
7	NC(WR)
8	NC(RD)
9	CSB
10	SCLK(D0)
11	SDA(D1)
12	SDO(SDA/D2)
13	SDO(SDA/D3)
14	NC(D4)
15	NC(D5)
16	NC(D6)
17	NC(D7)
18	NC
19	NC(TE)
20	IF1
21	IF0
22	GND

IF1	IF0	interface
0	0	8bit MCU
0	1	4-SPI
1	1	3-SPI

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

27.07±0.1
26.468 POL
23.668 AA
0.30
1.70
0.30
1.7
56.20±0.1 TFT GLASS
52.20 CF GLASS
51.60 POL
48.50 AA
122 X 250
zero point(0,0)
1.09±0.13(with out Protective film)
2-0.40±0.05
5.0±0.5
Black tape
Bending Area
27.62±0.5
7.78±0.3
3.5
1.2 MAX
Stiffener
Contact side
5.0
1   22
22   1
0.35±0.05
P0.5*21=10.5±0.1
11.5±0.1
0.3±0.05