TFT DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.

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first FC components

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SPECIFICATION

MODULE NO.: WFN0128DA2#0P0-FC

General Specifications

Item	Dimension	Unit
Size	1.28	inch
Dot Matrix	240 x RGB x 240 (TFT)	dots
Module dimension	35.6 x 37.74 x 1.48	mm
Active area	32.4 x 32.4	mm
Pixel pitch	0.135 x 0.135	mm
LCD type	TFT, Normally Black, Transmissive	
Viewing Angle	85/85/85/85	
TFT Interface	8/9/16/18bit MCU 3/4SPI+16/18BIT RGB 3/4 SERIAL	
Backlight Type	LED, Normally White	
TFT Driver IC	GC9A01 or Equivalent	
Touch Panel	Without Touch Panel	
Surface	Anti-Glare	

*Color tone slight changed by temperature and driving voltage.

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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
Digital Supply Voltage	VCC	2.5	2.8	3.3	V
Digital interface supple Voltage	IOVCC	1.65	2.8	3.3	V
Normal mode Current consumption	ICC	--	6	12	mA
Level input voltage	VIH	0.7*IOVCC	--	IOVCC	V
	VIL	GND	--	0.3*IOVCC	V
Level output voltage	VOH	0.8*IOVCC	--	IOVCC	V
	VOL	GND	--	0.2*IOVCC	V

2. LED driving conditions

Item	Symbol	Min.	Typ.	Max.	Unit
LED current	-	-	40	-	mA
LED voltage	VLED+	2.8	3.0	3.2	V
LED Life Time	-	50000	-	-	Hr

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Interface

LCM PIN Definition

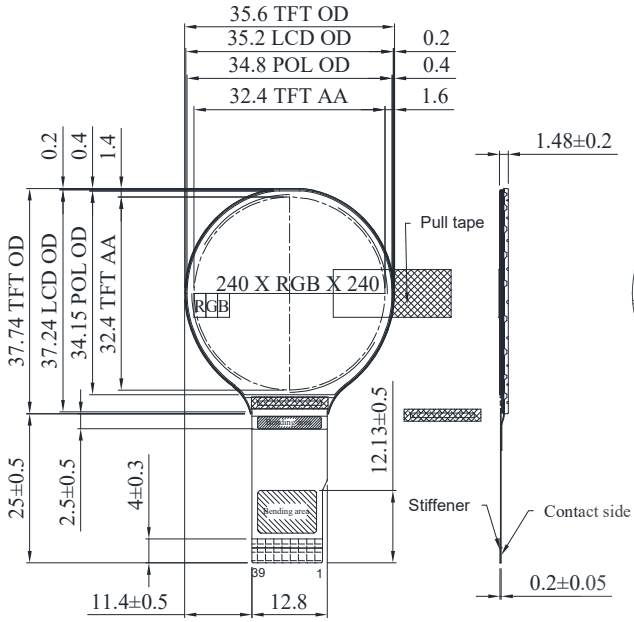
Pin No	Symbol	Function	I/O
1	VLED+	Anode pin of backlight	P
2	VLED*	Cathode pin of backlight	P
3	GND	Ground.	P
4	GND	Ground.	P
5	VCC	Supply voltage (2.5-3.3V).	P
6	IOVCC	Supply voltage (1.65-3.3V).	P
7	RESET	This signal will reset the device and must be applied to properly initialize the chip.	I
8	WR(SPI-RS)	-Write enable in MCU parallel interface. 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 IOVCC or GND.	I
9	CS	Chip select input pin (“Low” enable ,CSX). Fix this pin at IOVCC or GND when not in use.	I
10	RS(SPI-SCL)	-Display data/command selection pin in parallel interface.(D/CX) -This pin is used to be serial interface clock. (SCL) DC=’1’: display data or parameter. DC=’0’: command data. -If not used, please fix this pin at IOVCC or GND.	I
11	RD	Serves as a read signal and MCU read data at the rising edge. Fix this pin at IOVCC or GND when not in use.	I
12	PCLK	Dot clock signal for RGB interface operation. (DOTCLK) Fix this pin at IOVCC or GND when not in use.	I
13	DE	Data enable signal for RGB interface operation. (ENABLE) fix this pin at IOVCC or GND when not in use.	I
14	VSYNC	Frame synchronizing signal for RGB interface operation. fix this pin at IOVCC or GND when not in use.	I
15	HSYNC	Line synchronizing signal for RGB interface operation. fix this pin at IOVCC or GND when not in use.	I
16	TE	Tearing effect output pin to synchronize MPU to frame writing, activated by S/W command. When this pin is not activated, this pin is low. If not used, open this pin.	I
17	NC	No connection	O
18	SDA	The data is latched on the rising edge of the SCL signal. If not used, please fix this pin at IOVCC or GND level	I/O

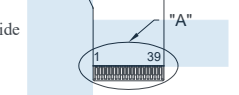
19-36	DB17-DB0	18-bit parallel bi-directional data bus for MCU system and RGB interface mode . 18-bit RGB DB0:BLUE LSB--DB5:BLUE MSB; DB6:GREEN LSB--DB11:GREEN,MSB; DB12:RED LSB--DB17:RED MSB. 16-bit RGB: DB1:BLUE LSB--DB5:BLUE MSB; DB6:GREEN LSB--DB11:GREEN,MSB; DB13:RED LSB--DB17:RED MSB. mode Fix to GND level when not in use	I/O
37	IM0	MPU Parallel interface bus and serial interface select If use RGB Interface must select serial interface. Fix this pin at IOVCC and GND.	I
38	IM1		
39	IM3		

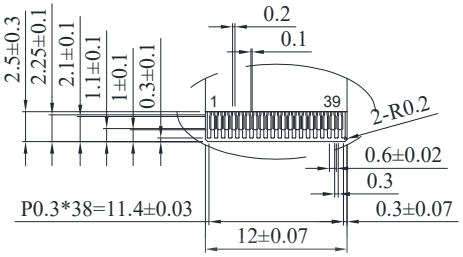
MCU interface SET for IM PINS

IM3	IM1	IM0	Interface Type	DB Pin in use
L	L	L	8080 MCU 8-bit bus interface	DB7-DB0
L	H	L	8080 MCU 16-bit bus interface	DB15- DB0
L	L	H	8080 MCU 9-bit bus interface	DB8- DB0
L	H	H	8080 MCU 18-bit bus interface	DB17- DB0
H	L	H	3-wire 9-bit data serial interface	SDA:In/Out
			2 data line serial interface	SDA:In/Out,DCX:In
H	H	H	4-wire 8-bit data serial interface	SDA:In/Out

Contour Drawing







Detail : "A"

Scale : 2/1

FH26-39S-0.3SHW

PIN No.	SYMBOL
1	VLED+
2	VLED-
3	GND
4	GND
5	VCC
6	IOVCC
7	RESET
8	WR(SPI-RS)
9	CS
10	RS(SPI-SCL)
11	RD
12	PCLK
13	DE
14	VSYNC
15	HSYNC
16	TE
17	NC
18	SDA
19	DB17
20	DB16
21	DB15
22	DB14
23	DB13
24	DB12
25	DB11
26	DB10
27	DB09
28	DB08
29	DB07
30	DB06
31	DB05
32	DB04
33	DB03
34	DB02
35	DB01
36	DB0
37	IM0
38	IM1
39	IM3

MCU interface SET for IM PINS.

IM3	IM1	IM0	Interface type	DB Pin in use
0	0	0	8080 MCU 8-bit bus interface	DB7-DB0
0	1	0	8080 MCU16-bit bus interface	DB15-DB0
0	0	1	8080 MCU 9-bit bus interface	DB8-DB0
0	1	1	8080 MCU18-bit bus interface	DB17-DB0
1	0	1	3-wire 9-bit data serial interface	SDA:In/Out
			2 data line serial interface	SDA:In/Out, DCX:In
1	1	1	4-wire 8-bit data serial interface	SDA:In/Out

NOTE:
1. Input Pin if not use, please connect to GND.
   Output Pin if not use, please empty.
2. If use RGB interface must select serial interface.

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

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