

## 1. General Description

### Description

1.14" TFT LCD is a 135RGBX240 dot-matrix TFT LCD module. This module is composed of a TFT LCD Panel, driver ICs, FPC and a Backlight unit.

### Features

NO.	Item	Contents	Unit
1	LCD Size	1.14	inch
2	Display Mode	Normally black	-
3	Resolution	135(H)RGB x240(V)	pixels
4	Pixel pitch	0.1101(H) x 0.1038(V)	mm
5	Active area	14.864(H) x 24.912(V)	mm
6	Module size	17.6(H) x 31.0(V) x1.6 (D)	mm
7	Pixel arrangement	RGB Vertical stripe	-
8	Interface	4 Line SPI	-
9	Display Colors	262K	colors
10	Drive IC	ST7789V3	-
11	Luminance(cd/m2)	400 (TYP)	Cd/m2
12	Viewing Direction	All View	Best image
13	Backlight	1 White LED	-
14	Operating Temp.	-20°C~ + 70°C	°C
15	Storage Temp.	-30°C~+ 80°C	°C
16	Weight	1.8	g



### 3. Pin Definition

FPC Connector is used for the module electronics interface.

NO.	Symbol	Description
1	NC	No Connect.
2	NC	No Connect.
3	SDA	SPI interface input/output pin.
4	SCL	This pin is used to be serial interface clock.
5	RS	Display data/command selection pin in 4-line serial interface.
6	RESET	This signal will reset the device ,Signal is active low.
7	CS	Chip selection pin ,Low enable ,High disable.
8	GND	Power Ground.
9	NC	No Connect.
10	VDD	Power Supply for Analog
11	LEDK	LED Cathode
12	LEDA	LED Anode
13	GND	Power Ground.

Note:

## 4. Electrical Characteristics

### Absolute Maximum Ratings

Parameter	Symbol	Min	MAX	Unit	Notes
Supply Voltage (I/O)	VDD	-0.3	4.6	V	
Analog Supply Voltage	VDDIO	-0.3	4.6	V	
Logic Input Voltage	VIN	-0.3	VDDIO+0.5	V	
Operation Temperature	Top	-20	70	°C	
Storage Temperature	Tst	-30	80	°C	

### Operating Conditions

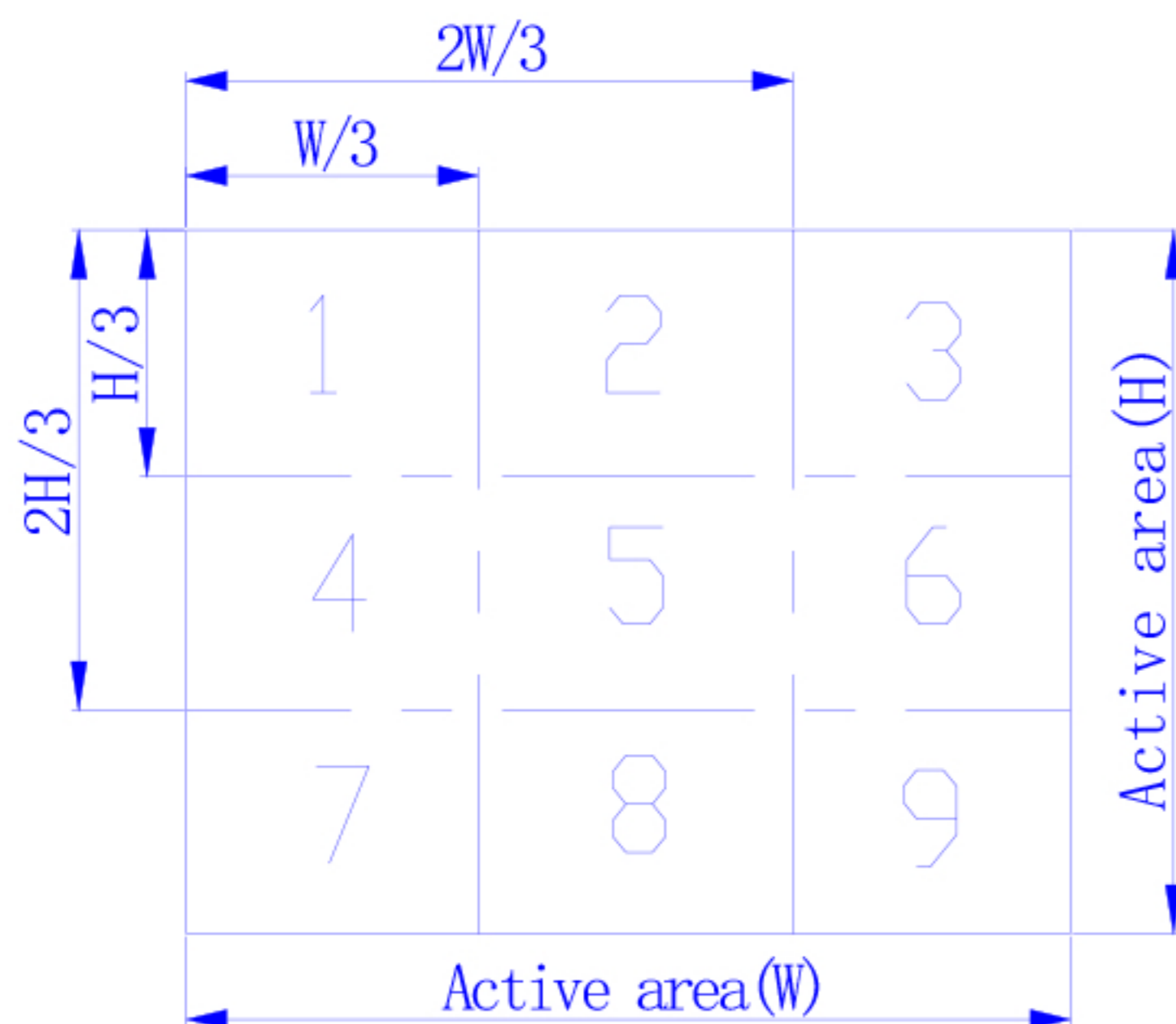
Parameter	Symbol	Min	TYP	MAX	Unit	Notes
System Voltage	VDD	2.5	2.8	3.3	V	
Gate Driver High Voltage	VGH	12.2	-	14.97	V	
Gate Driver Low Voltage	VGL	-12.5	-	-7.16	V	
Operating Current for V <sub>DD</sub>	I <sub>DD</sub>	-	8	10	mA	
Sleep_In Mode VDD	I <sub>dd</sub>	-	15	30	uA	
Sleep_In Mode VDDIO	I <sub>ddio</sub>	-	5	10	uA	

### Backlight Unit

Parameter	Symbol	Min	TYP	MAX	Unit	Notes
Voltage for LED backlight	VLED	2.9	3.0	3.1	V	
Current for LED backlight	ILED	-	20	30	mA	1 LED
Power Consumption	Pbl	-	60	93	mW	1
Brightness	L <sub>br</sub>	350	400	-	cd/m <sup>2</sup>	2
LED Life time	-	20000	-	-	hr	3

Note:

- Where ILED =20mA , VLED=3.0V , Pbl= ILED x VLED
- Uniform measure condition:
  - Measure 9 point ,Measure location is show below:
  - Uniform=(Min brightness/Max brightness)x100%
  - Best Contrast.



- The environmental conducted under ambient air flow ,at  $T_a=25\pm 2^\circ\text{C}$ ,  $60\%RH\pm 5\%$