



福建福盛达电子有限公司

Fujian Fu sheng da Electric Co. , LTD

APPROVAL SHEET

承 认 书

Customer 客户名称	
Part NO. 产品型号	FSD024B7074-B
Product type 产品内容	Mode: Transmissive type .NormallyBlack. TFT LCD Module LCD Module: Graphic240RGB*320Dot-matrix
Remarks 备注栏	☐ APPROVAL FOR SEPCIFICATIONS ONLY ☒ APPROVAL FOR SEPCIFICATIONS AND SAMPLE
Signature by Customer: 客户确认签章	

LEAGEND LCM R&D CENTER:

Technical Department: 研发部门	Quality Assurance Department 质量保证部门	Approved by: 核准

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深圳地址: 深圳市宝安区西乡街道西乡奋达科技创新园D栋五楼



1. GENERAL SPECIFICATION

- 1 Resolution 分辨率: 240xRGBx320
- 2 Module Size 模组尺寸: 42.72x860.26x2.15mm
- 3 Panel Active Area 可视区域: 36.72(H)x48.96(V)mm
- 4 Pixel Arrangement 像素排列: RGB
- 5 Viewing Direction 视角: ALL o'clock
- 6 DriverIC 驱动芯片: ST7789P3
- 7 Interface 接口方式: 3SPI+RGB6Bit
- 8 Light Source 背光源: 6 die White side LED
- 9 NTSC 色彩饱和度: 70% (TYP)
- 10 Contrast Ratio 对比度: 1200
- 11 Luminance 亮度: TBD
- 12 Number of Colors 颜色数量: 16.7M
- 13 Display Mode 显示模式: Normally Black
- 14 Panel Type 面板类型: TFT

2. MAXIMUM ABSOLUTE LIMIT

Item	Symbol	Standard value	Unit
Power supply voltage for logic	VCC	-0.3~+6	V
	VDDI	-0.3~+4.5	V
Operating temperature	Topr	-20~+70	°C
Storage temperature	Tstg	-30~+80	°C

Note: Voltage greater than above may damage the module All voltages are specified relative to VSS=0V

3. ELECTRICAL CHARACTERISTICS.

DC Characteristics

Item	Symbol	Min	Typ	Max	Unit	Test condition
Supply voltage for logic	V _{CC}	2.4	2.8	3.3	V	-
Supply voltage for logic	IOV _{CC}	1.65	1.8	3.3	V	
Backlight voltage	V _{BL}	2.8	3	3.2	V	I _{BL} =120mA

4. Outline

REV.		DESCRIPTION OF MODIFY		MODIFY BY:		DATE	
A0		1'ST DESIGN					

PIN Assignment	
NO.	SYMBOL
1	LEDA
2	LEDK
3	TE
4	D5
5	D4
6	D3
7	D2
8	D1
9	D0
10	GND
11	SDA
12	CLK
13	DE
14	HS
15	VS
16	SCL
17	CS
18	RESET
19	GND
20	IOVCC
21	VCC
22	GND

Display Type		LCM Luminance		TBD	
Normally BLACK		Backlight		White Color	
Number of pixels		240RGB*320		IF:80MA, VF:2.8-3.2V	
Viewing Direction		ALL 0° clock		-20°C-70°C	
Drive IC		ST7789P3		-30°C-80°C	
LCD manufacture		BOE 2.41 IPS		YES	
Interface		RGB 6BIT		±0.2	

UNITS:MM		SCALE: FIT		DESIGNED BY:		CHECKED BY:		APPROVED BY:	
SHEET: 1 OF 1		UNIT: MM		DATE					

福建福盛达电子有限公司		LCM NO.:FSD24B7074-B	
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Display Type		TFT		LCM Luminance		TBD	
Normally BLACK		Backlight		White Color		IF:80MA, VF:2.8-3.2V	
Number of pixels		240RGB*320		Operating temperature		-20°C-70°C	
Viewing Direction		ALL 0° clock		Storage temperature		-30°C-80°C	
Drive IC		ST7789P3		RoHS		YES	
LCD manufacture		BOE 2.41 IPS		Unspecified Tolerance		±0.2	
Interface		RGB 6BIT					

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5.PIN DESCRIPTION.

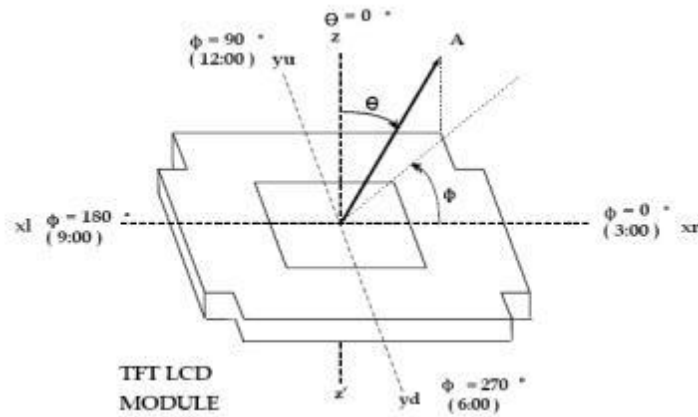
Pin No.	Symbol	Function
1	LEDA	Anode of LED Backlight
2	LEDK	Cathode of LED Backlight
3	TE	Tearing effect output pin to synchronize MPU to frame writing.
4-9	DB5-DB0	RGB data
10	GND	Ground
11	SDA	Serial data input pin
12	CLK	Dot clock signal for RGB interface operation.
13	DE	Data enable signal for RGB interface operation
14	HS	Line synchronizing signal for RGB interface operation
15	VS	Frame synchronizing signal for RGB interface operation
16	SCL	Serial clock input pin
17	CS	Chip selection signal pin
18	RESET	Reset Signal input pin
19	GND	Ground
20	IOVCC	Power supply for interface logic circuits(1.65~3.3V)
21	VCC	Power supply for analog circuit blocks(2.6~3.3V)
22	GND	Ground



6. LCM Optical Characteristics

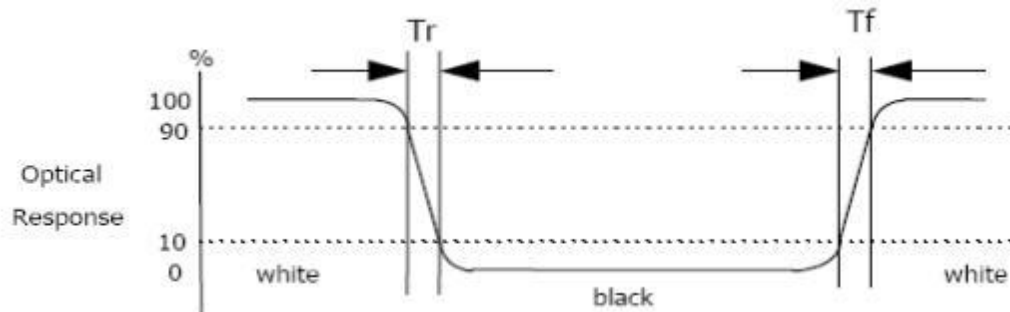
Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle Range 视角	Left	θ_L	CR>10	80	85		degree	
	Right	θ_R		80	85			
	Top	θ_T		80	85			
	Bottom	θ_B		80	85			
Contrast Ratio 对比度		CR	$\theta=\phi=0^\circ$	900	1200			without APF Polarizer
Transmittance		Tr.		4.0	4.7		%	
Color Chromaticity (CIE1931) 色坐标	White	Wx		0.628	0.658	0.688		
		Wy		0.308	0.338	0.368		
	Red	Rx		0.252	0.282	0.312		
		Ry		0.59	0.62	0.65		
	Green	Gx		0.104	0.134	0.164		
		Gy		0.107	0.137	0.167		
	Blue	Bx		0.278	0.308	0.338		
		By		0.309	0.339	0.369		
Response Time		Ton+Toff	$\theta=\phi=0^\circ$	-	35	40	ms	

7. LCM Viewing Angle



Viewing angle is the angle at which the contrast ratio is greater than 10. The angles are determined for the horizontal or x axis and the vertical or y axis with respect to the z axis which is normal to the LCD surface.

8. Response time



Response time is the time required for the display to transition from white to black (Rising time, T_r) and from black to white (Falling time, T_f) for additional information.



9. Reliability Test Items

Test Item 测试项目	Test Condition 测试条件	Test result determinant gist 实验结果判定
高温存储	80±3°C, 96H;	试验结束后,已测试的LCD 样品必须在室内正常温湿度环境下放置2~4个小时以上才能进行功能和外观检查, 样品不允许有以下缺陷: 1.模块中有气泡; 2.; 不显示; 3; 玻璃破碎; 4.需要满足模块电气性能。
低温存储	-30±3°C, 96H;	
高温运行测试	70±3°C, 96H;	
低温运行测试	-20±3°C, 96H;	
高温高湿	50°C±3°C,90%±3%RH, 120H;	
冷热冲击	-20°C/0.5h~25°C/10MIN~+70°C/0.5h for a total 10 cycles;	
静电测试	±2KV, Human Body Mode, 150pF/330Ω; ±8KV, Air Mode, 150pF/330Ω;	
震动测试	Random vibration , 1. 5.0Hz,0.01g ² /Hz,0.0dB/Oct 2.100.0Hz,0.01g ² /Hz,-0.126xE+02dB/Oct 3. 300.0Hz, 0.0001g ² /Hz, z axial 30 minutes,-z axial 10 minutes, x axial 10 minutes, y axial 10 minutes.	
Contact discharge	±2kV,±4kV to each points @ 10 discharges with +/- polarity (150pF, 330Ω),display power	
Mechanical Drop (with carton)	Height: 61cm 1 corner, 3edges, 6surfaces	

Remark: 注意:

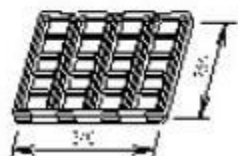
- 1:每个被测试的模块只能用于其中的一个测试项目。
2. 每个测试项目的样品数量为2片。
- 3.故障判断标准:基本规格,电气特性,机械特性,光电特性。



10. Packing Method



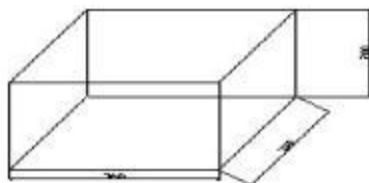
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