

Product
specifications

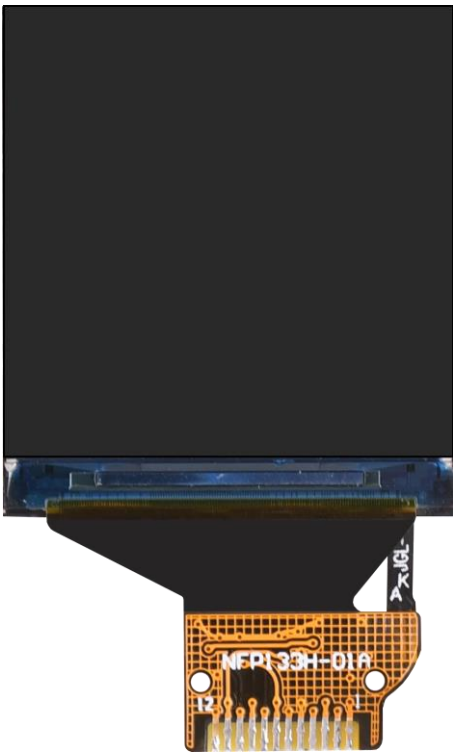
ATK-MD0130 V2.0 裸屏规格书

ATK-MD0130 V2.0

产品规格书

ALIENTEK

广州市星翼电子科技有限公司



修订历史

版本	日期	原因
V1.0	2019/1/7	第一次发布
V1.1	2021/8/10	更换屏幕厂家

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1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Type	240(R+G+B) * 240 Dots
LCD Type	a-Si TFT, Positive, Transmissive
Viewing Direction	All View
Backlight	2-LED White Color
Interface	SPI interface
Controller/driver IC	ST7789V

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	26.60 (L) x29.52(W) x 2.10 (T)	mm
Viewing Area	23.9 (L) x23.9 (W)	mm
Active Area	23.4(L) x 23.4(W)	mm
Pixel pitch	0.0975 (L) x 0.0975 (W)	mm

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min	Max	Unit
Power Supply Voltage	V _{DD}	-	-0.3	4.6	V
LCD Driver Supply Voltage	V _{GH-VSS}	-	-0.3	15.5	V
Input voltage	V _{in}		-0.3	4.6	V
Operating Temperature	T _{OP}	-	-20	+70	°C
Storage Temperature	T _{ST}	-	-30	+80	°C
Storage Humidity	H _D	T _a < 40 °C	-	90	%RH

1.4 DC Electrical Characteristics

 $V_{DD} = 2.4 \sim 3.3V$, $V_{SS} = 0V$, $T_a = 25^\circ C$

Item	Symbol	Conditon	Min	Type	Max	Unit
Logic Supply Voltage	V_{DD}	-	2.4	2.8	3.3	V
“H” Input Voltage	V_{IH}	-	$0.8V_{DD}$	-	V_{DD}	V
“L” Input Voltage	V_{IL}	-	V_{SS}	-	$0.2V_{DD}$	V
“H” Output Voltage	V_{OH}	-	$0.8V_{DD}$	-	V_{DD}	V
“L” Output Voltage	V_{OL}	-	V_{SS}	-	$0.2V_{DD}$	V
Supply Current	I_{DD}	$V_{DD} = 2.8V$	-	4	6	mA

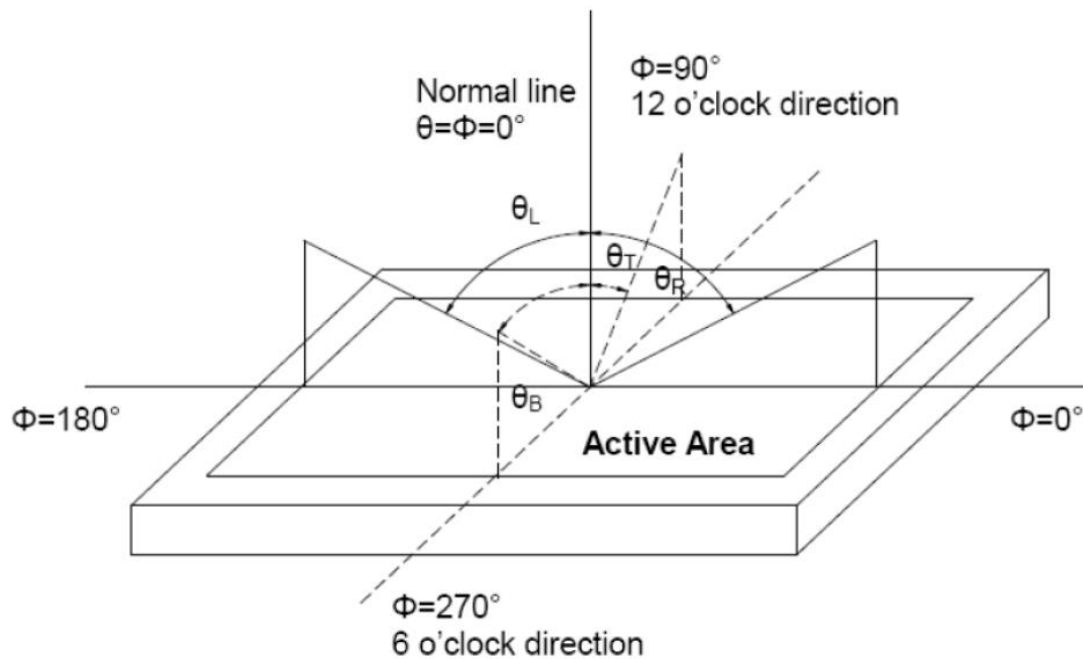
1.5 Optical Characteristics

 $T_a = 25^\circ C$

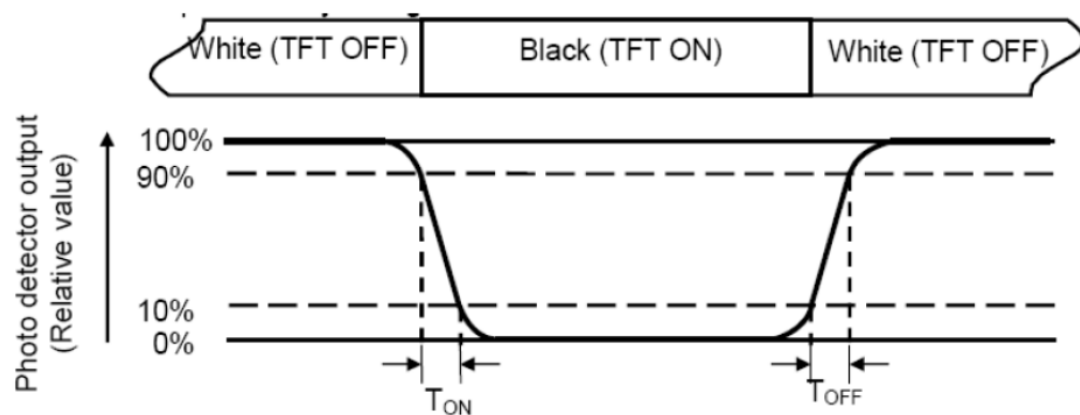
Item	Symbol	Conditions	Min	Type	Max	Reference
View Angle	θT	$C > 10^\circ, \phi = 0^\circ$	--	80	--	Noto 2
	θB		--	80	--	Noto 2
	θL		--	80	--	Noto 2
	θR		--	80	--	Noto 2
Contrast Ratio	C	$\theta = 0^\circ, \phi = 0^\circ$	--	800	--	--
Response Time	T_{on}	$25^\circ C$	--	30ms	--	Note 4
	T_{off}					
Luminance	B	$\theta = 0^\circ, \phi = 0^\circ$	--	400	-	cd/m ²
Uniformity	White	$\theta = 0^\circ, \phi = 0^\circ$	--	80	-	%
Color Filter Chromacicity	Red	XR	$\theta = 0^\circ, \phi = 0^\circ$	± 0.02	0.624	
		YR			0.329	
	Green	XG			0.288	
		YG			0.522	
	Blue	XB			0.136	
		YB			0.137	
	White	XW			0.302	
		YW			0.325	

Note 2: Definition of viewing angle range and measurement system.

viewing angle is measured at the center point of the LCD by CONOSCOPE(ergo-80).

**Note 4: Definition of Response time**

The response time is defined as the LCD optical switching time interval between "White" state and "Black" state. Rise time (T_{ON}) is the time between photo detector output intensity changed from 90% to 10%. And fall time (T_{OFF}) is the time between photo detector output intensity changed from 10% to 90%.



1.6 Backlight & LED Characteristics

Maximum Ratings

Item	Symbol	Conditions	Min	Max	Unit
Forward Current	IF	Ta=25℃	-	20(1 LED)	Ma
Reverse Voltage	VR	Ta=25℃	-	5	V
Power Dissipation	PO	Ta=25℃	-	100	mW
Operating Temperature	Top	-	-20	70	℃
Storage Temperature	TST	-	-30	80	℃
Solder Temp. for 3 Seconds	-	-	-	260	℃

Electrical / Optical Characteristics

VSS = 0V, Ta =25℃

Item	Symbol	Conditions	Min	Type	Max	Unit
Forward Current	VF	IF=15mA	--	3.2	--	V
Reverse Voltage	IR	VR=5V	-	-	50	uA
Average Brightness (without LCD)	IV	IF=15mA	-	-	-	cd/m ²
CIE Color Coordinate (without LCD)	X	IF=15mA	0.26	-	0.32	-
	Y		0.27	-	0.33	
Color	WHITE					

2. MODULE STRUCTURE

2.1 Interface Pin Description

NO.	SYMBOL	Description	I/O
1	GND	GND	Power supply
2	LEDK	LED backlight input	Power supply
3	LEDA	LED anode	Power supply
4	VDD	Power Supply	Power supply
5	GND	GND	Power Ground
6	GND	GND	Power Ground
7	D/C	Display data/command selection pin Low:command Hight:data	I
8	CS	Chip Select Pin Low:enable;Hight:disable	I
9	SCL	SPI Clock	I
10	SDA	SPI Data input/output	I/O
11	RESET	Reset Low:enable Hight:disable	RESET
12	GND	GND	Power Ground

2.2 Timing Characteristics

Please refer to ST7789V DATASHEET

2.3 Display Command

Please refer to ST7789V DATASHEET



4. 联系方式

1. 购买地址:

官方店铺: <https://openedv.taobao.com/>

2. 资料下载

下载地址: <http://www.openedv.com/thread-105197-1-1.html>

3. 技术支持

公司网址: www.alientek.com

技术论坛: www.openedv.com

传真: 020-36773971

电话: 020-38271790

