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Product Specification

8.0" COLOR TFT-LCD MODULE

MODEL NAME: C080EAT02.0

< > Preliminary Specification

< ◆ > Final Specification

Note: The content of this specification is subject to change.

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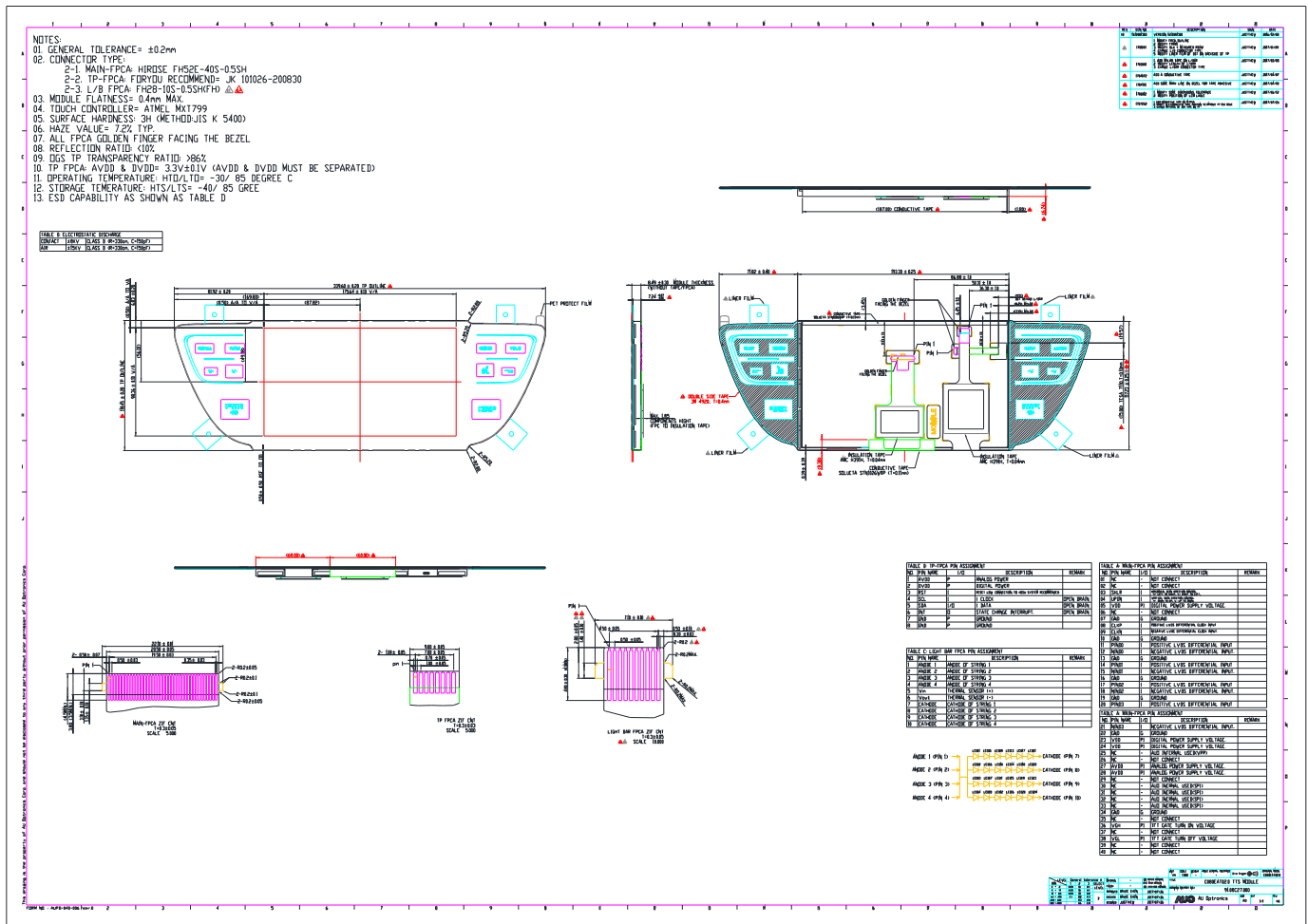
A. Physical Specifications
1. TFT LCD Panel

NO.	Item	Unit	Specification	Remark
1	Display Resolution	dot	1280(H)x 720RGB(V)	
2	Visual Area (VA)	mm	175.64 x 98.36	
3	Screen Size	inch	8.0(Diagonal)	
4	Dot Pitch	μm	138	
5	Color Configuration	–	R. G. B. Stripe	Note. 2
6	Color Depth	–	16.7 M colors	
7	Overall Dimension	mm	339.60(H) × 118.45(V) × 8.49(T)	Note. 1
8	Weight	g	275 (TBD)	
9	Display Mode	–	Normally Black	
10	Surface Treatment	–	AG	



Outline Dimension

2. TFT-LCD Module





Electrical Specifications

3. TFT LCD Panel Pin Assignment

Recommended Connector: HIROSE FH52E-40S-0.5SH

No.	Pin Name	I/O	Description	Remarks
1	NC		Dummy	
2	NC		Dummy	
3	SHLR	I	Horizontal scan direction control. “H” Left to Right; “L” Right to Left.	Note1
4	UPDN	I	Vertical scan direction control. “H” Down to Up; “L” Up to Down.	Note1
5	VDD	PI	Digital power supply voltage.	
6	NC		Dummy	
7	GND	G	Ground.	
8	CLKP	I	Positive LVDS differential clock input.	
9	CLKN	I	Negative LVDS differential clock input.	
10	GND	G	Ground.	
11	PIND0	I	Positive LVDS differential input.	
12	NIND0	I	Negative LVDS differential input.	
13	GND	G	Ground.	
14	PIND1	I	Positive LVDS differential input.	
15	NIND1	I	Negative LVDS differential input.	
16	GND	G	Ground.	
17	PIND2	I	Positive LVDS differential input.	
18	NIND2	I	Negative LVDS differential input.	
19	GND	G	Ground.	
20	PIND3	I	Positive LVDS differential input.	
21	NIND3	I	Negative LVDS differential input.	
22	GND	G	Ground.	
23	VDD	PI	Digital power supply voltage.	
24	VDD	PI	Digital power supply voltage.	
25	NC/VPP		Dummy	
26	NC		Dummy	
27	AVDD	PI	Analog power supply voltage.	
28	AVDD	PI	Analog power supply voltage.	
29	NC		Dummy	
30	NC/CS		Dummy	
31	NC/SCL		Dummy	
32	NC/SDO		Dummy	
33	NC/SDI		Dummy	



34	GND	G	Ground.	
35	NC		Dummy	
36	VGH	PI	Positive power supply voltage for TFT.	
37	NC		Dummy	
38	VGL	PI	Negative power supply voltage for TFT.	
39	NC		Dummy	
40	NC		Dummy	

I: Digital signal input, O: Digital signal output, G: GND, PI: Power input

Note1



Fig. 2. Input Timing Diagram

Parameter		Symbol	Min.	Typ.	Max.	Unit.	Remark
CLK Frequency		F_{CLK}		71.2		MHz	
HSYNC	Period	T_H		1540		CLK	
	Horizontal display area	T_{HD}	1280			CLK	
	Blanking	$T_{HBP} + T_{HFP}$		260		CLK	
VSYNC	Period	T_V		770		HS	
	Vertical display area	T_{VD}	720			HS	
	Blanking	$T_{VBP} + T_{VFP}$		50		HS	

4. Absolute Maximum Ratings

Items	Symbol	Values		Unit	Condition
		Min.	Max.		
Power Voltage	VDD	-0.5	5	V	GND = 0V
	AVDD	-0.5	15	V	GND = 0V
	VGH	-0.3	40	V	GND = 0V
	VGL	-20	0.3	V	GND = 0V
	VGH-VGL	-0.3	40	V	GND = 0V
	TP_AVDD	-0.3	3.6	V	GND = 0V
	TP_DVDD	-0.3	3.6	V	GND = 0V
TP signal voltage	-	-0.3	TP_DVDD+0.3	V	GND = 0V
Operation Temperature	Topa	-30	85	°C	Ambient
Storage Temperature	Tstg	-40	95	°C	Ambient

Note: Functional operation should be restricted under normal ambient temperature.

5. DC Electrical Characteristics

The following items are measured under stable condition and suggested application circuit.

a. Power Specification

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Power Supply	VDD	3	3.3	3.6	V	
	IVDD	-	40	54	mA	
	AVDD	13.3	13.5	14	V	
	IAVDD	-	17	50	mA	
	VGH	16.8	18	19.1	V	
	IVGH	-	1	2	mA	
	VGL	-9	-8	-7	V	
	IVGL	-	1	2	mA	



	TP_AVDD	3.14	3.3	3.47	V	
	TP_IAVDD	-	5	8	mA	One finger touch
	TP_DVDD	3.14	3.3	3.47	V	
	TP_IDVDD		6	9	mA	One finger touch



b. Signal DC Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Notes
Input signal voltage	V_i	-0.3	-	VDD	V	
Input high level voltage	V_{IH}	0.7VDD	-	VDD	V	
Input low level voltage	V_{IL}	GND	-	0.3VDD	V	
Differential input high threshold	R_{XVTH}	0.2	-	-	V	Note 1
Differential input low threshold	R_{XVTL}	-	-	-0.2	V	Note 1
Input voltage range (singled-end)	R_{XVIN}	0	-	(VDD-1.2)	V	Note 1
Input differential voltage	$ V_{ID} $	0.2	-	0.6	V	Note 1
Differential Input Common Mode Voltage	R_{XVCM}	$ V_{ID} /2$	-	(VDD-1.2 - $ V_{ID} /2$)	V	Note 1
TP Input Signal Voltage	V_{IH}	0.7*DVDD	-	DVDD	V	
	V_{IL}	-0.3	-	0.3*DVDD	V	
TP Output Signal Voltage	V_{OL}	0	-	0.2*DVDD	V	
	V_{OH}	0.8*DVDD	-	DVDD	V	

Note 1: LVDS interface signal DC characteristic

6. AC Electrical Characteristics

a. Input AC characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
VDD power on slew time	T_{POR}	2	-	-	ms	From 0V to 90% VDD



Fig. 6. VDD timing diagram

b. Differential signal AC characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Clock frequency	R_{XFCLK}	69.5	71.15-	75.5	MHz	
Input Data Skew Margin	T_{RSKM}			400	ps	

Fig. 7 LVDS AC characteristics diagram



Power on timing:

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	2	--	--	ms
T2	1	--	--	ms
T3	0	--	--	ms
T4	16			ms
T5	0	--	--	ms
T6	0	--	--	ms
T7	100	--	--	ms
T8	--	--	80	ms
T9	--	--	10	ms
T10	90	--	--	ns
T11	90	--	--	ms

C.

Power off timing:

Parameter	Value			Units
	Min.	Typ.	Max.	
T1	90	100	--	ms
T2	--	--	40	ms
T3	50	--	--	ms
T4	0	--	--	ms

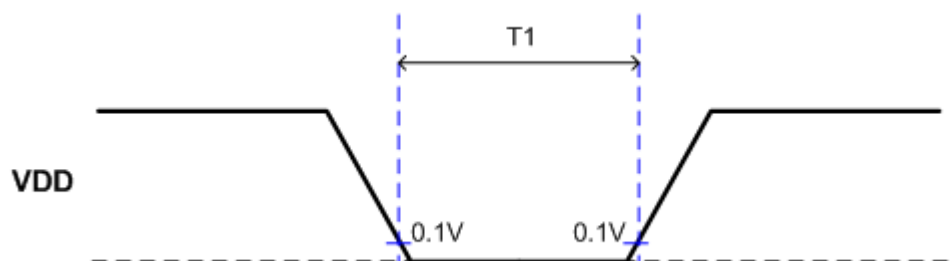
Note1: VGH must be maintained at more than 70% when VDD falling to 2V.

Note2: VGL must be maintained at less than -5V when VDD falling to 2V.

d. VDD off to on timing

Parameter	Value			Unit	Remark
	Min.	Typ.	Max.		
T1	1		--	s	Note 1

*Note 1 : Before VDD turns ON, please make sure that AVDD; VGH; VGL; are all below intensity of 0.1V.





F. Optical specifications (Note 1, 2)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Response	Tr+Tf	$\theta=0^\circ$; 25°C	-	-	20	ms	Note 3
Contrast ratio	CR	$\theta=0^\circ$	800		-		Note 4, 5, 6
Viewing Angle Top Bottom Left Right		$CR \geq 10$	70 70 70 70	80 80 80 80	- - - -	deg.	Note 7, 8
Brightness	Y_L	$\theta=0^\circ$	650		-	cd/m ²	Note 1,2,9

G. Reliability Test Items(Note 1~3)

No.	Test items	Conditions	Remark
1	High temperature storage	Ta= 95 °C	
2	Low temperature storage	Ta= -40 °C	
3	High temperature operation	Ta= 85 °C	
4	Low temperature operation	Ta= -30 °C	
5	High temperature and high humidity	Ta= 60 °C, 90 % RH	Operation
6	Heat shock	-30 °C ~ 85 °C / 100 cycles 1 Hrs/cycle	Non-operation
7	Shock	100 G, 6 ms, $\pm X$, $\pm Y$, $\pm Z$ 3 times for each direction	
8	Electrostatic Discharge	Contact = ± 8 kV, class B Air = ± 15 kV, class B	IEC61000-4-2