



深圳市宇锡科技有限公司

SHENZHEN YOUSEE TECHNOLOG CO., LTD

DISPLAY SPECIFICATION

Product NO: (产品型号) YX08025252481HB

Customer : (客 户) _____

APPROVED BY CUSTOMER 客户签署栏	
Approved by 审核	Remark 备注

APPROVED BY YOUSEE 宇锡签署栏			
Prepared by 制作	Checked by 检查		Approved by 审核
	电子	结构	

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1.0 General Description

1.1 Introduction

YX08025252481HB Display model 8.0" LCM is a color active matrix thin film transistor (TFT) liquid crystal display (LCD) that uses amorphous silicon TFT as a switching device. This model is composed of a TFT LCD panel and a driving circuit. This TFT LCD has a 8.0(10:16) inch diagonally measured active display area with (800horizontal by1280 vertical pixel) resolution.

1.2. Features

- 8.0 (10:16 diagonal) inch configuration
- MIPI interface
- 16.7M color
- RoHS Compliance
- Halogen Free

1.3. General information

Item	Specification	Unit
Outline Dimension	114.60 (H) x 184.10 (V) x2.6(D)	mm
Display area	107.64(H) x 172.22 (V)	mm
Number of Pixel	800 RGB (H) x1280 (V)	pixels
Pixel pitch	0.13455(H) x 0.13455(V)s	mm
Pixel arrangement	RGB Vertical stripe	
Display mode	Normally Black	
Color Filter Array	RGB vertical stripes	
Backlight	24 White LED	
Interface	MIPI	
Luminous (Without PET)	300(Min)——350 (TYP)	cd/m2
Weight	TBD	g

2.0 Absolute Maximum Ratings

2.1 Electrical Absolute Rating

Parameter	Symbol	Min.	Max.	Unit	Note
Power supply voltage	VCC	-0.3	+3.6	V	GND=0
	IOVCC	+0.3	+3.3	V	GND=0

2.2 Environment Absolute Rating

Item	Symbol	Min.	Max.	Unit	Note
Operating Temperature	Topa	-10	50	°C	
Storage Temperature	Tstg	-20	60	°C	

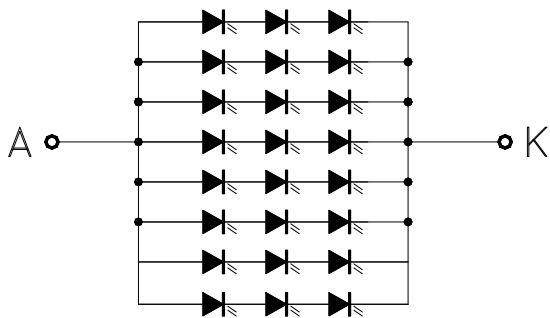
2.3 Back-light Unit:

PARAMETER	Sym.	Min.	Typ.	Max.	Unit	Test Condition	Note	
LED Current	IF	–	160	–	mA	–	–	
LED Voltage	VF	9	9.6	10.2	V	–	–	
Brightness		300	350		Nits	I=160mA		
Life Time		–	20000	–	Hr.	I ≦ 160mA	–	
Color		White						

Note (1) Permanent damage may occur to the LCD module if beyond this specification. Functional operation should be restricted to the conditions described under normal operating conditions.

(2) Ta=25±2°C

(3) Test condition: LED Current 160mA



LED 电路图



3.0 Optical Characteristics

3.1 Optical specification

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Note
Transmittance (With PZ)		T		—	4.8	—	%	
Contrast		CR	Normal viewing angle	—	800	—		(1)(2)(4)
Response time		Tr+Tf			30	45	msec	(1)(3)
Color chromaticity (CIE1931)	Red	R _x		—	0.632			CF glass C light
		R _y			0.314			
	Green	G _x			0.267			
		G _y			0.547			
	Blue	B _x			0.142			
		B _y			0.102			
White	W _x			0.302				
	W _y			0.321				
Viewing angle	Hor.	θ _L	CR>10	75	85	—	(1)(4)	
		θ _R		75	85	—		
	Ver.	θ _U		75	85	—		
		θ _D		75	85	—		
View Direction		ALL						(5)

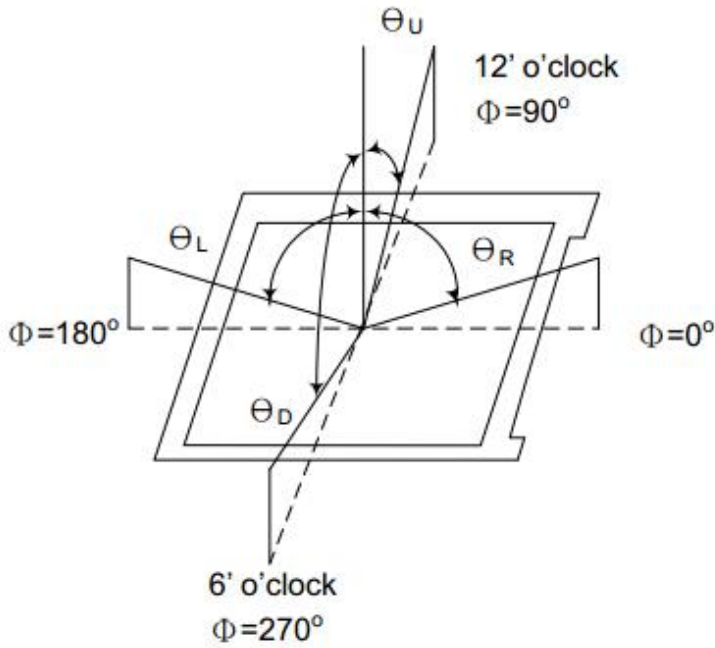
3.2 Measuring Condition

- Measuring surrounding : dark room
- Ambient temperature : 25±2℃
- 15min. warm-up time.

3.3 Measuring Equipment

- TOPCON BM-7
- Measuring spot size : field 2°

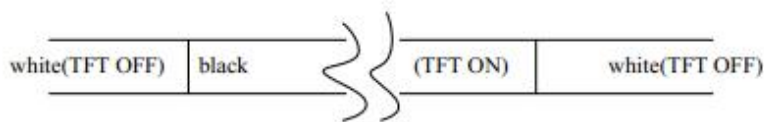
Note (1) Definition of Viewing Angle:



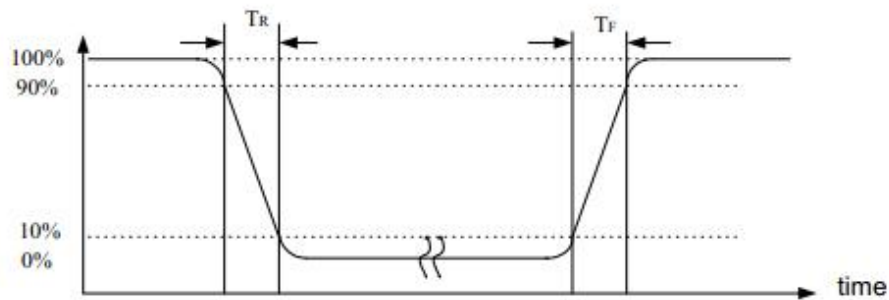
Note (2) Definition of Contrast Ratio (CR) :
measured at the center point of panel

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

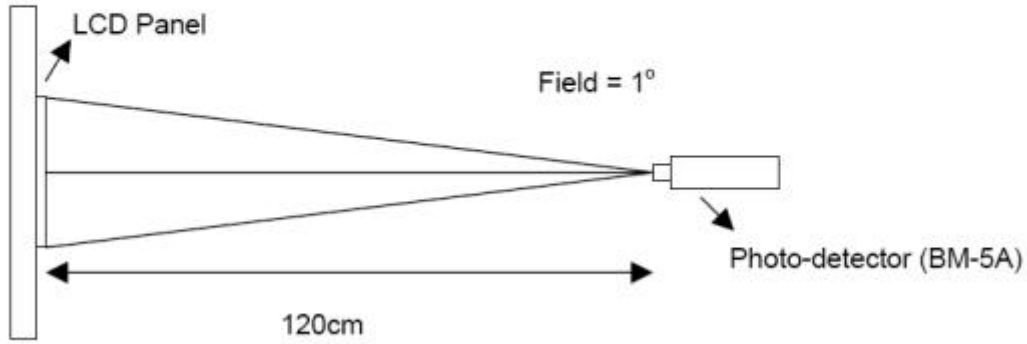
Note (3) Definition of Response Time : Sum of T_R and T_F



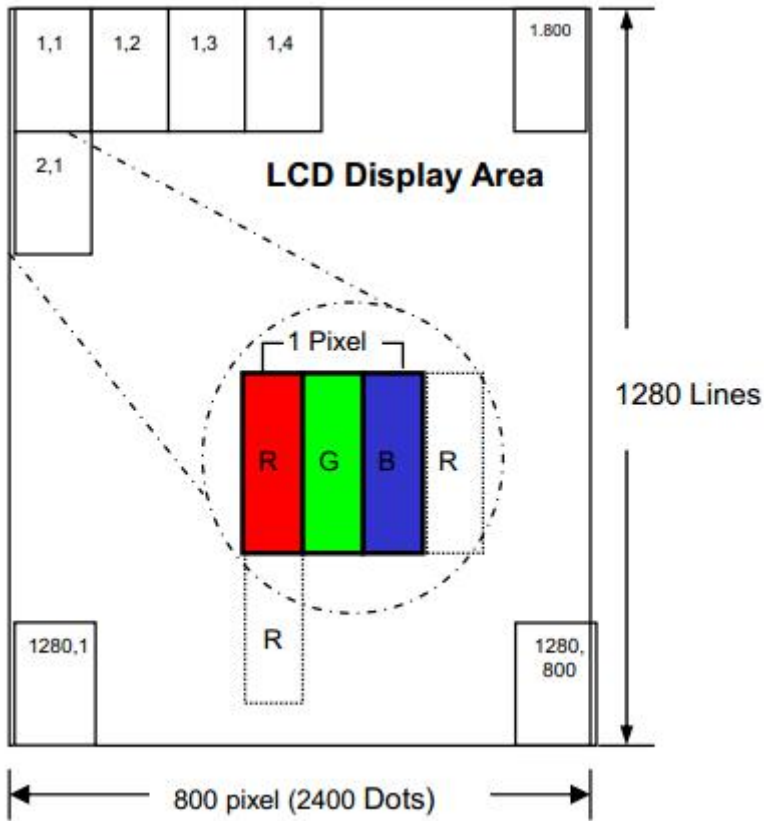
Optical response



Note (4) Definition of optical measurement setup



4.0Pixel Format





5.0 Interface Pin Connection

5.1 TFT LCD Module

Pin No.	Symbol	I/O		Remark
1-3	LEDA	P	Power for LED backlight (Anode)	
4	NC	-	No connect.	
5-8	LEDK	P	Power for LED backlight (Cathode)	
9-10	GND	P	Ground	
11	MIPI_D2P	I	MIPI_D2P are differential small amplitude	
12	MIPI_D2N	I	MIPI_D2N are differential small amplitude	
13	GND	P	Ground	
14	MIPI_D1P	I	MIPI_D1P are differential small amplitude	
15	MIPI_D1N	I	MIPI_D1N are differential small amplitude	
16	GND	P	Ground	
17	MIPI_CLKP	I	MIPI_CLKP are differential small amplitude	
18	MIPI_CLKN	I	MIPI_CLKN are differential small amplitude	
19	GND	P	Ground	
20	MIPI_D0P	I	MIPI_D0P are differential small amplitude	
21	MIPI_D0N	I	MIPI_D0N are differential small amplitude	
22	GND	P	Ground	
23	MIPI_D3P	I	MIPI_D3P are differential small amplitude	
24	MIPI_D3N	I	MIPI_D3N are differential small amplitude	
25	GND	P	Ground	
26	NC	-	No connect.	
27	RESET	I	Global reset pin.	
28	GND	P	Ground	
29	IOVCC	P	I/O Power Supply 1.8V	
30-31	VCI3V3	P	I/O Power Supply 3.3V	



5.1 Absolute Maximum Ratings

Electrical Maximum Ratings (VSS=0V)

Parameter	Symbol	Min.	Max.	Unit	Note
Power supply voltage	VCI3V3	+0.3	+3.6	V	GND=0
	IOVCC	+0.3	+3.3	V	GND=0

Table 1: Electrical Maximum Ratings – for IC

Note:

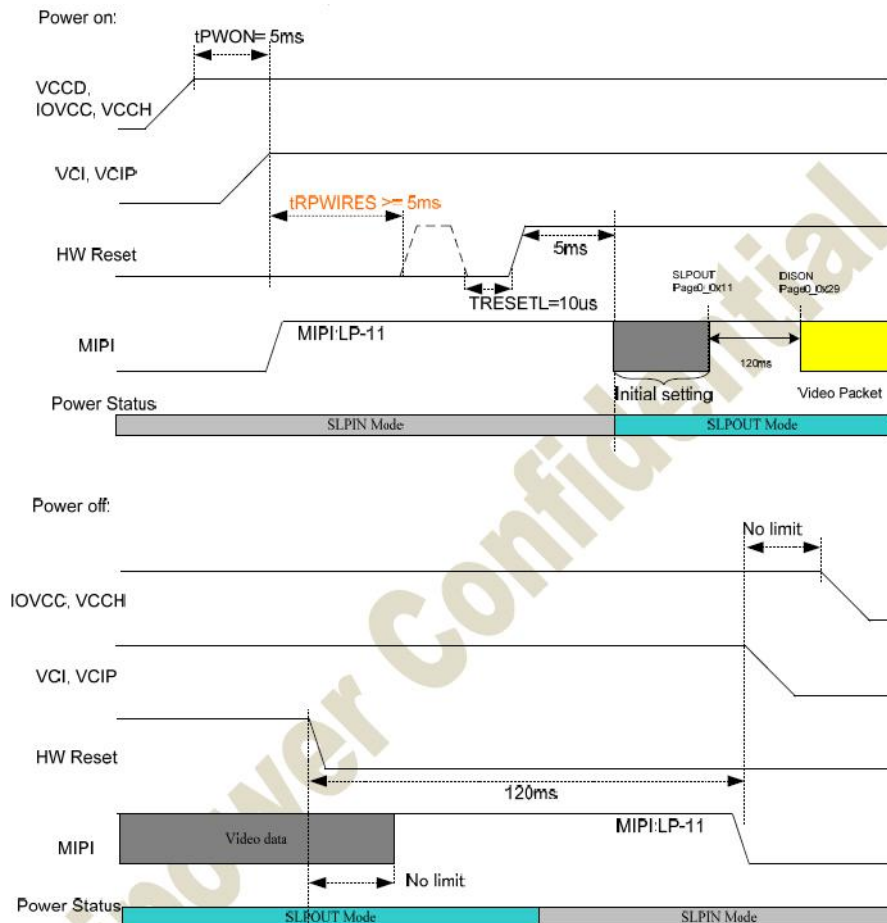
1. VCC,IOVCC, GND must be maintained.
2. The modules may be destroyed if they are used beyond the absolute maximum ratings.
3. Ta=25+/-2

5.2. Electrical Specifications(Typical Operation Conditions, At Ta = 25 °C)

Table 2

ITEM	SYMBOL	MIN	TYP	MAX	UNIT	NOTE
Power Supply Voltage	VCC	3.0	3.3	3.6	V	-
	IOVCC	1.65	1.8	3.3	V	-

5.2.1 Power Sequence



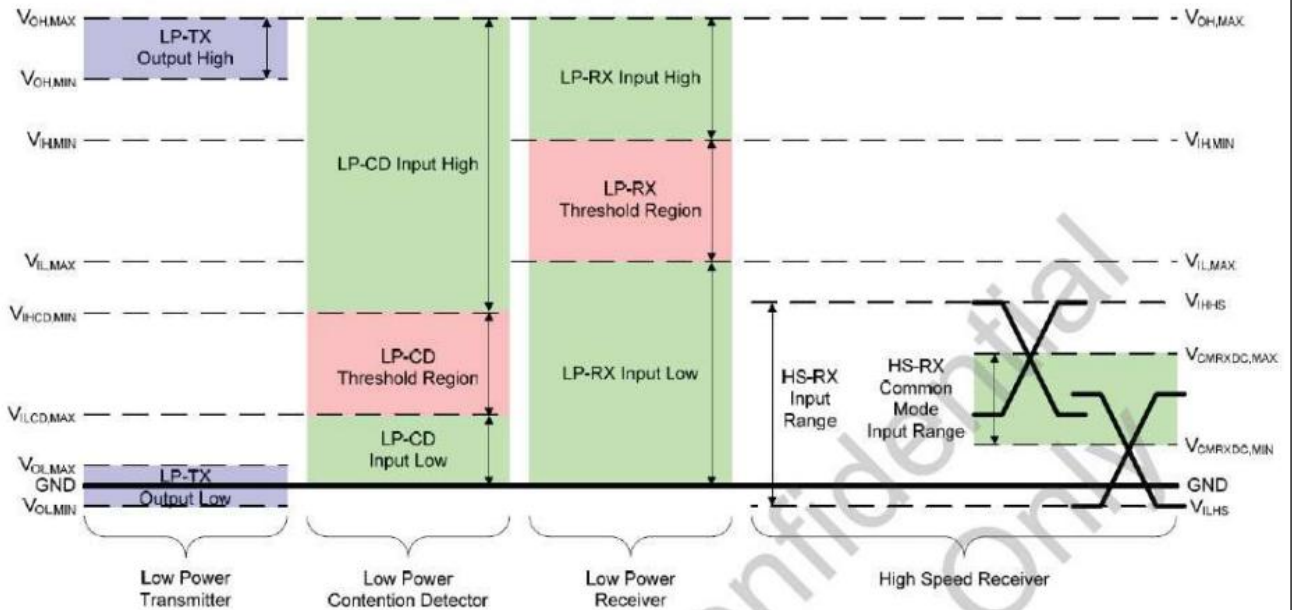
5.03 DC Characteristics

5.03.1DC CHARACTERISTICS FOR DSI LP MODE

Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
LPDT Logic 1 contention threshold	VILCD,MIN	LP-CD	450	-	1600	mV
LPDT Logic 0 contention threshold	VIHCD,MAX	LP-CD	0	-	200	mV
LPDT Logic 1 input threshold	VIH	LP-RX (CLK, D0)	880	-	1600	mV
LPDT Logic 0 input threshold	VIL	LP-RX (CLK, D0)	0	-	550	mV
LPDT Output high level	VOH	LP-TX (D0)	1.1		1.3	V
LPDT Output low level	VOL	LP-TX (D0)	-50		50	mV

Note (1) IOVCC=1.65~3.3V, VCC=2.6 to 3.8V, GND=0V, Ta=-30 to 70 °C

Note (2) Includes 50mV (-50mV to 50mV) ground difference.



**5.03DC CHARACTERISTICS FOR DSI HS MODE**

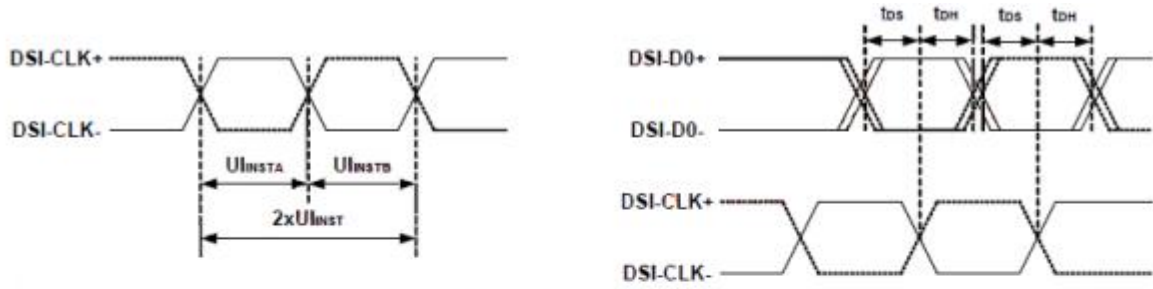
Parameter	Symbol	Conditions	Min.	Typ	Max.	Unit
Common mode voltage	VCMRXDC	DSI-CLK+/-, DSI-D0+/-	70		330	mV
Hi-Speed transmit voltage	VOD	DSI-CLK+/-, DSI-D0+/-	140	200	250	mV
Single-ended input low voltage	VILHS	DSI-CLK+/-, DSI-D0+/-	-40	-	-	mV
Single-ended input high voltage	VIHHS	DSI-CLK+/-, DSI-D0+/-	-	-	460	mV
Differential input impedance	ZID	DSI-CLK+/-, DSI-D0+/-	80	100	125	Ω

Note (1) IOVCC=1.65~3.3V, VCC=2.6 to 3.8V, GND=0V, Ta=-30 to 70 °C

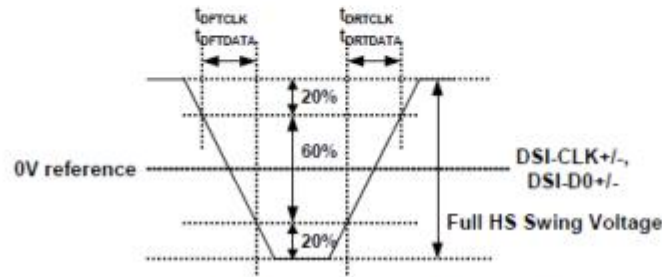
5.04 Interface Timing (MIPI DSI)**5.04.1 HIGH SPEED MODE**

Signal	Symbol	Parameter	Min.	Typ.	Max.	Unit	Description
DSI-CLK+/-	2xUI _{INST}	Double UI instantaneous	4	-	25	ns	
DSI-CLK+/-	UI _{INSTA} UI _{INSTB}	UI instantaneous halves	2	-	12.5	ns	UI = UI _{INSTA} = UI _{INSTB}
DSI-Dn+/-	t _{DS}	Data to clock setup time	0.15xUI	-	-	ps	
DSI-Dn+/-	t _{DH}	Data to clock hold time	0.15xUI	-	-	ps	
DSI-CLK+/-	t _{DRTCLK}	Differential rise time for clock	150	-	0.3xUI	ps	
DSI-Dn+/-	t _{DRTDATA}	Differential rise time for data	150	-	0.3xUI	ps	
DSI-CLK+/-	t _{DFTCLK}	Differential fall time for clock	150	-	0.3xUI	ps	
DSI-Dn+/-	t _{DFTDATA}	Differential fall time for data	150	-	0.3xUI	ps	

Note: Dn = D0 and D1.



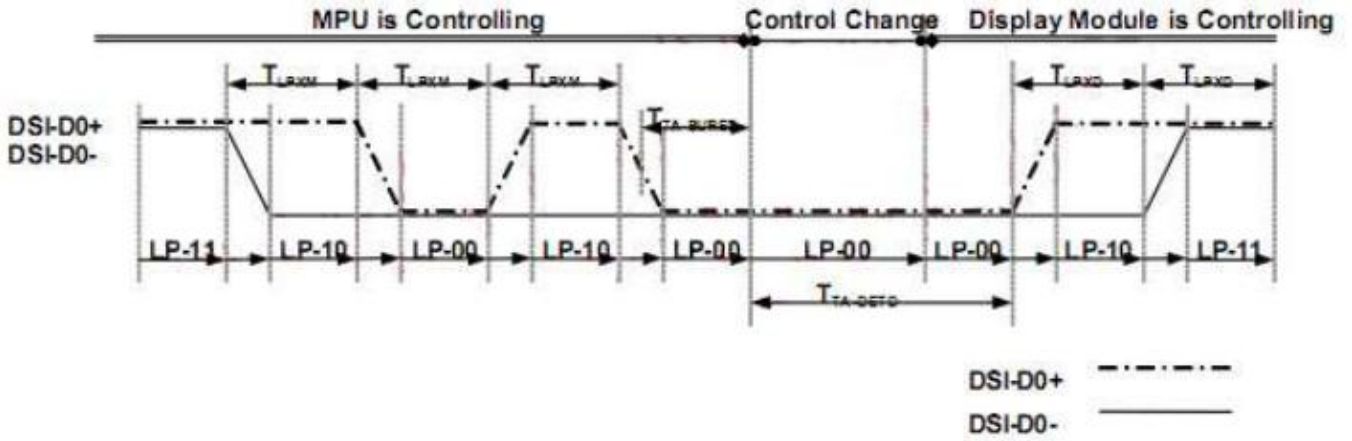
DSI clock channel timing



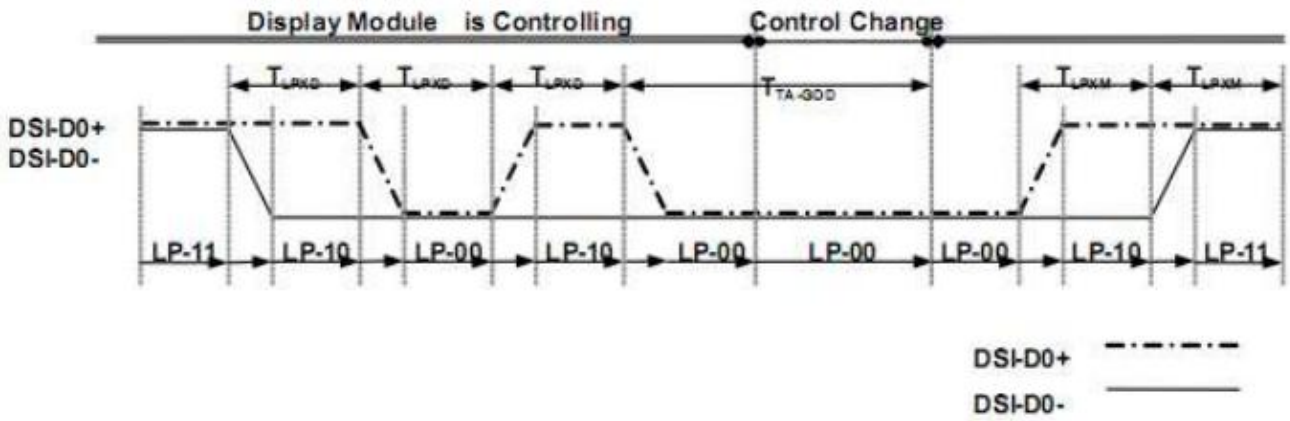
Rising and fall time on clock and data channel

5.04.2 LOW POWER MODE

Signal	Symbol	Parameter	Min.	Typ.	Max.	Unit	Description
DSI-D0+/-	T_{LPXM}	Length of LP-00, LP-01, LP-10 or LP-11 periods MPU , Display Module	50	-	75	ns	Input
DSI-D0+/-	T_{LPXD}	Length of LP-00, LP-01, LP-10 or LP-11 periods Display Module , MPU	58	-	75	ns	Output
DSI-D0+/-	$T_{TA-SURED}$	Time-out before the MPU start driving	T_{LPXD}	-	$2xT_{LPXD}$	ns	Output
DSI-D0+/-	$T_{TA-GETD}$	Time to drive LP-00 by display module	$5xT_{LPXD}$	-	-	ns	Input
DSI-D0+/-	T_{TA-GOD}	Time to drive LP-00 after turnaround request - MPU	$4xT_{LPXD}$	-	-	ns	Output



Bus Turnaround (BAT) from MPU to display module Timing



Bus Turnaround (BAT) from display module to MPU Timing

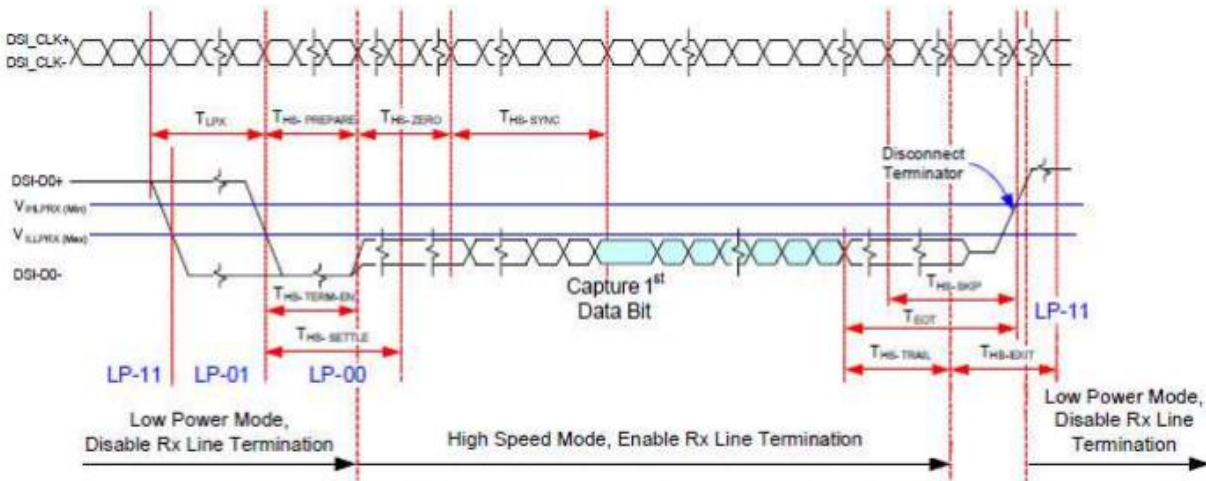


Fig. 7.6.8 Data lanes-Low Power Mode to/from High Speed Mode Timing

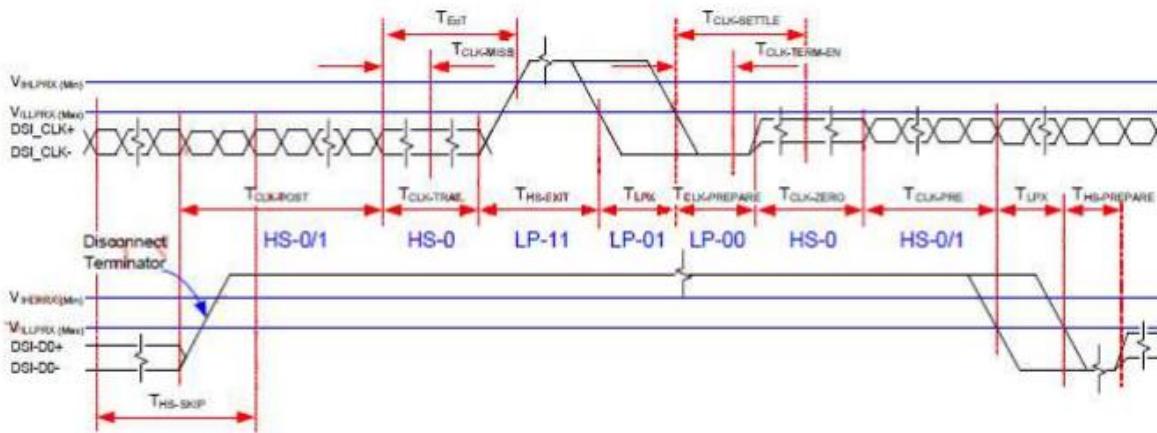


Fig. 7.6.9 Clock lanes- High Speed Mode to/from Low Power Mode Timing

6.0 Reliability test items

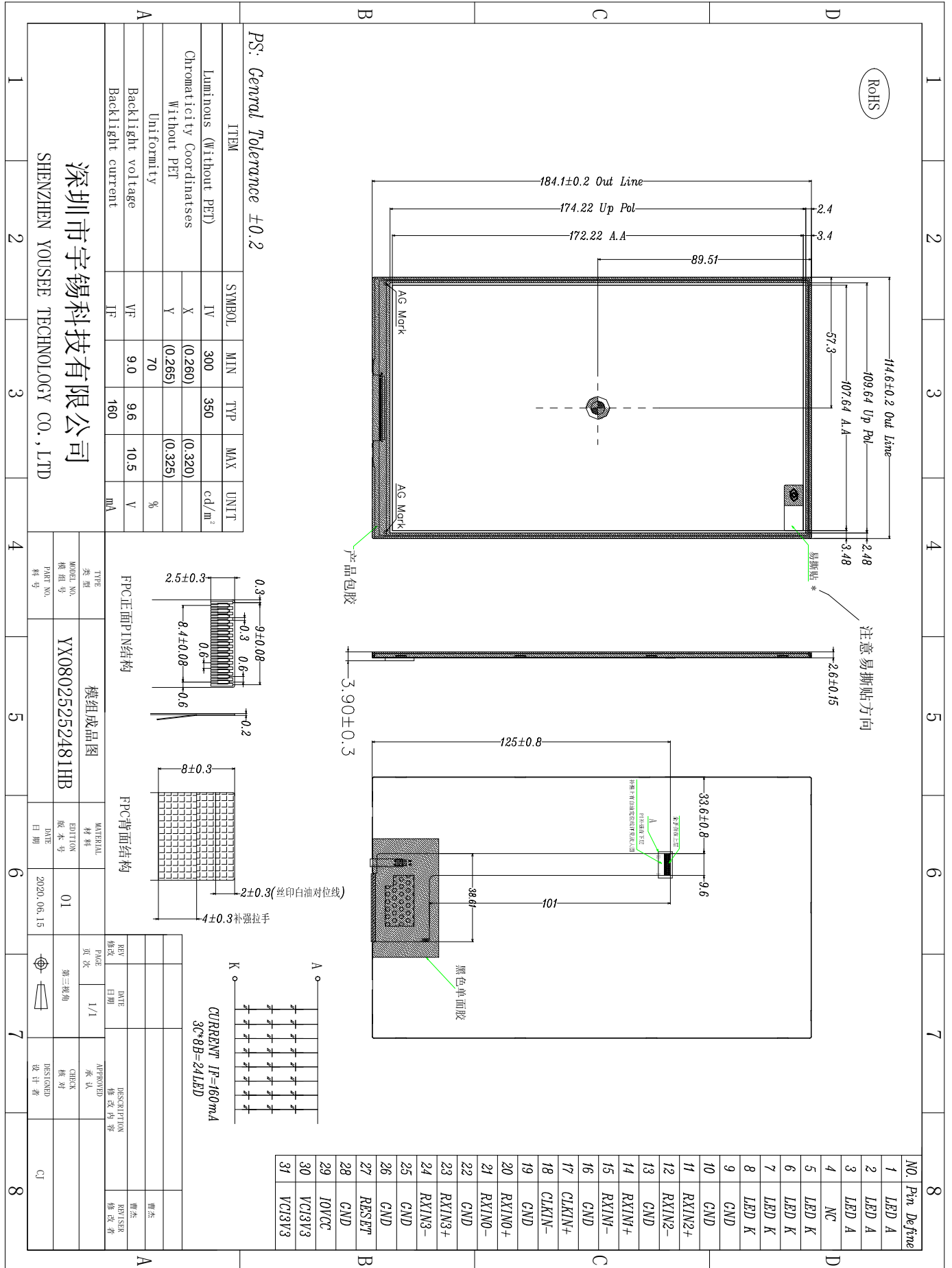
NO	Item	Conditions	Remark
1	High Temperature Storage	Ta=+60°C,48hrs	
2	Low Temperature Storage	Ta=-20°C,48hrs	
3	High Temperature Operation	Ta=+50°C,48hrs	
4	Low Temperature Operation	Ta=-10°C,48hrs	
5	High Temperature and High Humidity (operation)	Ta=+40°C,90%RH,48hrs	
6	Thermal Cycling Test (non operation)	-20°C(0.5hr)→+60°C(30min),100cycles	

Note: (1) All tests above are practiced at module type.

(2) There is no display function NG issue occurred, All the cosmetic specification is judged before the reliability stress.



7.0 Outline dimension



PS: General Tolerance ±0.2

ITEM	SYMBOL	MIN	TYP	MAX	UNIT
Luminous (Without PET)	IV	300	350	(0.320)	cd/m ²
Chromaticity Coordinates Without PET	X	(0.260)		(0.320)	
	Y	(0.265)		(0.325)	
Uniformity		70			%
Backlight voltage	VF	9.0	9.6	10.5	V
Backlight current	IF		160		mA

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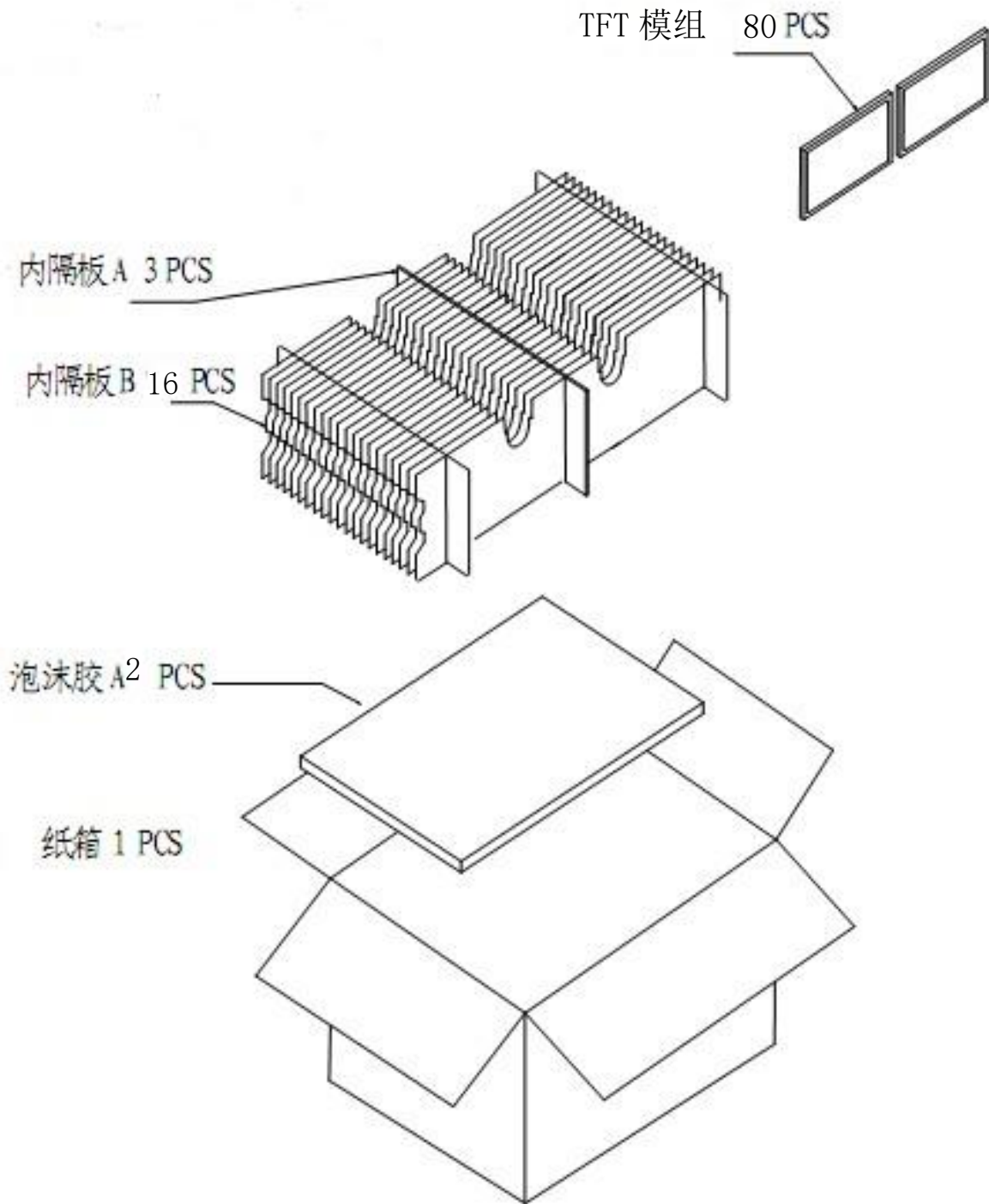
TYPE	模组成品图	MATERIAL	材料
MODEL NO.	YX08025252481HB	EDITION	01
PART NO.		DATE	2020.06.15

REV	DATE	DESCRIPTION	REVISOR
修改		修改内容	修改者
第三次		核对	设计者



8.0 Packing form

8.1 Packing form 1





9.0 GENERAL PRECAUTION

9.1 Use Restriction

This product is not authorized for use in life supporting systems, aircraft navigation control systems, military systems and any other application where performance failure could be life threatening or otherwise catastrophic.

9.2 Disassembling or Modification

Do not disassemble or modify the module. It may damage sensitive parts inside LCD module, and may cause scratches or dust on the display. HannStar does not warrant the module, if customers disassemble or modify the module.

9.3 Breakage of LCD Panel

9.3.1. If LCD panel is broken and liquid crystal spills out, do not ingest or inhale liquid crystal, and do not contact liquid crystal with skin.

9.3.2. If liquid crystal contacts mouth or eyes, rinse out with water immediately.

9.3.3. If liquid crystal contacts skin or cloths, wash it off immediately with alcohol and rinse thoroughly with water.

9.3.4. Handle carefully with chips of glass that may cause injury, when the glass is broken.

9.4 Electric Shock

9.4.1. Disconnect power supply before handling LCD module.

9.4.2. Do not pull or fold the LED cable.

9.4.3. Do not touch the parts inside LCD modules and the fluorescent LED's connector or cables in order to prevent electric shock.

9.5 Absolute Maximum Ratings and Power Protection Circuit

9.5.1. Do not exceed the absolute maximum rating values, such as the supply voltage variation, input voltage variation, variation in parts' parameters, environmental temperature, etc., otherwise LCD module may be damaged. 9.5.2. Please do not leave LCD module in the environment of high humidity and high temperature for a long time. 9.5.3. It's recommended to employ protection circuit for power supply.

9.6 Operation

9.6.1 Do not touch, push or rub the polarizer with anything harder than HB pencil lead.

9.6.2 Use fingerstalls of soft gloves in order to keep clean display quality, when persons handle the LCD module for incoming inspection or assembly.

9.6.3 When the surface is dusty, please wipe gently with absorbent cotton or other soft material.

9.6.4 Wipe off saliva or water drops as soon as possible. If saliva or water drops contact with polarizer for a long time, they may causes deformation or color fading.

9.6.5 When cleaning the adhesives, please use absorbent cotton wetted with a little petroleum benzine or other adequate solvent.

9.7 Mechanism

Please mount LCD module by using mouting holes arranged in four corners tightly.

9.8 Static Electricity

9.8.1 Protection film must remove very slowly from the surface of LCD module to prevent from electrostatic



9.8.2. Because LCD module use CMOS-IC on circuit board and TFT-LCD panel, it is very weak to electrostatic discharge. Please be careful with electrostatic discharge. Persons who handle the module should be grounded through adequate methods.

9.9 Strong Light Exposure

The module shall not be exposed under strong light such as direct sunlight. Otherwise, display characteristics may be changed.

9.10 Disposal

When disposing LCD module, obey the local environmental regulations.