



深圳市宇锡科技有限公司

SHENZHEN YOUSEE TECHNOLOG CO., LTD

DISPLAY SPECIFICATION

Product NO: (产品型号) YX07018271884BC

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

YX07018271884BC 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 7 (16:9) inch diagonally measured active display area with (800 horizontal by 480 vertical pixel) resolution.

1.2. Features

5(16:9 diagonal) inch configuration

Image Reversion: UP/DOWN and LEFT/RIGHT

ROHS design

1.3. General information

Item	Specification	Unit
Outline Dimension	165(H) x 100(V) x3.5 (D)	mm
Display area	153.84(H) x 85.63 (V)	mm
Number of Pixel	800(H) x3(RGB)x 480 (V)	pixels
Pixel pitch	0.1175(H) x3(RGB)x 0.1088 (V)	mm
Pixel arrangement	RGB Vertical stripe	
Display mode	Normally White	
Color Filter Array	RGB vertical stripes	
Backlight	White LED	
Weight	TBD	g
Interface	TTL	



2.0 Absolute Maximum Ratings

2.1 Environment Absolute Rating

Item	Symbol	Min.	Max.	Unit	Note
Operating Temperature	Topa	-10	60	°C	
Storage Temperature	Tstg	-20	70	°C	

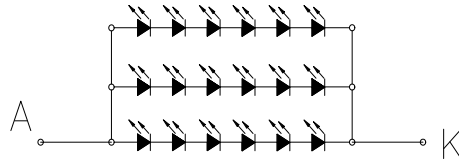
2.2 Back-light Unit:

PARAMETER	Sym.	Min.	Typ.	Max.	Unit	Test Condition	Note
LED Current	IF	–	60	–	mA	–	–
LED Voltage	VF	18.2	19.2	20.2	V	–	–
Life Time		–	20000	–	Hr.	$I \leq 60\text{mA}$	–
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) $T_a = 25 \pm 2^\circ\text{C}$

(3) Test condition: LED Current 60 mA



LED电路图 6串*3并=18 LED



3.0 Optical Characteristics

3.1 Optical specification

Item	Symbol	Condition	Min	Typ	Max	Unit	Remark
Response Time	Tr	$\theta = 0^\circ$	-	10	20	ms	Note 3
	Tf		-	15	30		
	Tr+Tf		-	25	-		
Contrast Ratio	CR	$\theta = 0^\circ$	400	500	-		Note 2,4
Viewing Angle	Top(12 o'clock)	$CR \geq 10$	60	70	-	deg	Note 1
	Bottom(6 o'clock)		50	60	-		
	Left(9 o'clock)		70	80	-		
	Right(3 o'clock)		70	80	-		
Color Chromaticity	Wx	$\theta = 0^\circ$	0.26	0.31	0.36		Note 5
	Wy		0.28	0.33	0.38		
	Rx		-	-	-		
	Ry		-	-	-		
	Gx		-	-	-		
	Gy		-	-	-		
	Bx		-	-	-		
	By		-	-	-		
Cross Talk	Ct		-	-	1.2	%	Note 6
Transmittance	Trans		-	4.88	-	%	
Luminance	L	$\theta = 0^\circ$	500	550	-	cd/m ²	
Luminance uniformity	YU		75	80	-	%	

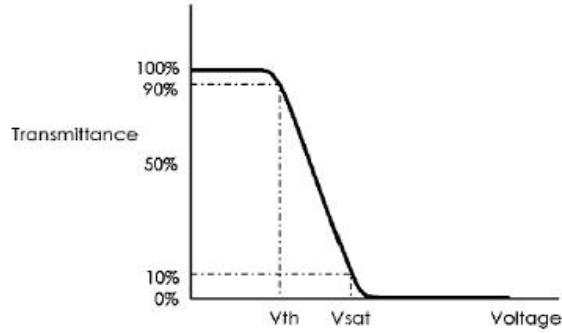
3.2 Measuring Condition

- Measuring surrounding : dark room
- Ambient temperature : $25 \pm 2^\circ\text{C}$
- 30min. warm-up time.

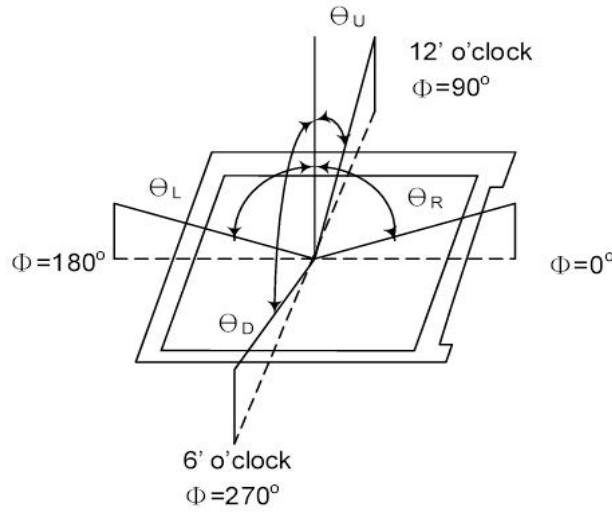
3.3 Measuring Equipment

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

Note (1) Definition of Vsat and Vth (at 20°C)



Note (2) Definition of Viewing Angle :

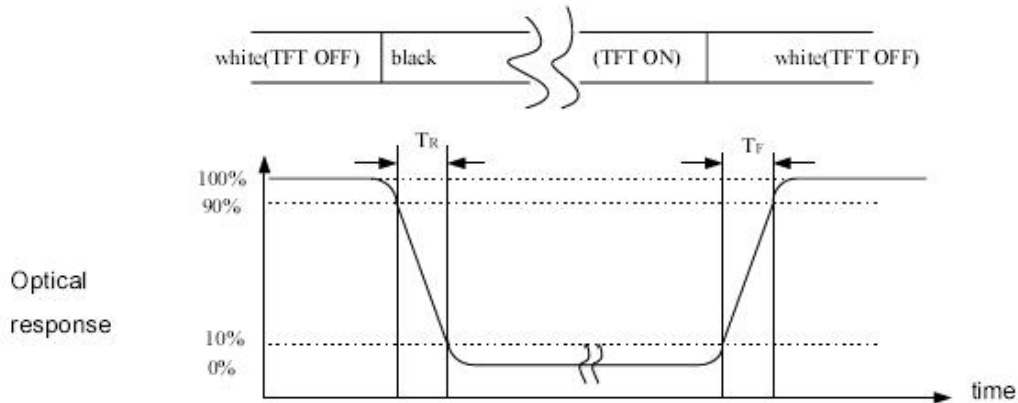


Note (3) Definition of Contrast Ratio(CR) :

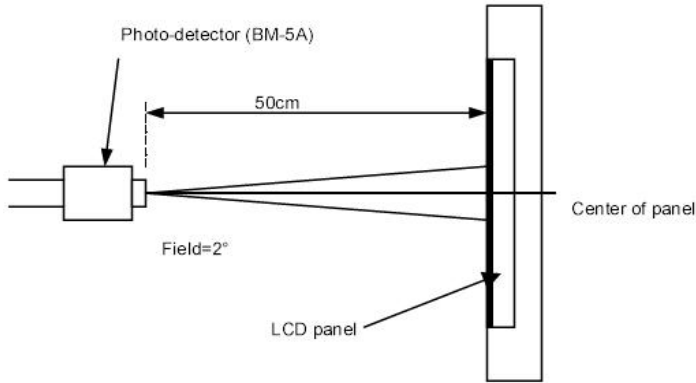
measured at the center point of panel

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

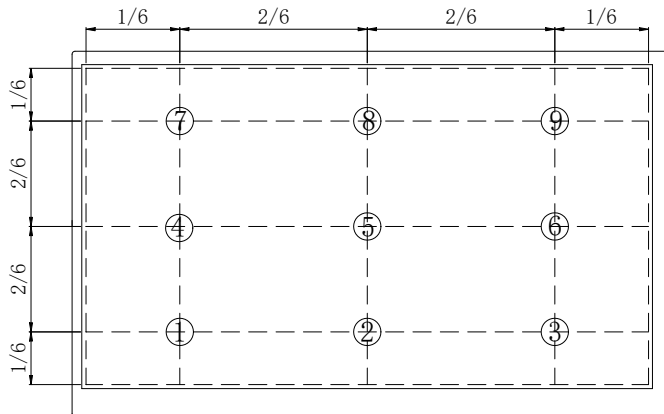
Note (4) Definition of Response Time : Sum of T_R and T_F



Note (5) Definition of optical measurement setup



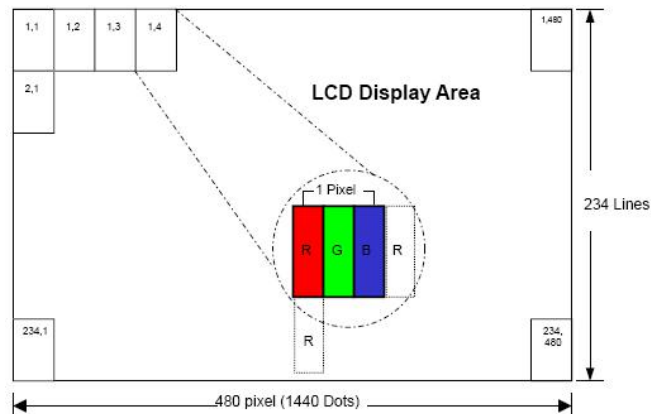
Note (6) Definition of brightness uniformity



Note (7) Rubbing Direction (The different Rubbing Direction will cause the different optima view direction.)

4.0 Block Diagram

4.1 TFT-LCD Module





5.0 Interface Pin Connection

Pin No.	Symbol	Functional	Notes
1	LED K	LED Cathode	
2	LED A	LED Anode	
3	GND	Digital Ground	
4	VDD	Digital Power	
5~12	R0~R7	Red data Input	
13~20	G0~G7	Green data Input	
21~28	B0~B7	Blue data Input	
29	GND	Digital Ground	
30	DCLK	Clock input	
31	DISP	Display on/off	
32	HSYNC	Horizontal sync input.Negative polarity	
33	VSYNC	Vertical sync input.Negative polarity	
34	DE	Data enable signal	
35	NC	Not connect	
36	GND	Digital Ground	
37	XR	TP X_Right	
38	YD	TP Y_Bottom	
39	XL	TP X_Left	
40	YU	TP Y_Up	



6. Electrical Characteristics

6.1 TFT LCD Module

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Supply Voltage	DVDD	3.0	3.3	3.6	V	
Input signal voltage	V _{IH}	0.7DV _{DD}	-	DV _{DD}	V	
	V _{IL}	0	-	0.3DV _{DD}	V	
Power Current	I _{DD}	-	60	--	mA	DVDD=3.3V

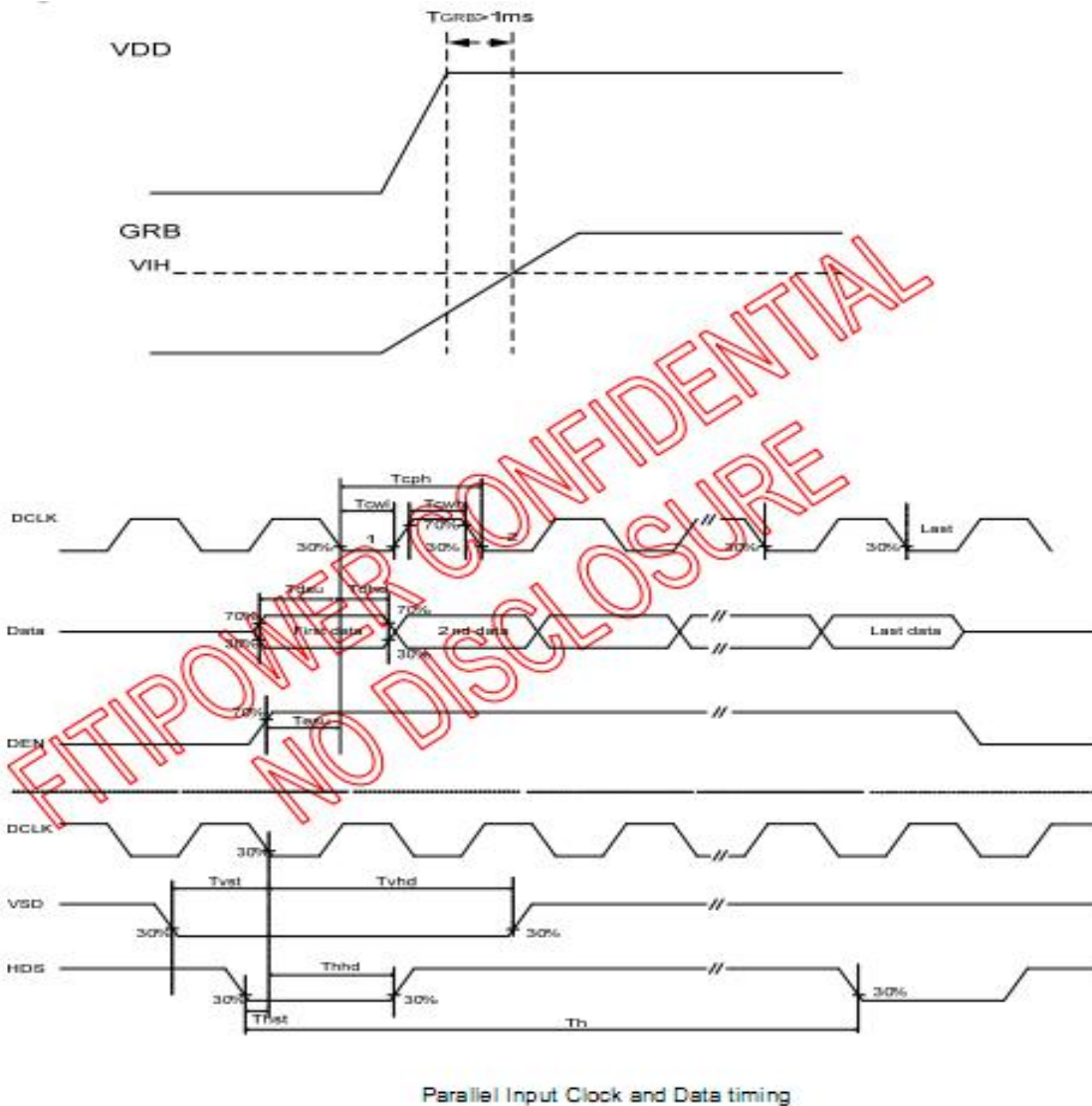


6.2 Timing Diagram of Interface Signal

6.2.1 AC Specification

TTL mode

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
VDD Power On Slew rate	TPOR	From 0V to 90% VDD	-	-	20	ms
RSTB pulse width	TRST	DCLK = 65MHz	50	-	-	us
DCLK cycle time	Tcph	-	14	-	-	ns
DCLK pulse duty	Tcwh	-	40	50	60	%
VSD setup time	Tvst	-	5	-	-	ns
VSD hold time	Tvhd	-	5	-	-	ns
HSD setup time	Thst	-	5	-	-	ns
HSD hold time	Thhd	-	5	-	-	ns
Data set-up time	Tdsu	D0[7:0], D1[7:0], D2[7:0] to DCLK	5	-	-	ns
Data hold time	Tdhd	D0[7:0], D1[7:0], D2[7:0] to DCLK	5	-	-	ns
DE setup time	Tesu	-	5	-	-	ns
DE hold time	Tehd	-	5	-	-	ns
Output stable time	Tsst	10% to 90% target voltage. CL=90pF R=10K ohm(Cascade)	-	-	6	us
		Dual gate			3	



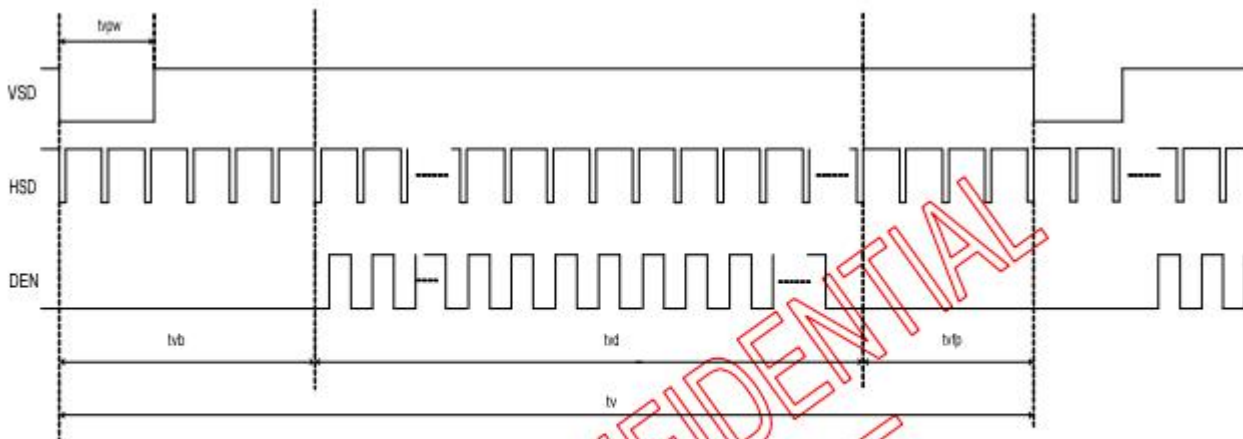
Horizontal timing

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
Horizontal Display Area	thd	800			DCLK
DCLK frequency	felk	-	30	50	MHz
One Horizontal Line	th	889	928	1143	DCLK
HS pulse width	thpw	1	48	255	DCLK
HS Back Porch(Blanking)	thb	88			DCLK
HS Front Porch	thfp	1	40	255	DCLK
DE mode Blanking	th-thd	85	128	512	DCLK

Vertical timing

Parameter	Symbol	Spec.			Unit
		Min.	Typ.	Max.	
Vertical Display Area	tvd	480			T_H
VS period time	tv	513	525	767	T_H
VS pulse width	tvpw	3	3	255	T_H
VS Back Porch(Blanking)	tvb	32			T_H
VS Front Porch	tvfp	1	13	255	T_H
DE mode Blanking	tv-tvd	4	45	255	T_H

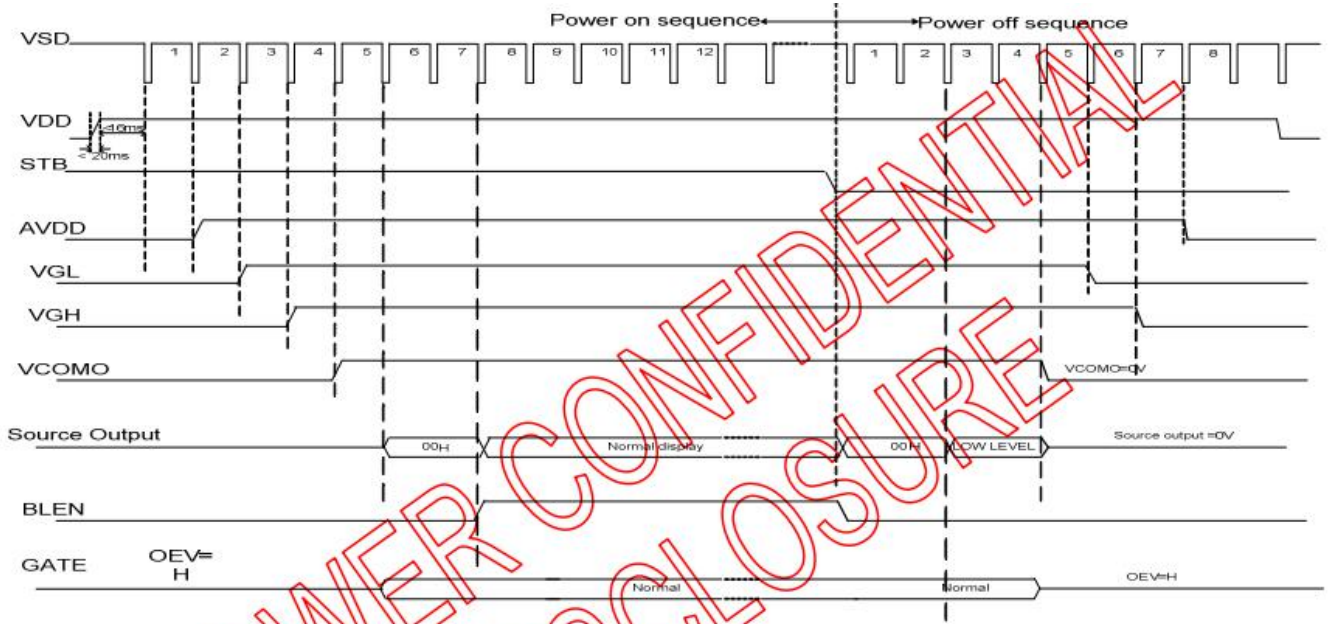
6.2.2 Data Input Format



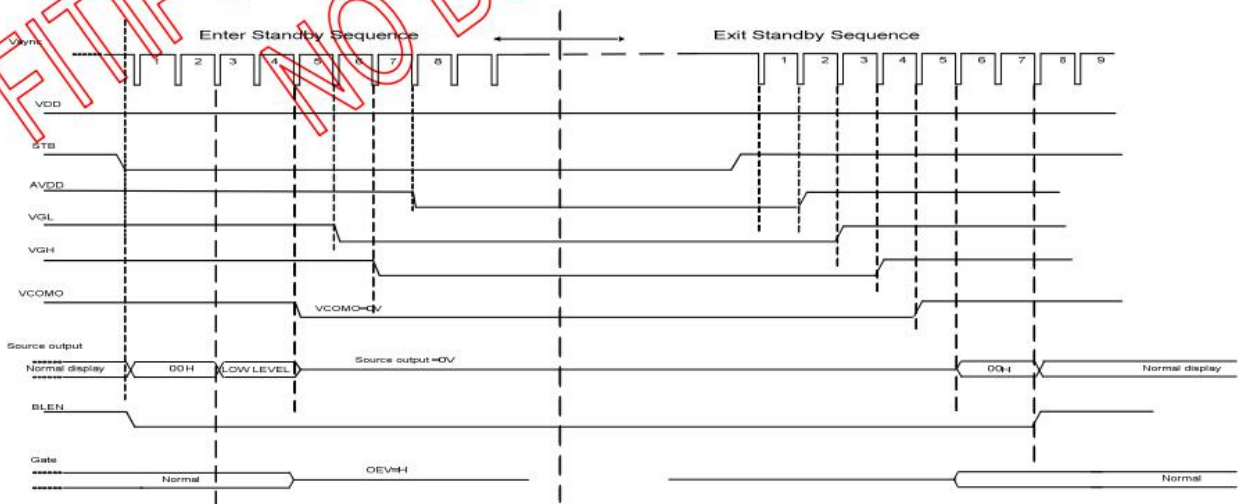
Vertical input timing



6.3 Power Sequence



Power On/Off timing chart



Enter and Exit Standby Mode timing chart

Note: Low level=3Fh,when NBW=L(Normally white)
 Low level=00h,when NBW=H(Normally black)

**7.0 Reliability test items**

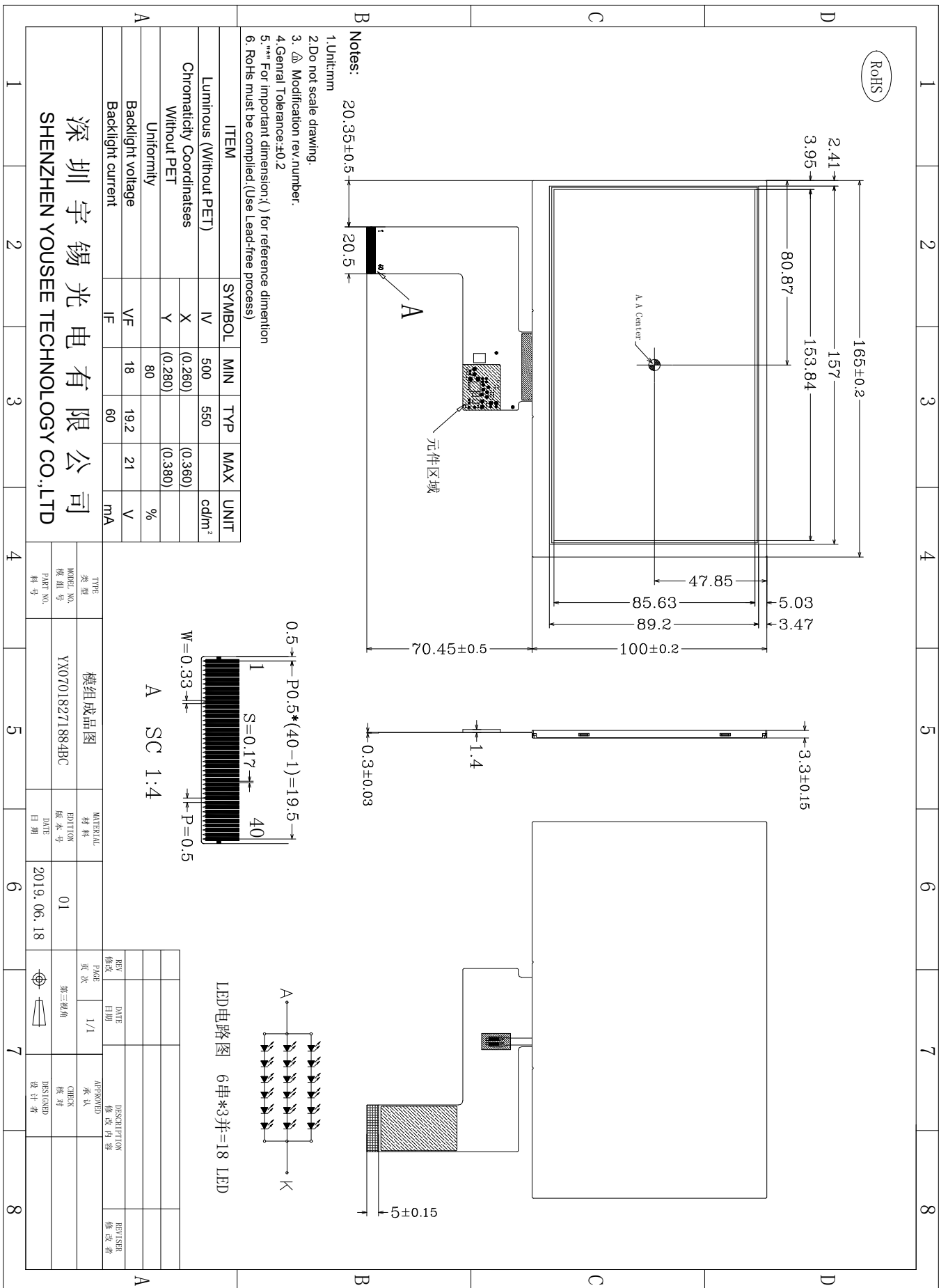
NO	Item	Conditions	Remark
1	High Temperature Storage	Ta=+70℃,48hrs	
2	Low Temperature Storage	Ta=-20℃,48hrs	
3	High Temperature Operation	Ta=+60℃,48hrs	
4	Low Temperature Operation	Ta=-10℃,48hrs	
5	High Temperature and High Humidity (operation)	Ta=+50℃,80%RH,48hrs	
6	Thermal Cycling Test (non operation)	-20℃(0.5hr)→+70℃(0.5hr),100cycles	
7	Vibration	1.Random:1.04G,10-500HZ,X,Y,Zdirection 30min/each direction 2.Sweep sine:1.5G, 5~500Hz, X/Y/Z,30min/each direction	
8	Shock	100G,6ms, ±X, ±Y, ±Z 3 time for each direction	JIS C7021, A-10 (Condition A)
9	Vibration (with carton)	Random:1.04Grms, 10~500Hz, X/Y/Z 45min/each direction Fixed:5Hz, 1.5Grms, X/Y/Z 45min/each direction	
10	Drop (with carton)	Height: 60cm 1 corner, 3 edges, 6 surfaces	JIS Z0202
11	Electrostatic Discharge	±200V,200PF,0Ω1 time/each terminal	

Note: All tests above are practiced at module type.

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



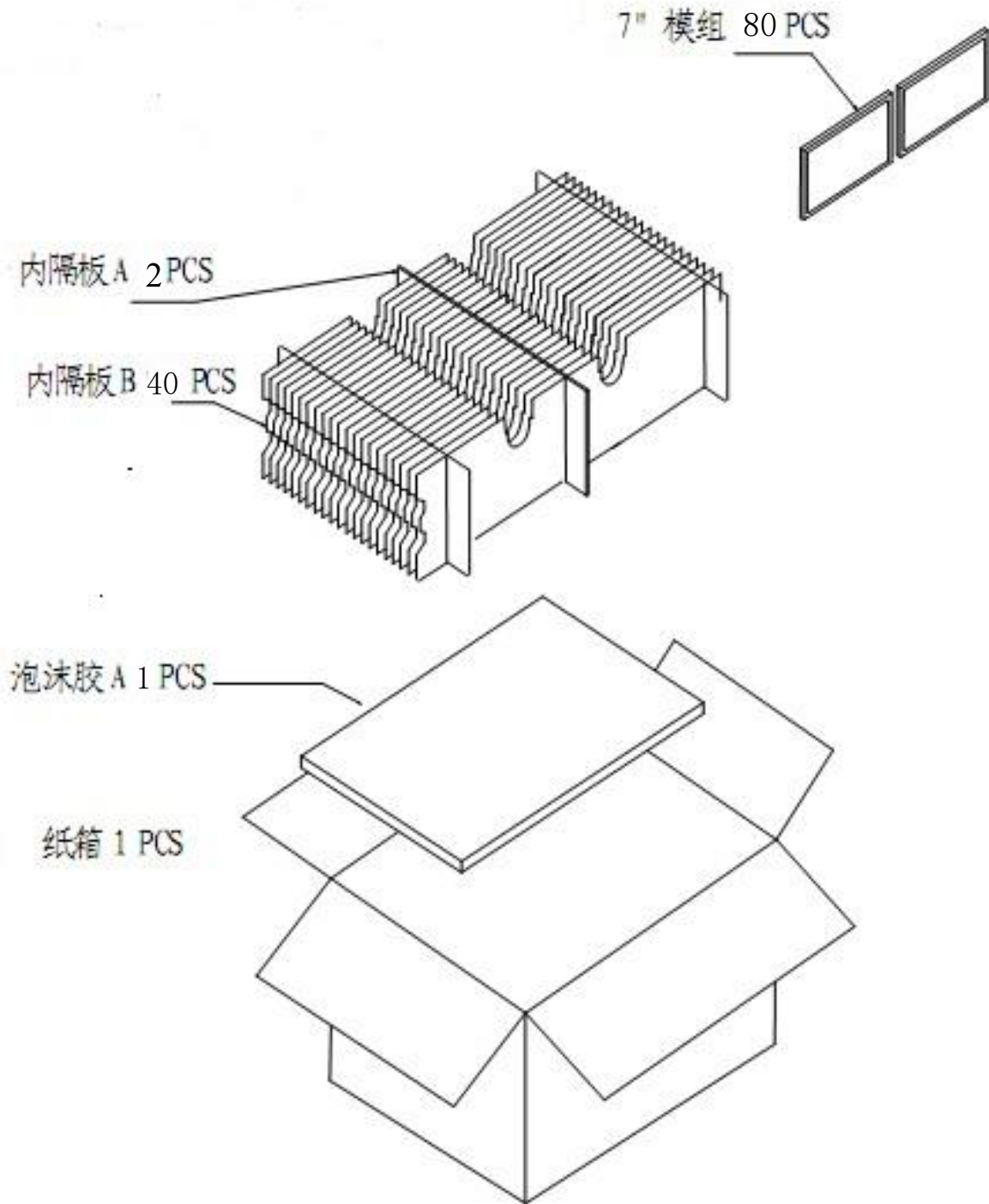
8.0 Outline dimension





9.0 Packing form

9.1 Packing form 1





10.0 General Precaution

10.1 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.

10.2 Assembly Precaution

10.2.1 Please use the mounting hole on the module side in installing and do not bending or wrenching LCD in assembling. And please do not drop, bend or twist LCD module in handling.

10.2.2 Please design display housing in accordance with the following guide lines.

10.2.2.1 Housing case must be destined carefully so as not to put stresses on LCD all sides and not to wrench module. The stresses may cause non-uniformity even if there is no non-uniformity statically.

10.2.2.2 Keep sufficient clearance between LCD module back surface and housing when the LCD module is mounted. The clearance in the design is recommended taking into account the tolerance of LCD module thickness and mounting structure height on the housing.

10.2.3 Please do not push or scratch LCD panel surface with any-thing hard. And do not soil LCD panel surface by touching with bare hands. (Polarizer film, surface of LCD panel is easy to be flawed.)

10.2.4 Please do not press any parts on the rear side such as source IC, gate IC, and FPC during handling LCD module. If pressing rear part is unavoidable, handle the LCD module with care not to damage them.

10.2.5 Please wipe out LCD panel surface with absorbent cotton or soft cloth in case of it being soiled.

10.2.6 Please wipe out drops of adhesives like saliva and water on LCD panel surface immediately. They might damage to cause panel surface variation and color change.

10.2.7 Please do not take a LCD module to pieces and reconstruct it. Resolving and reconstructing modules may cause them not to work well.

10.3 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.

10.4 Breakage of LCD Panel

10.4.1 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.

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

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

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



10.5 Absolute Maximum Ratings and Power Protection Circuit

10.5.1 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.

10.5.2 Please do not leave LCD module in the environment of high humidity and high temperature for a long time.

10.5.3 It's recommended employing protection circuit for power supply.

10.6 Operation

10.6.1 Do not touch, push or rub the polarizer with anything harder than HB pencil lead. Use fingerstalls of soft gloves in order to keep clean display quality, when persons handle the LCD module for incoming inspection or assembly.

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

10.6.3 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.

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

10.7 Static Electricity

10.7.1 Protection film must remove very slowly from the surface of LCD module to prevent from electrostatic occurrence.

10.7.2 Because LCD module uses CMOS-IC on TFT-LCD panel, it is very weak to electrostatic discharge. Please be careful with electrostatic discharge.

10.7.3 Persons who handle the module should be grounded through adequate methods.

10.8 Disposal

When disposing LCD module, obey the local environmental regulations.

10.9 OTHERS

10.9.1 A strong incident light into LCD panel might cause display characteristics' changing inferior because of polarizer film, color filter, and other materials becoming inferior.

Please do not expose LCD module direct sunlight land strong UV rays.

10.9.2 Please pay attention to a panel side of LCD module not to contact with other materials in preserving it alone.

10.9.3 For the packaging box, please pay attention to the followings:

10.9.3.1 Packaging box and inner case for LCD are designed to protect the LCDs from the damage or scratching during transportation. Please do not open except picking LCDs up from the box.

10.9.3.2 Please do not pile them up more than 6 boxes. (They are not designed so.) And please do not turn over.

10.9.3.3 Please handle packaging box with care not to give them sudden shock and vibrations. And also please do not throw them up.

10.9.3.4 Packing box and inner case for LCDs are made of cardboard. So please pay attention not to get them wet. (Such like keeping them in high humidity or wet place can occur getting them wet.)