



SPECIFICATION FOR LCD Module PV08003TD25F-CO

MODULE:	PV08003TD25F-C
CUSTOMER:	

KINGTECH	INITIAL	DATE
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CUSTOMER	INITIAL	DATE
APPROVED BY		



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V1.0	2021-12-10	-	First Issued.	LIN



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1. General Description

* DESCRIPTION

PV08003TD25F-CO is a color active matrix TFT (Thin Film Transistor) LCD (liquid crystal display) that uses amorphous silicon TFT as a switching device. This model is composed of a Transmissive type TFT-LCD Panel, driver circuit, back-light unit. The resolution of a 8.0" TFT-LCD contains 800 x 1280 pixels, and can display up to 16.7M colors.

* Features

- Low Input Voltage: VCC: 2.5~3.3V
- Display Colors of TFT LCD: 16.7M colors
- Interface: MIPI-4 Lanes
- Internal Power Supply Circuit.

General Information Items	Specification	Unit	Note
	Main Panel		
Display area(AA)	107.64(H) *172.22(V) (8.0inch)	mm	-
Driver element	a-Si TFT active matrix	-	-
Display colors	16.7M	colors	-
Number of pixels	800(RGB) *1280	dots	-
Pixel arrangement	RGB vertical stripe	-	-
Pixel pitch	0.04485(H) *0.13455(V)	mm	-
Viewing angle	All	o'clock	-
Drive IC	ILI9881C	-	-
Display mode	Normally black	-	-
Operating temperature	-10~+60	°C	-
Storage temperature	-20~+70	°C	-

Mechanical Information

Item		Min.	Typ.	Max.	Unit	Note
Module size	Horizontal(H)	-	125.6	-	mm	±0.1
	Vertical(V)	-	231.6	-	mm	±0.1
	Depth(D)	-	4.74	-	mm	±0.3
Weight		-	TBD	-	g	-



3. Pin Description

LCM PIN

Pin NO.	Symbol	Function
1	VDD3.3V	Power supply 3.3V
2	VDD3.3V	Power supply 3.3V
3	RESET	Hardware reset pin
4	GND	Ground
5	MIPI-D0-	DSI_D0- are differential data signal line
6	MIPI-D0+	DSI_D0+ are differential data signal line
7	GND	Ground
8	MIPI-D1-	DSI_D1- are differential data signal line
9	MIPI-D1+	DSI_D1+ are differential data signal line
10	GND	Ground
11	MIPI-CLK-	DSI_CLK+- are differential data signal line
12	MIPI-CLK+	DSI_CLK+ are differential data signal line
13	GND	Ground
14	MIPI-D2-	DSI_D2- are differential data signal line
15	MIPI-D2+	DSI_D2+ are differential data signal line
16	GND	Ground
17	MIPI-D3-	DSI_D3- are differential data signal line
18	MIPI-D3+	DSI_D3+ are differential data signal line
19	GND	Ground
20	PWMO	PWM control the LED backlight
21	GND	Ground
22	LED-	Backlight-
23	LED-	Backlight-
24	LED+	Backlight+
25	LED+	Backlight+

CTP PIN

1	GND	L	Ground
2	SDA	H/L	Serial data input pin
3	SCL	H/L	Serial clock input
4	REST	H/L	Hardware reset pin
5	INT	H/L	Interrupt pin
6	VDD	H/L	Power supply 2.8V

4. ELECTRICAL CHARACTERISTICS



4.1 ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Values		Unit	Remark
		Min	Max.		
Supply Voltage for Logic circuit	VDDIO	-	-	V	
Supply Voltage for analog circuit	Vcc	3.0	3.6	V	

4.2 DC ELECTRICAL CHARACTERISTICS

4.2.1 OPERATING CONDITIONS

Typical Operating Conditions (Ta=25°C)

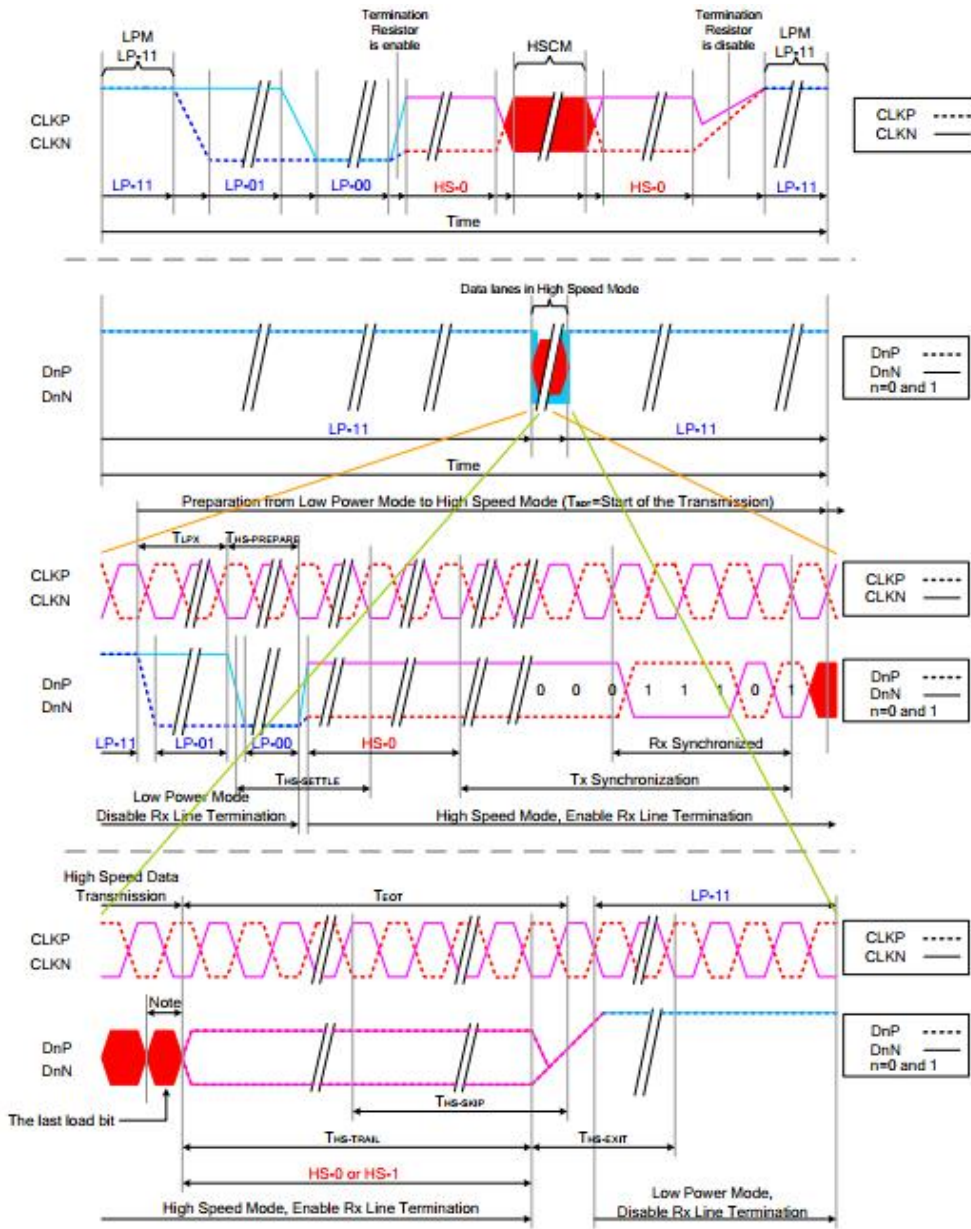
Item	Symbol	Values			Unit	Remark
		Min	Typ	Max.		
Power Supply	Vcc	3.0	3.3	3.6	V	
Power Supply	VDDIO	-	-	-	V	
Normal mode Current consumption	Icc	-	-	130	mA	VCC=3.3V
TFT Gate ON Voltage	VGH	8	-	18	V	
TFT Gate OFF Voltage	VGL	-18	-	-7	V	

4.2.2 BACKLIGHT UNIT (GND=0V)

Item	Symbol	Values			Unit	Remark
		Min	Typ	Max.		
Forward supply Voltage	Vf	-	9.6	-	V	
Forward supply Current	If	-	140	-	mA	
LCM+CTP Luminance	Lv	330	380	-	cd/m ²	I _B =140mA
Uniformity	/	80			%	-



4.3 MIPI Interface Characteristics



5. OPTICAL CHARACTERISTICS

(LCD MONOMER PARAMETERS)



Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark				
Viewing Angle range	Horizontal	Θ_3	CR > 10	-	80	-	Deg.	WV-Pol Note 1				
		Θ_9		-	80	-	Deg.					
	Vertical	Θ_{12}		-	80	-	Deg.					
		Θ_6		-	80	-	Deg.					
Luminance Contrast ratio		CR	$\Theta = 0^\circ$	900	1200	-		Note 2				
Cell Transmittance		Tr		-	4.8	-	%	W/O APF				
White Chromaticity		x_w		TYP. - 0.03	TYP. + 0.03	0.306			Note 3 Base on C Light			
		y_w				0.360						
Reproduction of color (C light)	Red	R_x				0.646						
		R_y				0.339						
	Green	G_x				0.271						
		G_y				0.581						
	Blue	B_x				0.138						
		B_y				0.158						
Color Gamut (C light)			-			60%				-	%	NTSC
Response Time (Rising + Falling)		T_{RT}	Ta= 25° C $\Theta = 0^\circ$			-				-	35	ms



Note :

1. Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface .
2. Contrast measurements shall be made at viewing angle of $\Theta = 0$ and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state . Luminance Contrast Ratio (CR) is defined mathematically.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

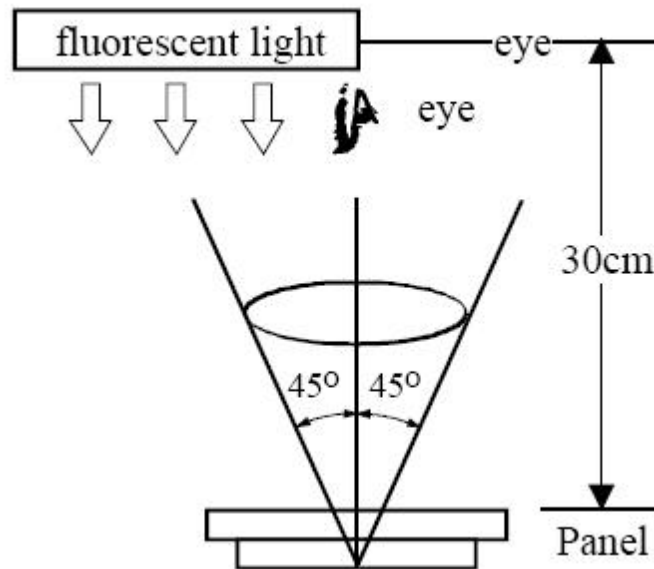
3. Transmittance is the Value with Polarizer.
4. The color chromaticity coordinates specified in Table 6 shall be calculated from the spectral data measured with all pixels first in red, green, blue and white. Calculation is based on C light.
5. The electro-optical response time measurements shall be made as FIGURE 6 by switching the "data" input signal ON and OFF. The times needed for the luminance to change from 10% to 90% is T_r , and 90% to 10% is T_d .

6. QUALITY SPECIFICATIONS

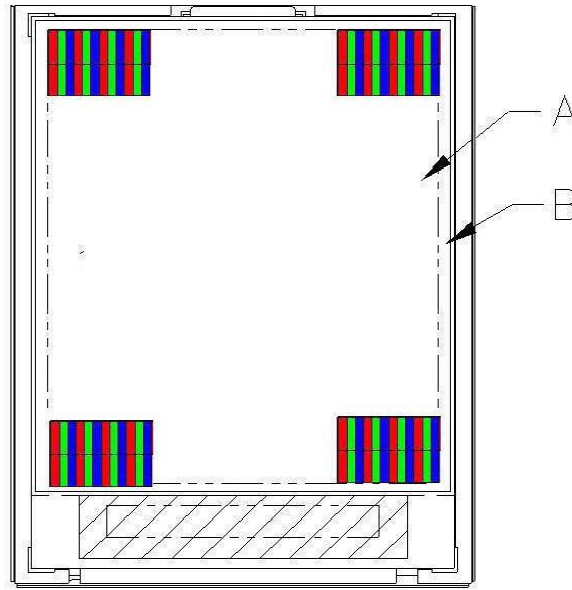


6.1 INSPECTION CONDITION

- (1) Inspect under 300~500Lux fluorescent light, leaving 30~35cm between panels and eyes, and between panels and lights.
- (2) Inspection condition is $23\pm 5^{\circ}\text{C}$, $50\pm 20\%RH$ maximum.



6.2 DEFINITION OF AREA





A Area : Viewing area.


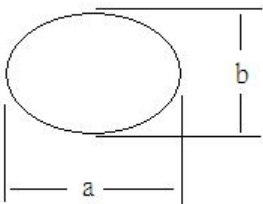
B Area : Out of viewing.(outside viewing area)



6.3 INSPECTION SPECIFICATION

NO	Item	Acceptable specification	Judgment Criterion
1	Electrical Testing	<p>a) sub pixel classification</p> <ul style="list-style-type: none"> ● Sub Pixel: Number of sub pixel doesn't exceed one dot. <div style="text-align: center;">  <p>Sub Pixel (Dot)</p> </div> <p>a> Dark dot ----one Allowed b> Bright dot ---- one Allowed</p> <ul style="list-style-type: none"> ● Pixel : Three dots link together doesn't exceed ones <div style="text-align: center;">  <p>Pixel</p> </div> <p>b) Leakage to light</p> <ul style="list-style-type: none"> ● Leakage to light be not allowed. <p>c) Picture to shake</p> <ul style="list-style-type: none"> ● Picture had shake, twinkle and noise etc. instable of defect that be not allowed. <p>d) Function</p> <ul style="list-style-type: none"> ● No display or No function. ● Source Line, Gate Line. ● Contrast Ratio ● Current consumption exceeds product specifications. ● Display malfunction. 	<p>$N \leq 3$</p> <p>$N \leq 1$</p> <p>$N=0$</p> <p>$N=0$</p> <p>$N=0$</p>
2	Mechanical Dimension	<p>2-1 Mechanical Dimension exceeds product specifications. 2-2 Out of frame and boss of plastic changed shape that be not allowed.</p>	<p>$N=0$</p>



NO	Item	Acceptable specification	Judgment Criterion																																												
3	Cosmetic Inspection	<p>3-1 Blemish: Line shapes of defect</p> <table border="1" data-bbox="363 389 1313 741"> <thead> <tr> <th>Length</th> <th>Width</th> <th>Acceptable number</th> <th>Mini. space</th> </tr> </thead> <tbody> <tr> <td>---</td> <td>$W \leq 0.08$</td> <td>Ignore</td> <td rowspan="3">10MM</td> </tr> <tr> <td>$L \leq 10MM$</td> <td>$0.08 < W \leq 0.10$</td> <td>3</td> </tr> <tr> <td>$L \leq 10MM$</td> <td>$0.10 < W \leq 0.20$</td> <td>1</td> </tr> <tr> <td>--</td> <td>$W > 0.20$</td> <td>Not allowed</td> <td>---</td> </tr> </tbody> </table> <p>L: length(mm) W: width(mm)</p>  <p>3-2 Blemish: dot shapes of defect.</p> <table border="1" data-bbox="434 999 1281 1234"> <thead> <tr> <th>Dimension</th> <th>Acceptable number</th> <th>Mini. Space</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.20$</td> <td>Ignore</td> <td>---</td> </tr> <tr> <td>$0.20 < \Phi \leq 0.25$</td> <td>4</td> <td rowspan="2">5 m m</td> </tr> <tr> <td>$0.25 < \Phi \leq 0.35$</td> <td>3</td> </tr> <tr> <td>$\Phi > 0.35$</td> <td>0</td> <td>---</td> </tr> </tbody> </table> <p>3-3 Polarizer Bubble</p> <table border="1" data-bbox="434 1308 1281 1473"> <thead> <tr> <th>Dimension</th> <th>Acceptable number</th> <th>Mini. Space</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.30$</td> <td>Ignore</td> <td>---</td> </tr> <tr> <td>$0.30 < \Phi \leq 0.40$</td> <td>4</td> <td>15 m m</td> </tr> <tr> <td>$\Phi > 0.40$</td> <td>0</td> <td>---</td> </tr> </tbody> </table> <p>Foreign Substances</p>  <p>$\Phi = (a+b)/2$</p>	Length	Width	Acceptable number	Mini. space	---	$W \leq 0.08$	Ignore	10MM	$L \leq 10MM$	$0.08 < W \leq 0.10$	3	$L \leq 10MM$	$0.10 < W \leq 0.20$	1	--	$W > 0.20$	Not allowed	---	Dimension	Acceptable number	Mini. Space	$\Phi \leq 0.20$	Ignore	---	$0.20 < \Phi \leq 0.25$	4	5 m m	$0.25 < \Phi \leq 0.35$	3	$\Phi > 0.35$	0	---	Dimension	Acceptable number	Mini. Space	$\Phi \leq 0.30$	Ignore	---	$0.30 < \Phi \leq 0.40$	4	15 m m	$\Phi > 0.40$	0	---	
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NO	Item	Acceptable specification	Judgment Criterion			
3	Cosmetic Inspection	3-4 Scratch ● Sensate scratch not allowed. ● Impassive scratch as below. <div style="text-align: right; color: red;">Unit:mm</div>				
		Length		Width	Acceptable number	Mini. space
		-----		$W \leq 0.08$	Ignore	10 m m
		$L \leq 10$		$0.08 < W \leq 0.10$	5	
		$L \leq 10$		$0.10 < W \leq 0.18$	4	
		----		$0.18 < W$	Not allowed	---
		$L > 3.5$		----	Not allowed	
4	Package	4-1 Mixed product types 4-2 Shipping q'ty should be the same as "shipping notice form" q'ty. 4-3 Outer box can't broken.	N=0			
5	LCD Mura	LCD Mura according to ND 5% keep out to determine, if keep out distance at 30cm be seen by eyes is NG, otherwise will be ok if invisible.				

7.RELIABILITY

Test Item	Test Condition
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High Temperature Operation	60°C for 96 hours
Low Temperature Operation	-10°C for 96 hours
High Temperature Storage	70°C for 96 hours
Low Temperature Storage	-20°C for 96 hours
High Temperature Operation Humidity Operation	60°C, 90%RH for 72 hours
Thermal Shock	-10°C (30min) ~+25°C (5min)~ +60°C (30min) for 10 cycles
Vibration Test (No Operation)	Frequency: 10~55Hz Amplitude:1.0mm Sweep Time: 11min Test Period: 6 Cycles for each direction of X, Y, Z
Static electricity test	Touch 4KV,air touch 8KV



8. HANDLING PRECAUTION

8.1 SAFETY

- (1) Do not swallow any liquid crystal, even if there is no proof that liquid crystal is poisonous.
- (2) If the LCD panel breaks, be careful not to get liquid crystal to touch your skin.
- (3) If skin is exposed to liquid crystal, wash the area thoroughly with alcohol or soap.

8.2 STORAGE CONDITIONS

- (1) Store the panel or module in a dark place where the temperature is $23\pm 5^{\circ}\text{C}$ and the humidity is below $50\pm 20\%\text{RH}$.
- (2) Store in anti-static electricity container.
- (3) Store in clean environment, free from dust, active gas, and solvent.
- (4) Do not place the module near organics solvents or corrosive gases.
- (5) Do not crush, shake, or jolt the module.

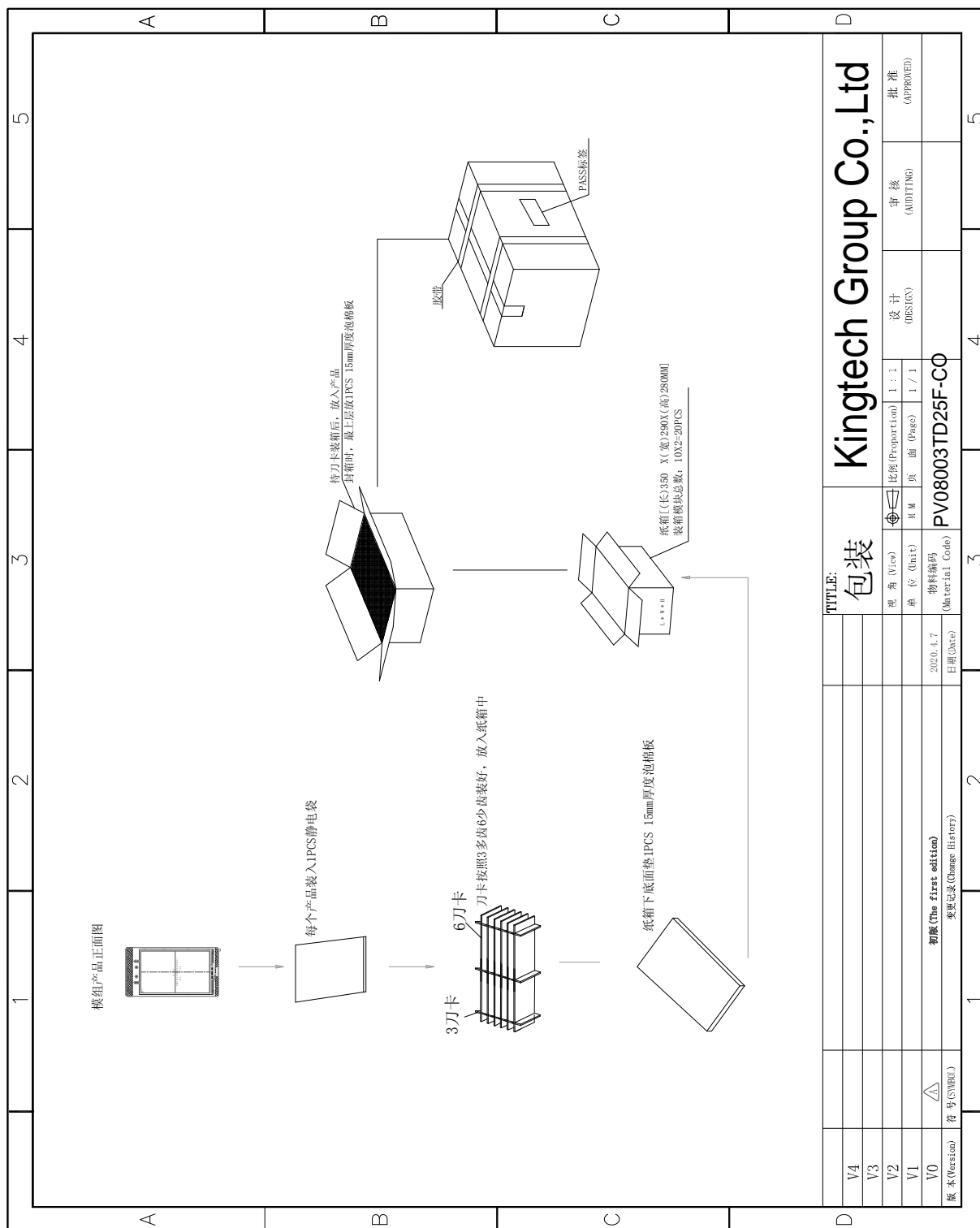
8.3 HANDLING PRECAUTIONS

- (1) Avoid static electricity which can damage the CMOS LSI.
- (2) The polarizing plate of the display is very fragile. So, please handle it very carefully.
- (3) Do not give external shock.
- (4) Do not apply excessive force on the surface.
- (5) Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of plate.
- (6) Do not use ketonic solvent & Aromatic solvent, use with a soft cloth soaked with a cleaning naphtha solvent.
- (7) Do not operate it above the absolute maximum rating.
- (8) Do not remove the panel or frame from the module.

8.4 WARRANTY

- 1) The period is within twelve months since the date of shipping out under normal using and storage conditions.
- 2) According to KINGTECH TFT LCD quality standard, KINGTECH will rework or exchange for functional defect goods since within one year.

9. Packing



TITLE: 包装		Kingtech Group Co., Ltd	
视角 (View)	M M	比例 (Proportion)	1 : 1
单位 (Unit)		页 数 (Page)	1 / 1
物料编码 (Material Code)	PV08003TD25F-C0		
日期 (Date)	2020.4.7		
版本 (Version)	初版 (The first edition)		
符号 (Symbol)	变更记录 (Change History)		
审核 (AUDITING)	设计 (DESIGN)	批准 (APPROVED)	