

Customer Acceptance Specification

Customer 客戶名稱	
Model No. 產品型號	PJT240H03H25-200P44N-A(PJ24013A)
Product type 產品內容	MODE: Active Matrix TFT, Transmissive type. LCD Module : 240×RGB×320 Dots Screen Size: 2.4(Diagonal)
Remarks 備註欄	
Signature by Customer: 客戶確認簽章:	

	signature	Date
Design	刘晓强	11.08.22
Check		
Approved		

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Version	Date	Description	Modification	Check
A	11-08-22	New Version		刘晓强

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Specification of LCD Module Type

Model No: PJ24013A

1. General Description

MAIN:

Display type (Color): [240(R.G. B)×320 Dots Matrix TFT LCD Module]
Polarizer Mode: [transmissive]
View Direction: [12 O'clock]
IC: [COG ILI9341]
Backlight: [4 LED B/L White]
INTERFACE: [parallel 16bits 8080 system]

2. Mechanical Specifications

The mechanical detail is shown in Fig 1 and summarized in Table 1 below.

Table 1

ITEM	STANDARD VALUES	UNITS
LCD type	TFT	-
Dot arrangement	240(R.G.B)×320	dots
Module size	42.72(W) ×60.26(H)×2.55(T)	mm
Active area	36.72 (W) ×48.96 (H)	mm
Dot pitch	0.153 (W) ×0.153 (H)	mm
Viewing direction	12 O'clock	

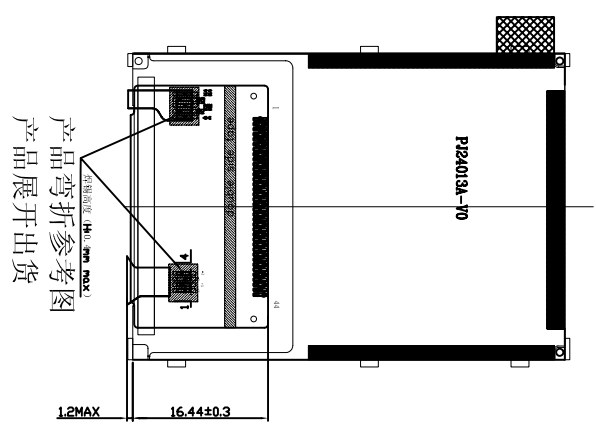
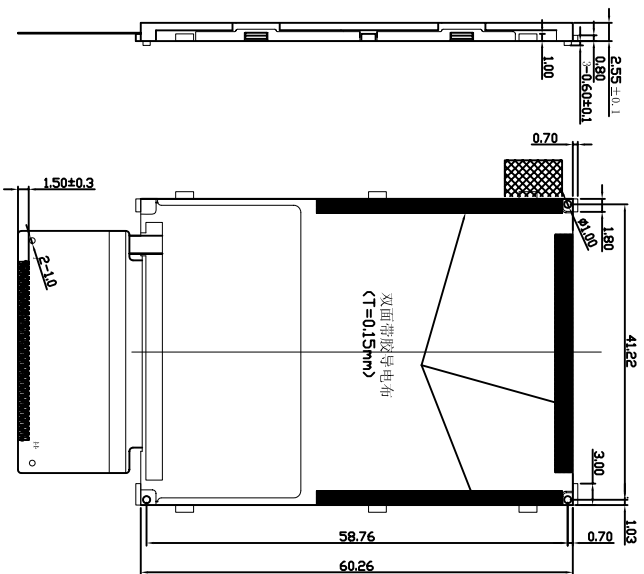
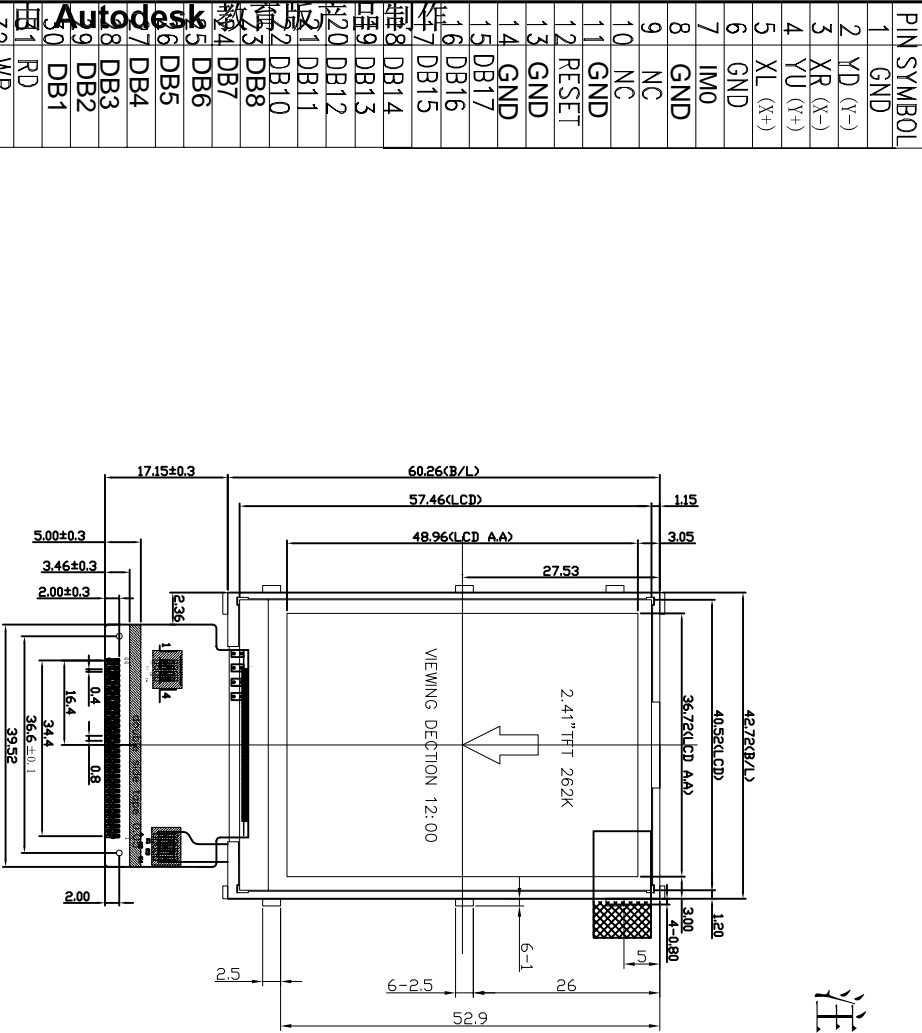
FIG 1

CUSTOMER'S MODEL NO.:

Autodesk 教育版产品制作
CUSTOMER APPROVED:

DATE:

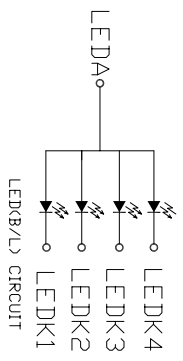
注：红色为挂台，可以除掉



1	GND
2	YD (V-)
3	XR (X-)
4	YU (Y+)
5	XL (X+)
6	GND
7	IM0
8	GND
9	NC
10	NC
11	GND
12	RESET
13	GND
14	GND
15	DB17
16	DB16
17	DB15
18	DB14
19	DB13
20	DB12
21	DB11
22	DB10
23	DB8
24	DB7
25	DB6
26	DB5
27	DB4
28	DB3
29	DB2
30	DB1
31	RD
32	WR
33	RS
34	CS
35	GND
36	GND
37	VCC
38	VCC
39	LED-K4
40	LED-K3
41	LED-K2
42	LED-K1
43	LED-A
44	GND

- NOTE:
1. GENERAL TOLERANCE: ±0.2.
 2. (...) IS REFERENCE DIMENSION.
 3. * CRITICAL DIMENSION
 4. COMPLIABLY ROHS.

LED CIRCUIT DIAGRAM:



VER.	SYMBOL	REVISION RECORD	DATE	DRAWN BY	CHECKED BY	APPROVED BY
1	△	初版设计	JUL 2011.08.22			
2						
3						
4						
5						

深圳鹏基光电有限公司 SHENZHEN PANGJI OPTOELECTRONICS CO.,LTD		TITLE: LCM OUTLINE DIMENSION		PRODUCT MODEL: P1-QVGA-24013A	
DRW.N0: P124013A-V0		Ver: V0		SCALE: N.T.S.	
DRW.N BY	刘德强	DATE	2011.08.22	UNIT	mm
CHECKED BY		DATE		PRO.(3):	
DRAWN BY		DATE		SHEET	1/1

3. Absolute Maximum Ratings (Ta=25°C)

Table 2

ITEM	SYMBOL	MIN	MAX	UNITS	NOTE
Power Supply Voltage (1)	VDD	-0.3	+4.0	V	
Power Supply Voltage (2)	VGH	+9.0	+16.5	V	
Power Supply Voltage (3)	VGL	-16.5	-4.0	V	
Input Voltage	VI	-0.3	VDD+0.3	V	
Operating Temperature	Topr	-20	70	°C	
Storage Temperature	Tstg	-30	80		

Notes:

1. If the LSI is used above these absolute maximum ratings, it may become permanently damaged. Using the LSI within the following electrical characteristics limit is strongly recommended for normal operation. If these electrical characteristic conditions are also exceeded, the LSI will malfunction and cause poor reliability.
2. VDD, GND must be maintained
3. DC characteristics and AC characteristics of shipping chips and shipping wafer are guaranteed at 85°C.

4. Electrical Specifications

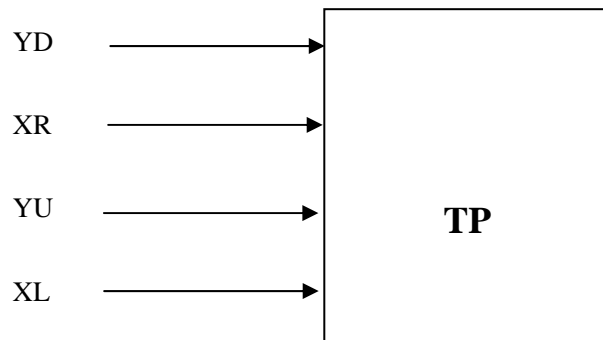
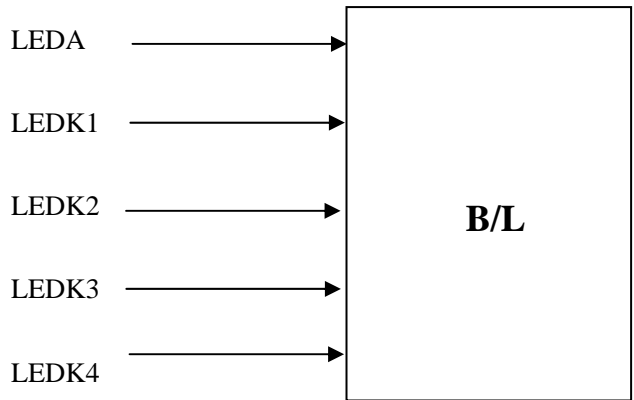
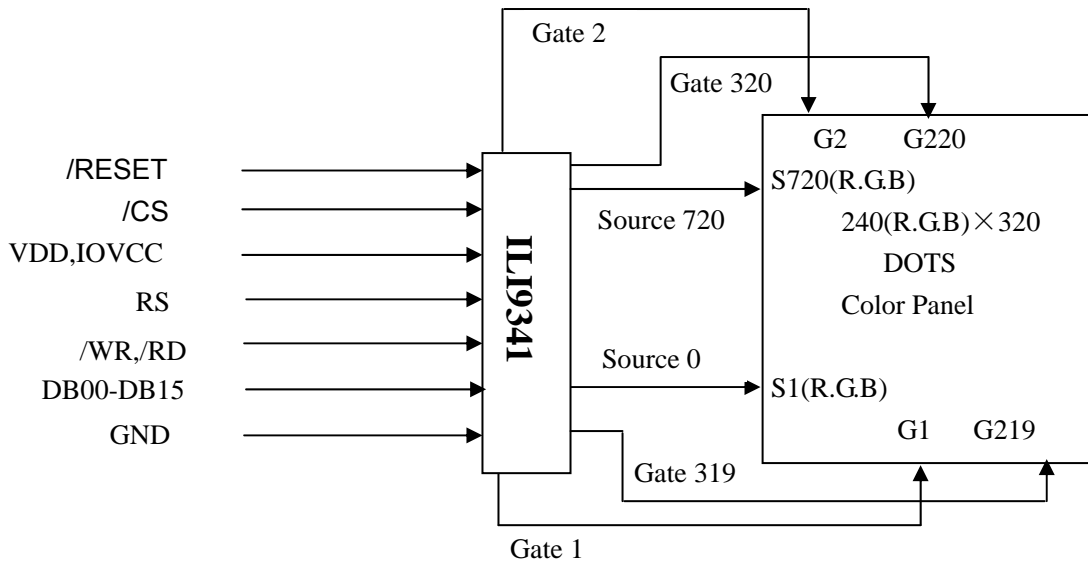
4.1 Interface signals

Table 3: Pin description of FPC interface

PIN NO.	PIN NAME	DESCRIPTION
1	GND	Ground pin
2	Y-(YD)	Touch panel interface (Nc)
3	X+(XR)	Touch panel interface (NC)
4	Y+(YU)	Touch panel interface (NC)
5	X-(XL)	Touch panel interface (NC)
6	GND	Ground pin
7	IM0	NC /Short to ground
8	GND	Ground pin
9-10	NC	Pin NC
11	GND	Ground pin
12	RESET	Reset signal: Active "L"
13	GND	Ground pin
14	GND	Ground pin
15-22	DB17-DB10	LCD data bus
23-30	DB1-DB8	LCD databus
31	RD	LCM read signal: Active "L"
32	WR	LCM write signal: Active "L"
33	RS	LCD register selector
34	CS	Chip selection input pin: Active "L"
35	GND	Ground pin
36	GND	Ground pin
37	VCC	Power supply for system 2.8V
38	VCC	Power supply for system 2.8V
39	LED-4	Backlight negative input pin
40	LED-3	Backlight negative input pin
41	LED-2	Backlight negative input pin
42	LED-1	Backlight negative input pin
43	LED-A	Backlight positive input pin
44	GND	Ground pin

4.2 BLOCK DIAGRAM

Fig 2



4.3 Typical Electrical Characteristics

Table 4:

ITEM	SYMBOL		CONDITIONS	MIN	TYP	MAX	UNITS
Power-supply voltage For LCD	TFT LCD	VGH	At 25°C	9.0	--	16.5	V
		VGL		-16.5	--	-4	
	VDD-GND			-	2.8	3.3	
Input voltage for LCD	V _{IH}		“High” level	0.8VDD	—	VDD	
	V _{IL}		“Low” level	GND	—	0.2VDD	
Supply current for LCD	VDD		VDD=2.8V	—		10	mA

Note 1: The supply voltage for VLCD has to be adjusted by software.

4.4 B/L Characteristics

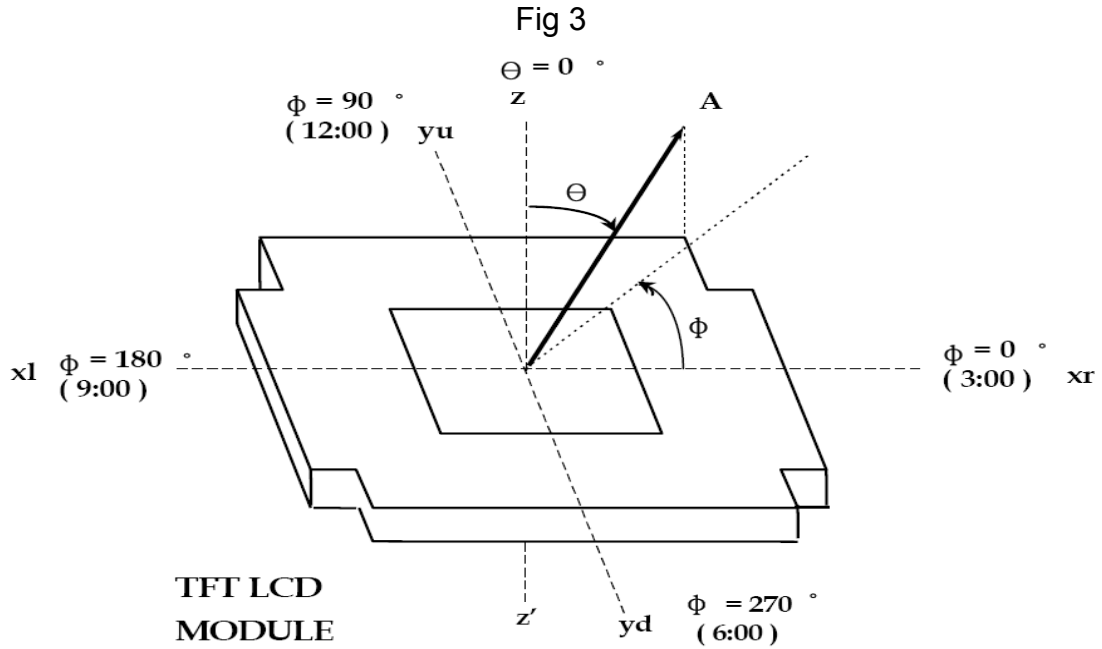
Table 5:

PARAMETER	SYMBOL	MIN	TYP	MAX	UNITS	CONDITION
Lamp Voltage	V _L	--	3.2	3.5	V	Each ILED=60mA
Back Light	--	--	3200	--	Cd/m ²	

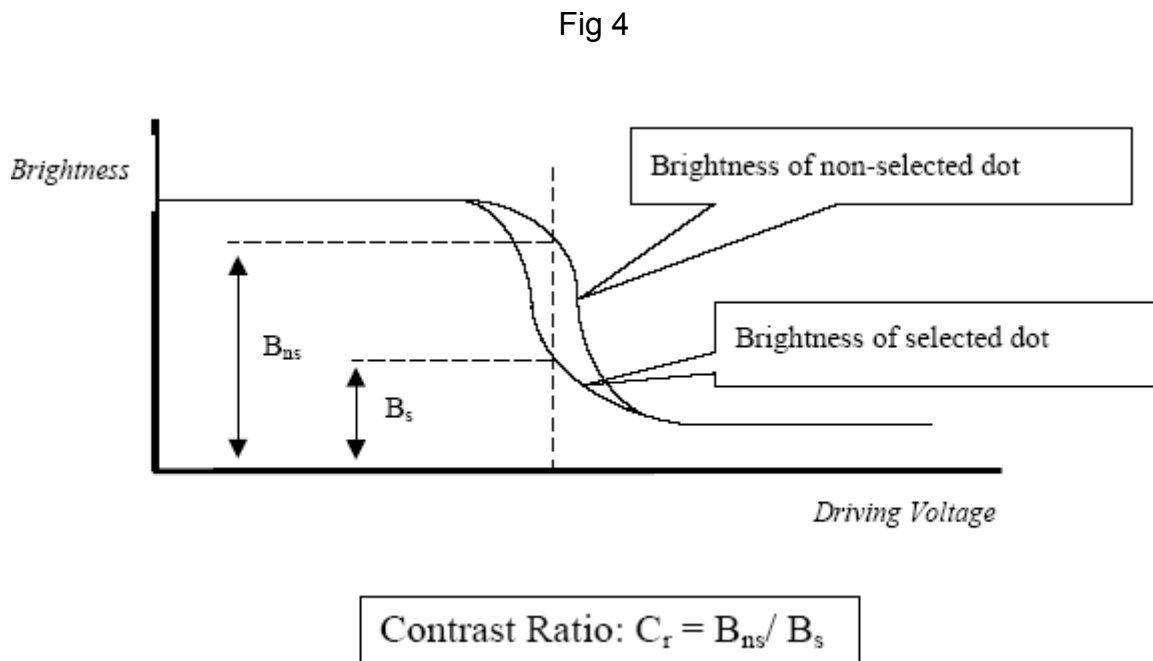
※ LEDs in 4- parallel of B/L module

5. Optical Characteristics Definition

a.) Viewing Angle θ and ϕ

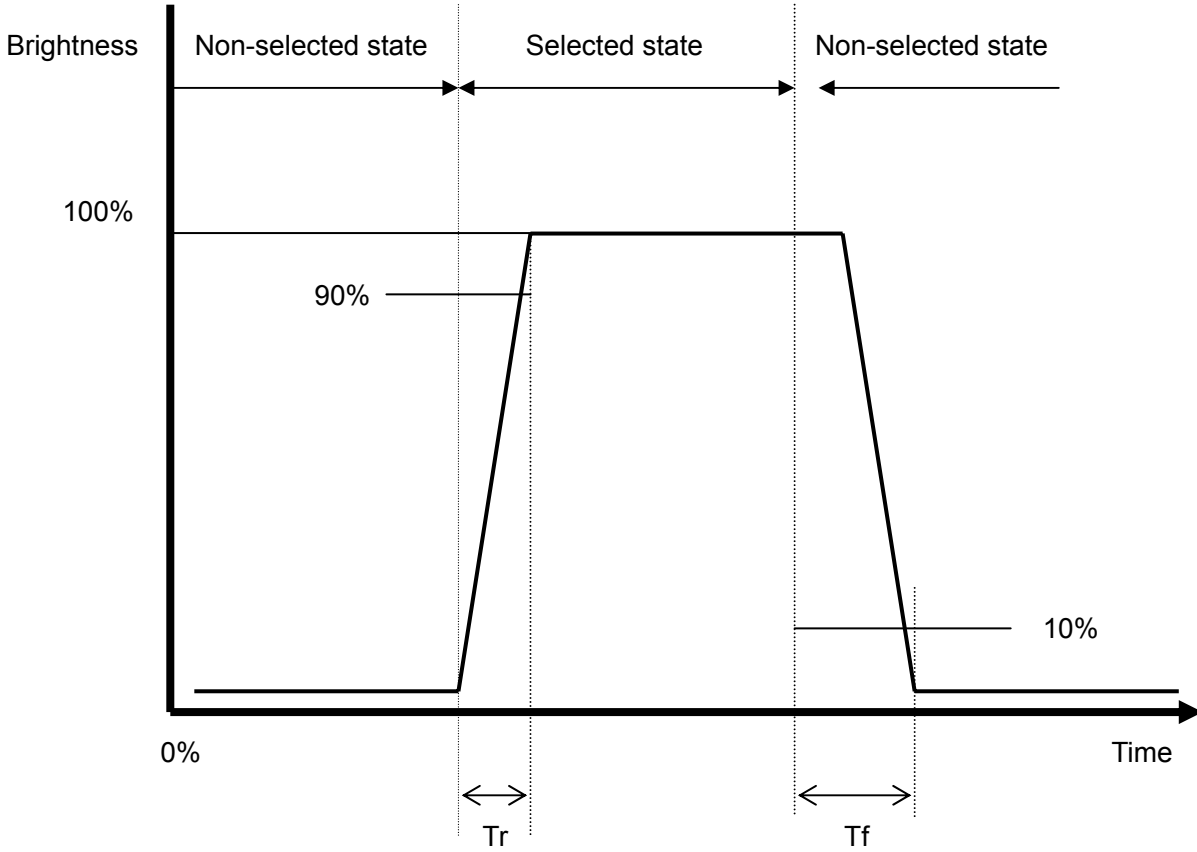


b.) Contrast Ratio



c.) Response Time

Fig 5
Negative TYPE



NOTE:

- 1、 T_r is the time it takes to change from non-selected state with relative luminance 0% to selected state with relative luminance 90%.
- 2、 T_f is the time it takes to change from selected state with relative luminance 100% to non-selected state with relative luminance 10%.

5.1 LCD Panel

Table 6:

Parameter	Symbol	Values			Unit
		Min	Typ	Max	
*1) Threshold Voltage	Vsat	1.90	2.15	2.40	V
	Vth	0.90	1.10	1.30	V
*2) Transmittance	T(%)	-	16.5	-	%
*1) Contrast Ratio	C/R	300	350	-	
*1) Response Time	Tr+Tf	-	25	40	msec
*3) CIE Color Coordinate	Rx		0.651		-
	Ry		0.332		-
	Gx		0.301		-
	Gy		0.585		-
	Bx		0.133		-
	By		0.136		-
	Wx		0.309		-
	Wy		0.344		-
*1) Viewing Angle	Θ_l	-	45	-	Degree
	Θ_r	-	45	-	
	Θ_u	-	35	-	
	Θ_d	-	15	-	

6 RELIABILITY CONDITIONS

Table 7:

ITEM	CONDITIONS	CRITERIA
High temperature operation	70°C,120Hr	1. No defect in cosmetic and operational functions except for polarizer. 2. Total current consumption below double of initial value 3. Optical characteristics value must be in initial spec. range.
Low temperature operation	-20°C,120Hr	
High humidity storage	60°C,95%RH,120Hr	
High temperature storage	80°C,120Hr	
Low temperature storage	-30°C,120Hr	
Temperature cycle	25°C → -20°C → 25°C → 70°C 5(min) 30(min) 5(min) 30(min) 15 cycles,55~60%RH	

NOTE:

- 1、 Operation test should be mounted with the driver IC, we hereby provide the operation test conditions with the square ac waveform.
- 2、 The test LCD cell shall be inspected 2hrs latter storage at room temperature & humidity after it was removed from the chambers.
- 3、 No dew condensations would be observed.

7. Important Notice

The information presented in this specification has been carefully checked and is believed to be accurate, however, no responsibility is assumed for inaccuracies. PENGJI reserves the right to make changes to nay specifications without further notice for performance, reliability, production technique and other considerations. PENGJI does not assume any liability arising out of the application or use of products herein. Please see Limited Warranty in the previous section.

“PENGJI Limited reserves the right to change this specification. ”

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