POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	PTC
SAMPLE CODE	:	SH102600T002-IBC
MASS PRODUCTION CODE	:	PH102600T002-IBC
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	002
DRAWING NO. (Ver.)	:	JLMD- PH102600T002-IBC _001
PACKAGING NO. (Ver.)	:	JPKG- PH102600T002-IBC _001

Customer Approved

Date:

POWERTIP
2015.05.06
JS RD APPROVED

Approved	Checked	Designer
閆偉	劉進	譚超敏

□ Preliminary specification for design input

■ Specification for sample approval

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History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
01/19/2015	01	001	New Drawing	-	譚超敏
04/25/2015	01	002	New Sample	-	譚超敏

Total: 31 Page

Contents

1. SPECIFICATIONS

1.1 Features

Main LCD Panel

Item	Standard Value
Display Type	1024 * 3(RGB) * 600
LCD Type	a-Si TFT , Normally White , Transmissive
Screen size(inch)	7 (Diagonal)
Viewing Direction	6 O'clock
Color configuration	R.G.B. - stripe
Backlight	White LED
Interface	LVDS
Driver IC	-
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer web site : http://www.powertip.com.tw/news.php?area_id_view=1085560481/

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	192.96 (L) * 121.4 (W) * 4.575 (H)	mm
TP View Area	154.88 (L) * 91.0(W)	mm
LCD Active Area	153.6(L) * 90.0(W)	mm

Note : For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Module (* 1)

Item	Symbol	Condition	Min.	Max.	Unit
System Power Supply Voltage	DV_{DD}	-	-0.3	5.0	V
	AV_{DD}	-	6.5	13.5	
	V_{GH}	-	-0.3	42.0	
	V_{GL}	-	-20	0.3	
	V_{GH} - V_{GL}	-	-	40.0	
Operating Temperature	TOP	-	-20	70	°C
Storage Temperature	TST	-	-30	80	°C
Storage Humidity	H_D	Ta ≦ 60 °C	20	90	%RH

Note 1: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

1.4 DC Electrical Characteristics

Module (*1)

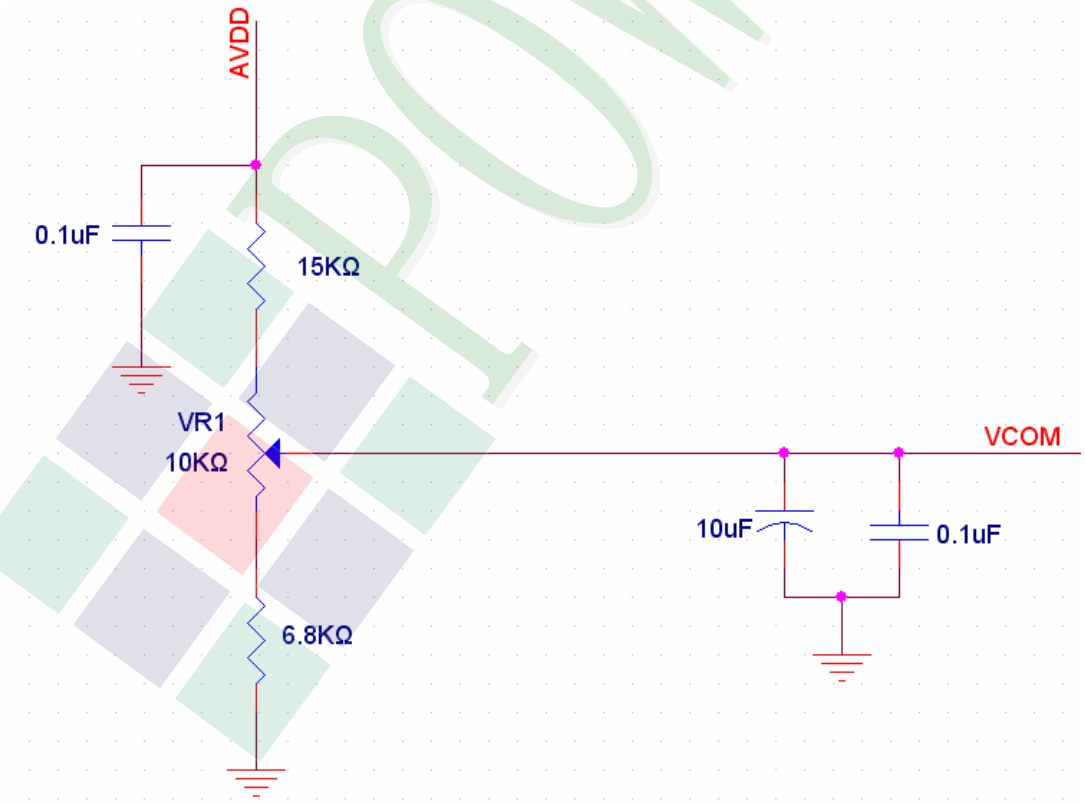
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	DV_{DD}*1	-	3.0	3.3	3.6	V
	AV_{DD}	-	10.8	11	11.2	
	V_{GH}	-	19.7	20	20.3	
	V_{GL}	-	-6.5	-6.8	-7.1	
Input Signal Voltage	Vcom*2	-	2.7	3.7	4.7	V
Input Logic High Voltage	V_{IH}*3	-	0.7VDD	-	VDD	V
Input Logic Voltage	V_{IL}*3	-	0	-	0.3VDD	V
Current For Driver	I_{GH}	V_{GH} =20V	-	0.25	1.0	mA
	I_{GL}	V_{GL} = -6.8V	-	0.25	1.0	
	IDV_{DD}	DV_{DD} =3.3V	-	38	60	
	IAV_{DD}	AV_{DD} =11V	-	20	30	

Note 1: Be sure to apply DV_{DD} and V_{GL} to the LCD first, and then apply V_{GH}.

Note 2: DV_{DD} setting should match the signals output voltage (refer to Note 3) of customer's system board.

Note 3: LVDS, Reset.

Note 4: Typ. V_{COM} is only a reference value, it must be optimized according to each LCM. Be sure to use VR.



1.5 Optical Characteristics

TFT LCD panel DV_{DD} =3.3V, Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	unit	
Response time	Rise	TR	-	-	10	20	ms	Note2
	Fall	TF		-	15	30		
Viewing angle	Top	θ+	CR ≥ 10	-	60	-	Deg.	Note4
	Bottom	θ-		-	60	-		
	Left	θL		-	60	-		
	Right	θR		-	60	-		
Contrast ratio		CR	-	500	600	-	-	Note3
Color of CIE Coordinate (With B/L&TP)	White	X	I_L =200mA	0.23	0.28	0.33	-	Note1
		Y		0.26	0.31	0.36		
	Red	X		0.59	0.64	0.69		
		Y		0.29	0.34	0.39		
	Green	X		0.28	0.33	0.38		
		Y		0.57	0.62	0.67		
	Blue	X		0.09	0.14	0.19		
		Y		0.01	0.06	0.11		
Average Brightness Pattern=white display (With B/L&TP)		IV	I_L =200mA	300	390	-	cd/m^2	Note1
Uniformity (With B/L&TP)		Δ B	I_L =200mA	70	-	-	%	Note1

Note 4 ：

1：△B=B(min) / B(max) * 100%

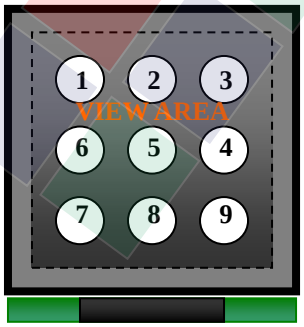
2：Measurement Condition for Optical Characteristics:

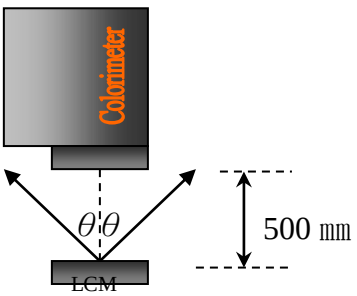
a：Environment: 25℃±5℃ / 60±20%R.H，no wind，dark room below 10 Lux at typical lamp current and typical operating frequency.

b：Measurement Distance: 500 ± 50 ㎜ ，(θ= 0°)

c：Equipment: TOPCON BM-7 fast，(field 1°)，after 10 minutes operation.

d：The uncertainty of the C.I.E coordinate measurement ±0.01，Average Brightness ± 4%



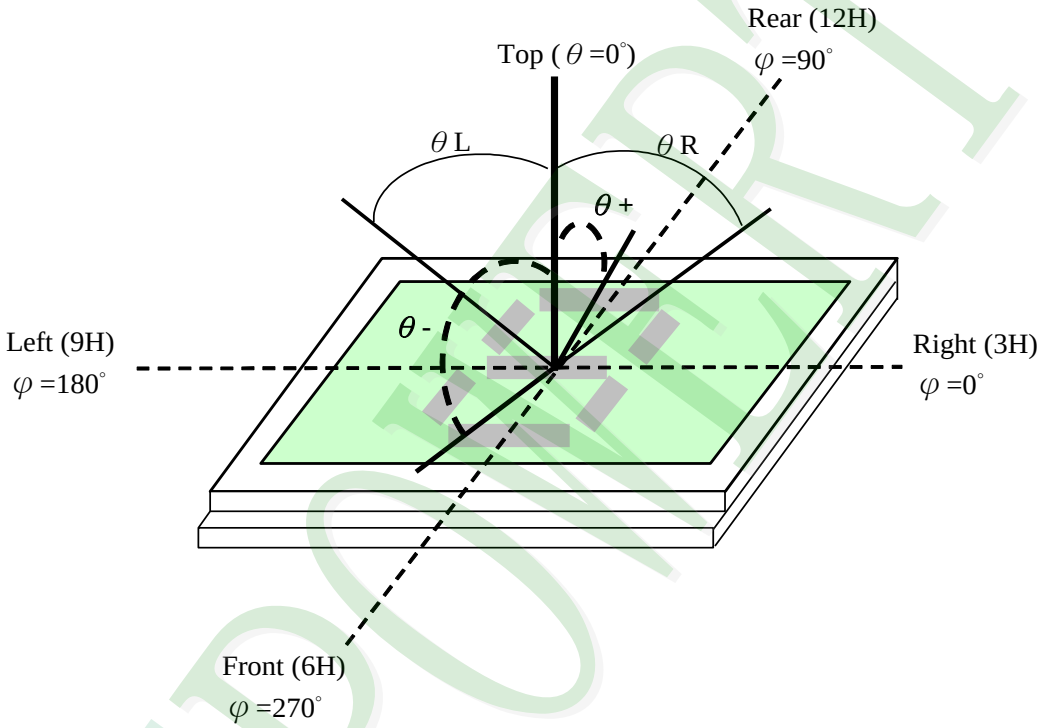


Colorimeter=BM-7 fast

Note 1.

Optical characteristics-2

Viewing angle

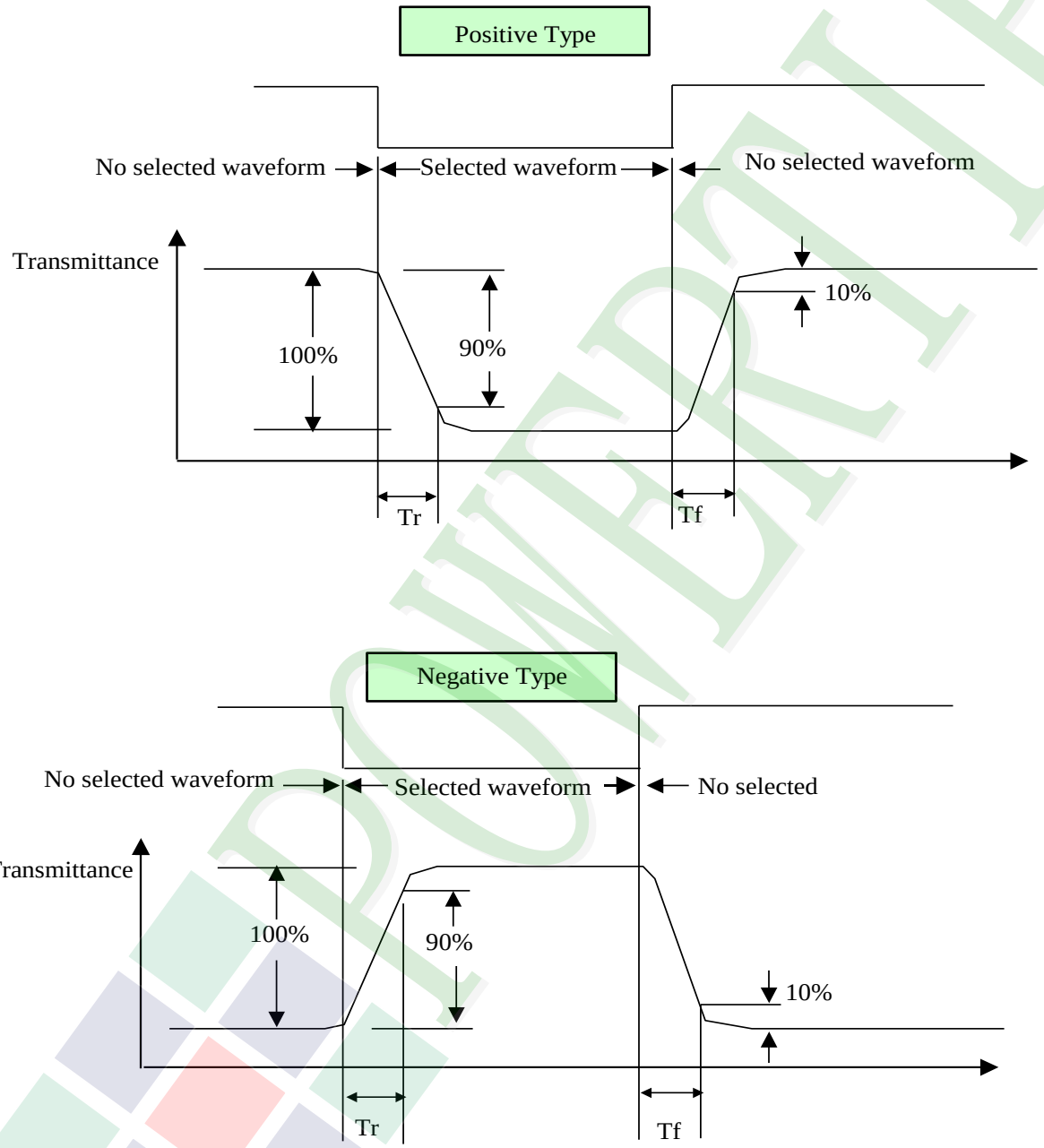


Viewing angle

Note 2.

Optical characteristics-3

Fig.2 Definition of response time



Electrical characteristics-2

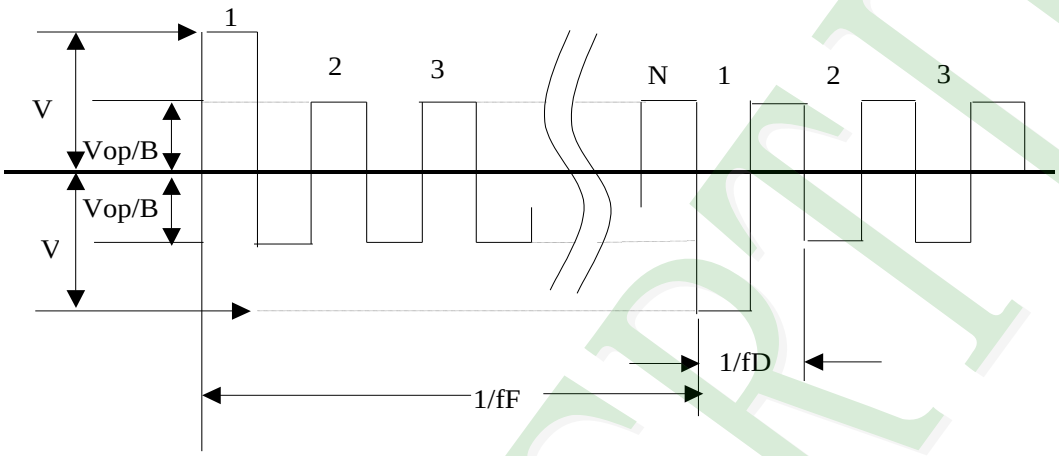
※2 Drive waveform

Vop: Drive voltage fF: Frame frequency

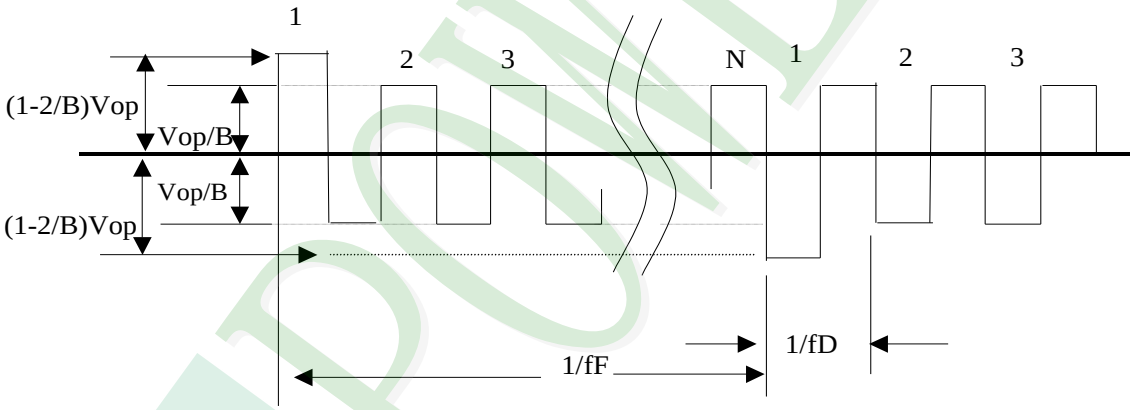
1/B: Bias fD: Drive frequency

N: Duty

(1) Selected waveform



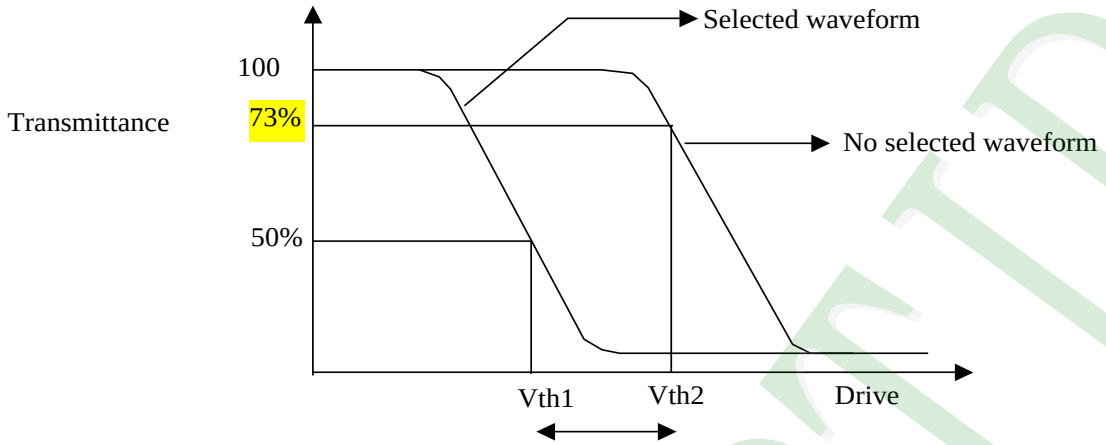
(2) Non- Selected wave form



Note:

Frame frequency is defined as follows: Common side supply voltage peak - to - peak /2 = 1 period

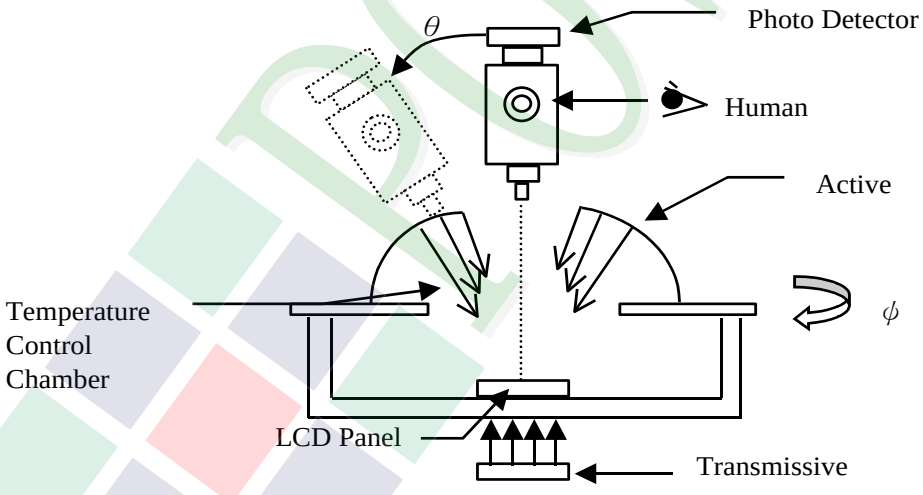
Note 3. : Definition of Vth



	Vth1	Vth2
View direction	10°	40°
Drive waveform	(Selected waveform)	(No selected waveform)
Transmittance	50%	73%

※1 Contrast ratio
= (Brightness in OFF state) / (Brightness in ON state)

Outline of Electro-Optical Characteristics Measuring System



Measuring System: Autronic DMS-803

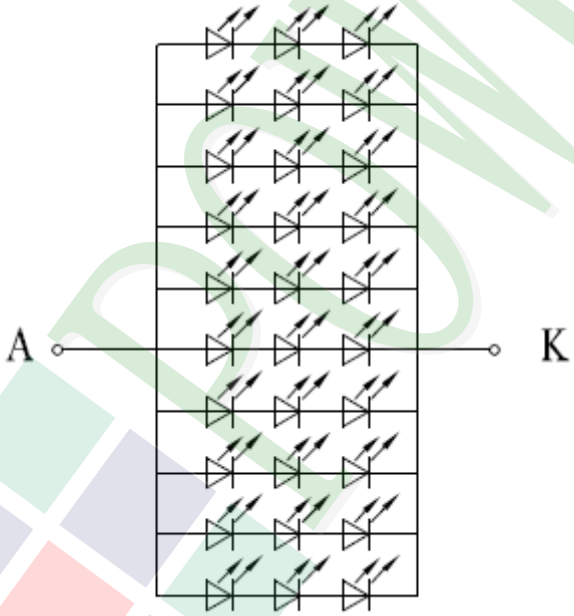
1.6 Backlight & LED Characteristics

Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
Forward Current	IF	Ta =25℃	-	50	UA
Reverse Voltage	VR	Ta =25℃	-	5	V

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF=200 mA	9.0	9.6	10.2	V
Average Brightness (without LCD)	IV		12500	13200	-	cd/m^2
Color of CIE Coordinate (Without LCD)	X		0.25	0.28	0.31	
	Y		0.28	0.31	0.34	
Color	White					



1.7 Touch Panel Characteristics

1.7.1 Construction

Construction	Materials	Comment
Cover Glass	Toughened glass	Thickness：0.7mm±0.1mm
Optical Clear Adhesive	Adhesive	Thickness：0.15mm±0.05mm
ITO Glass	ITO glass	Double side ITO glass thickness: 0.55mm±0.05mm

1.7.2 Optical characteristics

Items	Value
Optical Characteristics	Transparency ≥ 85%
Hardness	≥7H

1.7.3 Electric characteristics

Items	Spec.
Control Type	FT5406DQ9
Input Type	IIC
VDD	3.3V
Resolution	1024*600
Number Of Touch Point	10
Touch Module Trace Number(Tx*Ty)	22*12
IIC Address	0x70
Supply Current	6mA

2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

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2.2 Interface Pin Description

Pin No.	Symbol	I/O	Function	Remark
1	VCOM	P	Common Voltage	
2	DVDD	P	Power Voltage for digital circuit	
3	DVDD	P	Power Voltage for digital circuit	
4	NC	--	No connection	
5	Reset	I	Global reset pin	
6	STBYB	I	Standby mode, Normally pulled high STBYB = “1”, normal operation STBYB = “0”, timing controller, source driver will turn off, all output are High-Z	
7	GND	P	Ground	
8	RXIN0-	I	- LVDS differential data input	
9	RXIN0+	I	+ LVDS differential data input	
10	GND	P	Ground	
11	RXIN1-	I	- LVDS differential data input	
12	RXIN1+	I	+ LVDS differential data input	
13	GND	P	Ground	
14	RXIN2-	I	- LVDS differential data input	
15	RXIN2-	I	+ LVDS differential data input	
16	GND	P	Ground	
17	RXCLKIN-	I	- LVDS differential data input	
18	RXCLKIN+	I	+ LVDS differential data input	
19	GND	P	Ground	
20	RXIN3-	I	- LVDS differential data input	
21	RXIN3+	I	+ LVDS differential data input	
22	GND	P	Ground	
23	NC	--	No connection	
24	NC	--	No connection	
25	GND	P	Ground	
26	NC	--	No connection	
27	DIMO	O	Backlight CABC controller signal output	
28	SELB	I	6bit/8bit mode select	Note1
29	AVDD	P	Power for Analog Circuit	
30	GND	P	Ground	
31	LED-	P	LED Cathode	

32	LED-	P	LED Cathode	
33	L/R	I	Horizontal inversion	Note3
34	U/D	I	Vertical inversion	Note3
35	VGL	P	Gate OFF Voltage	
36	CABCEN1	I	CABC H/W enable	Note2
37	CABCEN0	I	CABC H/W enable	Note2
38	VGH	P	Gate ON Voltage	
39	LED+	P	LED Anode	
40	LED+	P	LED Anode	

I: input, O: output, P: Power

Note1: If LVDS input data is 6 bits ,SELB must be set to High;
If LVDS input data is 8 bits ,SELB must be set to Low.

Note2: When CABC_EN=”00”, CABC OFF.
When CABC_EN=”01”, user interface image.
When CABC_EN=”10”, still picture.
When CABC_EN=”11”, moving image.
When CABC off, don’t connect DIMO, else connect it to backlight.

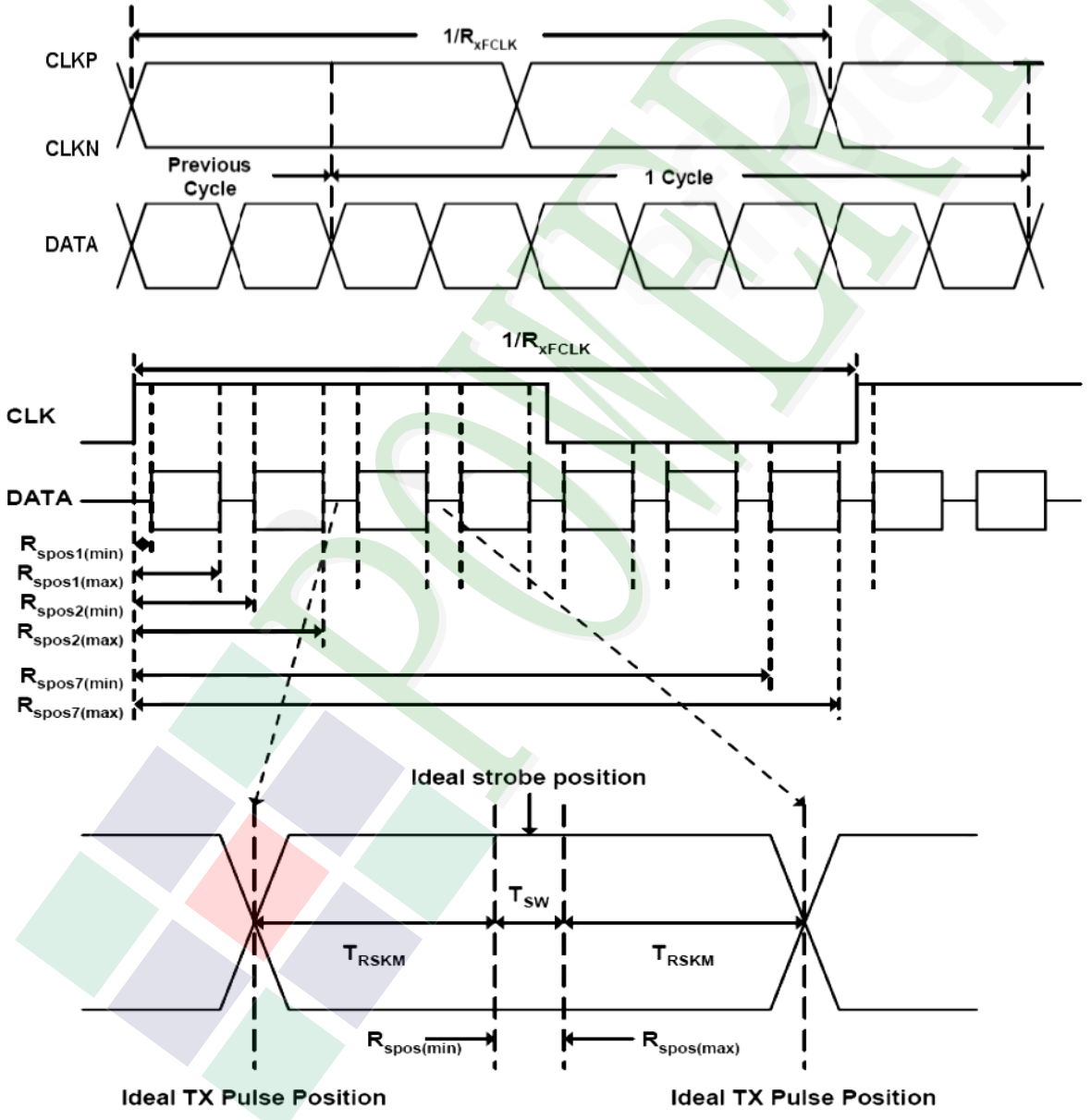
Note3: When L/R=”0”, set right to left scan direction.
When L/R=”1”, set left to right scan direction.
When U/D=”0”, set top to bottom scan direction.
When U/D=”1”, set bottom to top scan direction.

2.3 Timing Characteristics

2.3.1 AC Electrical Characteristics

Parameter	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Clock frequency	R_{xFCLK}	40.8	51.2	67.2	MHz	
Input data skew margin	T_{RSKM}	500	-	-	ps	
Clock high time	T_{LVCH}	-	4/(7* R_{xFCLK})	-	ns	
Clock low time	T_{LVCL}	-	3/(7* R_{xFCLK})	-	ns	

2.3.2 Input Clock and Data Timing Diagram

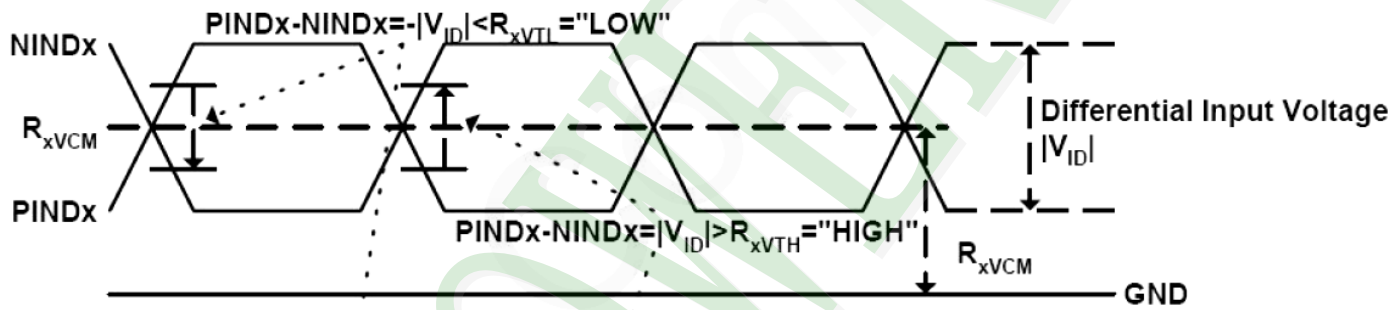


T_{RSKM}: Receiver strobe margin
R_{SPOS}: Receiver strobe position
T_{SW} : Strobe width (Internal data sampling window)

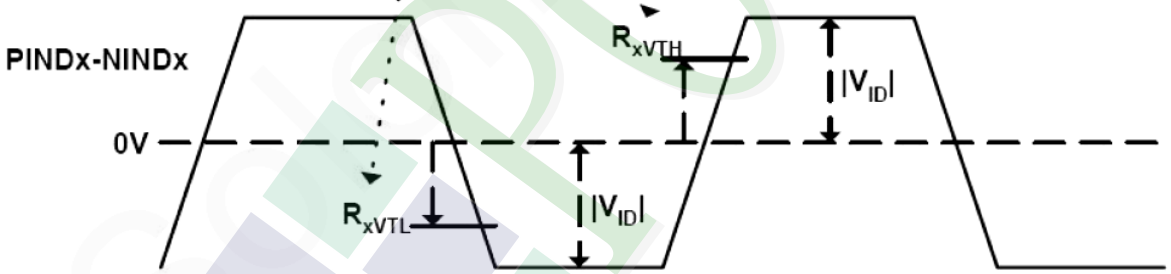
2.3.3 DC Electrical Characteristics

Parameter	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Differential input high Threshold voltage	R_{xVTH}	-	-	+0.1	V	R_{XVCM}=1.2V
Differential input low Threshold voltage	R_{xVTL}	-0.1	-	-	V	
Input voltage range (singled-end)	R_{xVIN}	0	-	2.4	V	
Differential input common mode voltage	R_{xVCM}	$\|V_{ID}\|/2$	-	$2.4-\|V_{ID}\|/2$	V	
Differential voltage	$\|V_{ID}\|$	0.2	-	0.6	V	
Differential input leakage current	RV_{xliz}	-10	-	+10	uA	

Single-end Signals



Differential Signal

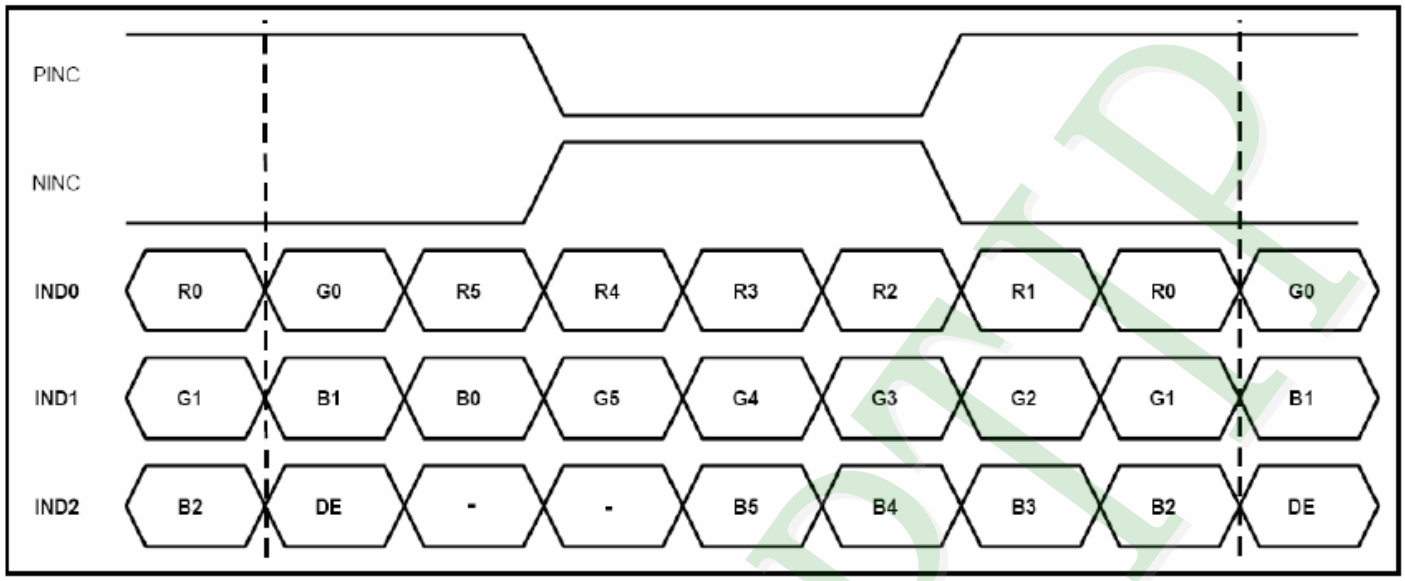


2.3.4 Timing

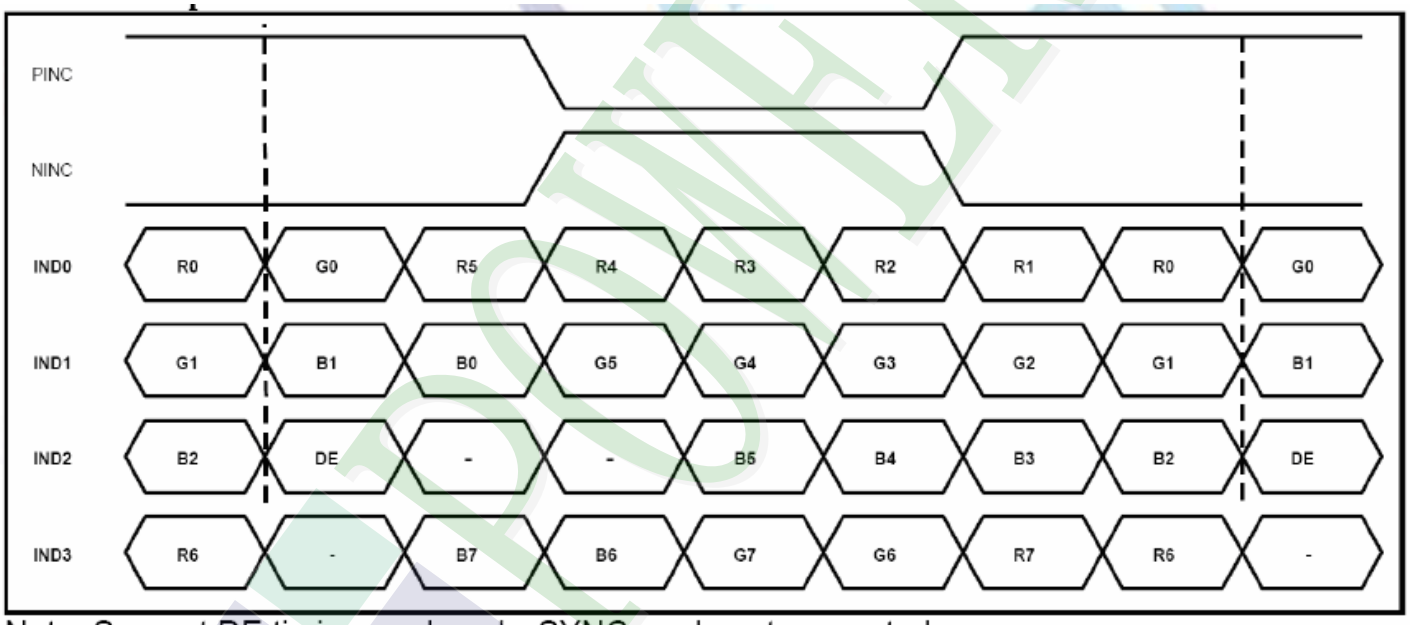
Item	Symbol	Values			Unit	Remark
		Min.	Typ.	Max.		
Clock Frequency	fclk	40.8	51.2	67.2	MHz	Frame rate =60Hz
Horizontal display area	thd		1024		DCLK	
HS period time	th	1114	1344	1400	DCLK	
HS Blanking	thb	90	320	376	DCLK	
Vertical display area	tvd		600		H	
VS period time	tv	610	635	800	H	
VS Blanking	thb	10	35	200	H	

2.3.5 Data Input Format

6bit LVDS input



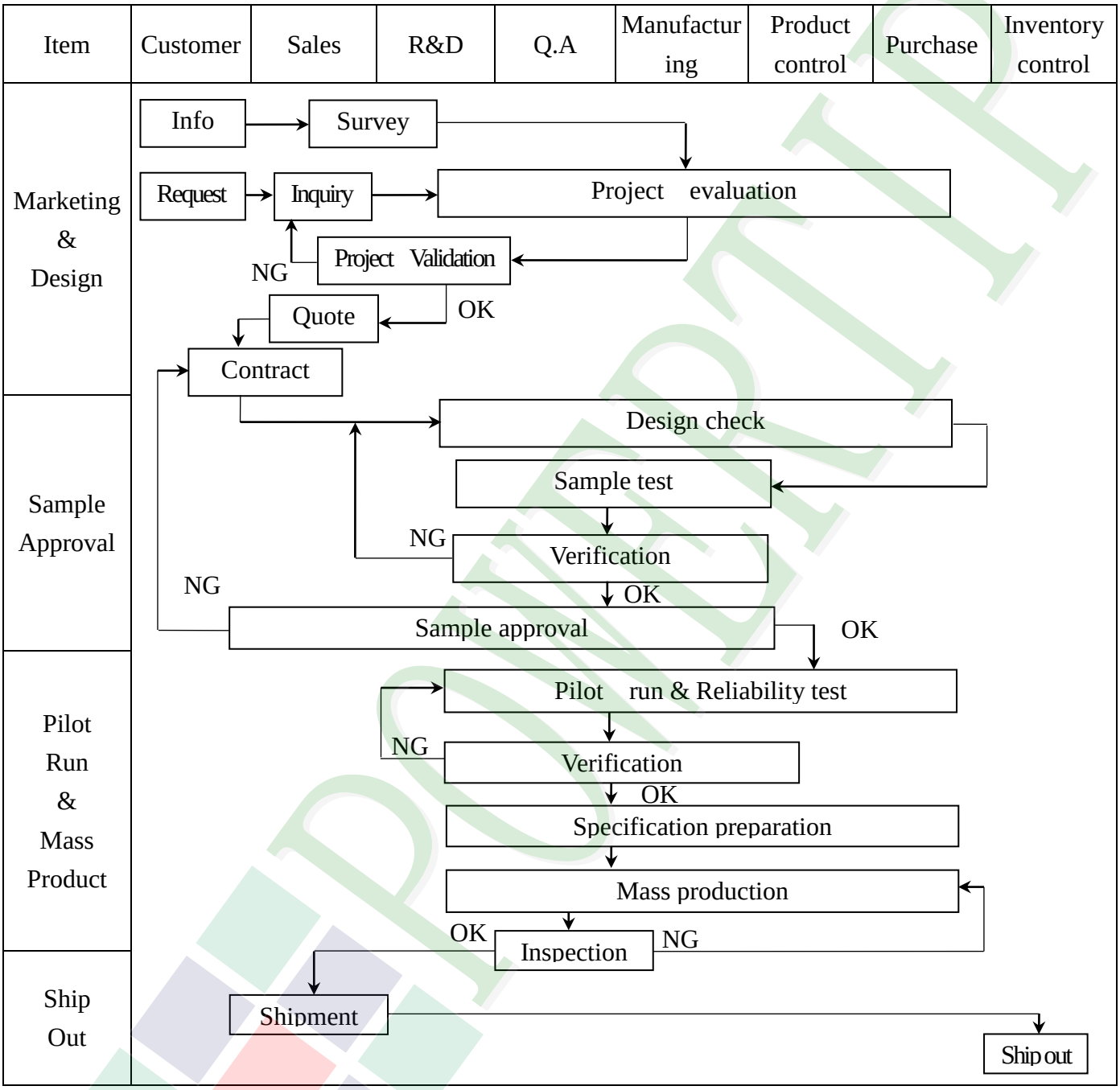
8bit LVDS input

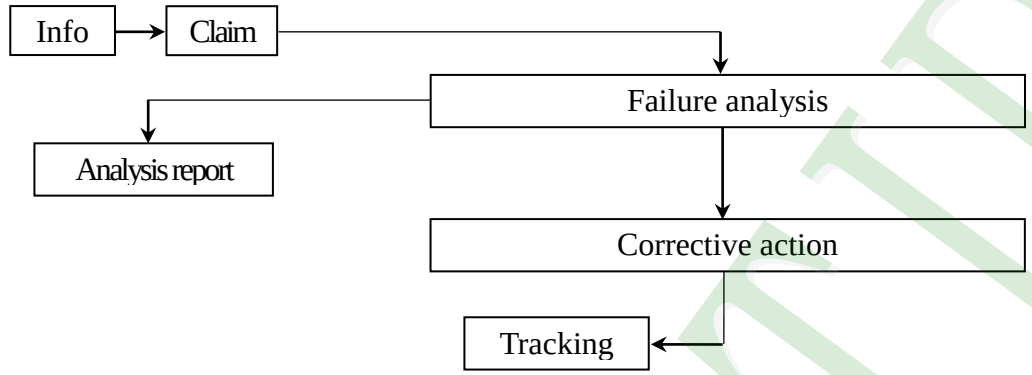


Note: Support DE timing mode only, SYNC mode not supported.

3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart



Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service								
Q.A Activity	1. ISO 9001 Maintenance Activities 2. Process improvement proposal 3. Equipment calibration 4. Education And Training Activities 5. Standardization Management							

3.2 Inspection Specification

◆Scope：The document shall be applied to TFT-LCD Module for 3.5″ ~10″ (Ver.B01).

◆Inspection Standard：MIL-STD-105E Table Normal Inspection Single Sampling Level Ⅱ.

◆Equipment：Gauge、MIL-STD、Powertip Tester、Sample

◆Defect Level：Major Defect AQL： 0.4 ； Minor Defect AQL： 1.5

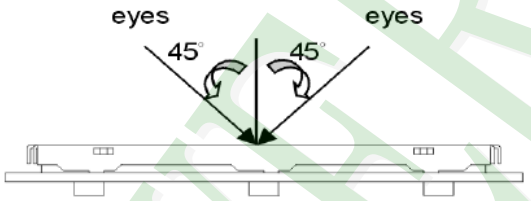
◆OUT Going Defect Level：Sampling.

◆Standard of the product appearance test：

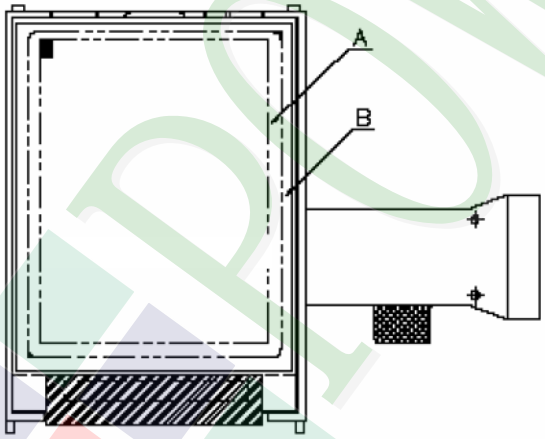
a. Manner of appearance test：

(1). The test best be under 20W×2 fluorescent light，and distance of view must be at 30 cm.

(2). The test direction is base on about around 45° of vertical line.



(3). Definition of area.



A area : viewing area

B area : Outside of viewing area

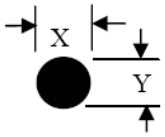
(4). Standard of inspection： (Unit：mm)

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver:B01)

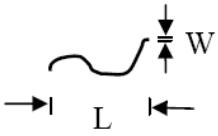
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="3">01</td><td rowspan="3">Product condition</td><td>1.1 The part number is inconsistent with work order of production.</td><td>Major</td></tr>
<tr><td>1.2 Mixed product types.</td><td>Major</td></tr>
<tr><td>1.3 Assembled in inverse direction.</td><td>Major</td></tr>
<tr><td>02</td><td>Quantity</td><td>2.1 The quantity is inconsistent with work order of production.</td><td>Major</td></tr>
<tr><td>03</td><td>Outline dimension</td><td>3.1 Product dimension and structure must conform to structure diagram.</td><td>Major</td></tr>
<tr><td rowspan="5">04</td><td rowspan="5">Electrical Testing</td><td>4.1 Missing line character and icon.</td><td>Major</td></tr>
<tr><td>4.2 No function or no display.</td><td>Major</td></tr>
<tr><td>4.3 Display malfunction.</td><td>Major</td></tr>
<tr><td>4.4 LCD viewing angle defect.</td><td>Major</td></tr>
<tr><td>4.5 Current consumption exceeds product specifications.</td><td>Major</td></tr>
<tr><td>05</td><td>Dot defect
(Bright dot、Dark dot)
On -display</td><td>
<table>
<tr><th colspan="2">Item</th><th>Acceptance (Q'ty)</th></tr>
<tr><td rowspan="4">Dot Defect</td><td>Bright Dot</td><td>≦ 4</td></tr>
<tr><td>Dark Dot</td><td>≦ 5</td></tr>
<tr><td>Joint Dot</td><td>≦ 3</td></tr>
<tr><td>Total</td><td>≦ 7</td></tr>
</table>
5.1 Inspection pattern：full white , full black , Red , Green and blue screens.
5.2 It is defined as dot defect if defect area ＞1/2 dot.
5.3 The distance between two dot defect ≧5 mm.
</td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

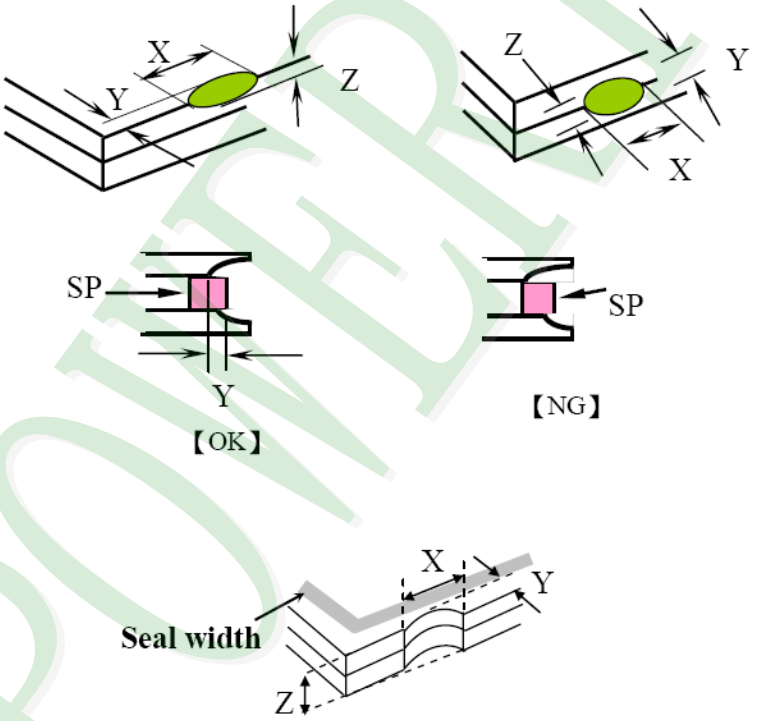
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>06</td><td>Black or white dot、scratch、contamination

Round type
 

Φ=(x+y) / 2

Line type
 
</td><td>6.1 Round type (Non-display or display) :
<table><tr><th rowspan="2">Dimension (diameter : Φ)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>Φ ≦ 0.25</td><td>Ignore</td><td rowspan="4">Ignore</td></tr><tr><td>0.25 < Φ ≦ 0.50</td><td>5</td></tr><tr><td>Φ > 0.50</td><td>0</td></tr><tr><td>Total</td><td>5</td></tr></table>
6.2 Line type(Non-display or display) :
<table><tr><th rowspan="2">Length (L)</th><th rowspan="2">Width (W)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>---</td><td>W ≦ 0.03</td><td>Ignore</td><td rowspan="5">Ignore</td></tr><tr><td>L ≦10.0</td><td>0.03 < W ≦ 0.05</td><td>4</td></tr><tr><td>L ≦5.0</td><td>0.05 < W ≦ 0.10</td><td>2</td></tr><tr><td>---</td><td>W >0.10</td><td>As round type</td></tr><tr><td colspan="2">Total</td><td>5</td></tr></table></td><td>Minor</td></tr>
<tr><td>07</td><td>Polarizer Bubble</td><td><table><tr><th rowspan="2">Dimension (diameter : Φ)</th><th colspan="2">Acceptance (Q'ty)</th></tr><tr><th>A area</th><th>B area</th></tr><tr><td>Φ ≦ 0.25</td><td>Ignore</td><td rowspan="5">Ignore</td></tr><tr><td>0.25 < Φ ≦ 0.50</td><td>4</td></tr><tr><td>0.50 < Φ ≦ 0.80</td><td>1</td></tr><tr><td>Φ > 0.80</td><td>0</td></tr><tr><td>Total</td><td>5</td></tr></table></td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

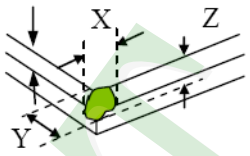
NO	Item	Criterion	Level
08	The crack of glass	Symbols : X : The length of crack Y : The width of crack. Z : The thickness of crack W : terminal length t : The thickness of glass a : LCD side length 8.1 General glass chip : 8.1.1 Chip on panel surface and crack between panels:  	Minor

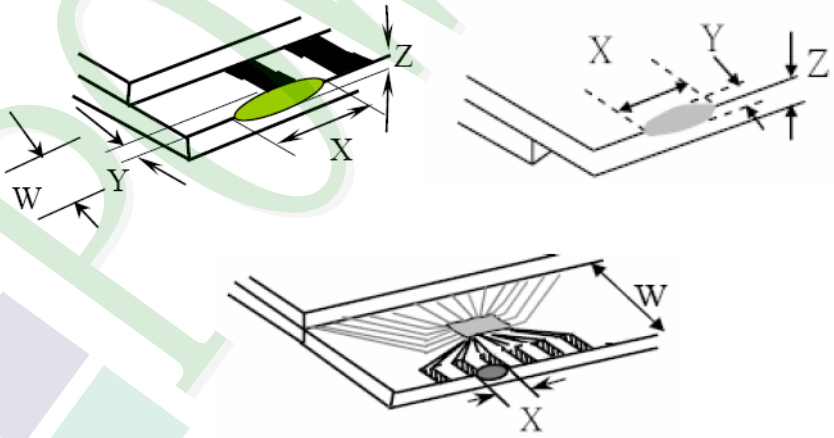
X	Y	Z
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="2">08</td><td rowspan="2">The crack of glass</td><td>Symbols :

X : The length of crack
Z : The thickness of crack
t : The thickness of glass
Y : The width of crack.
W : terminal length
a : LCD side length

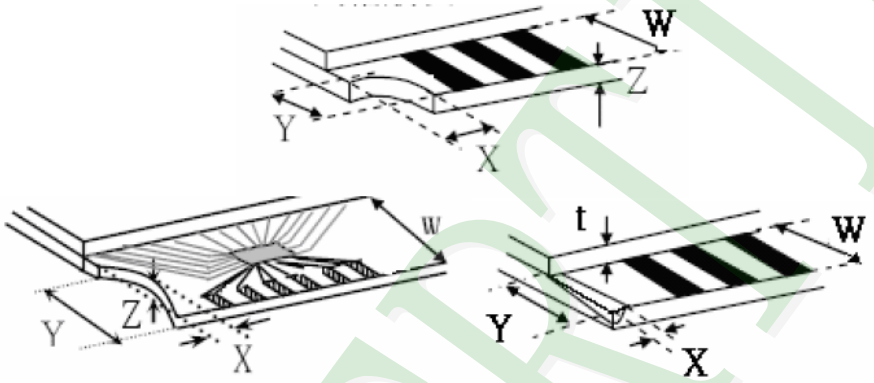
8.1.2 Corner crack :
 

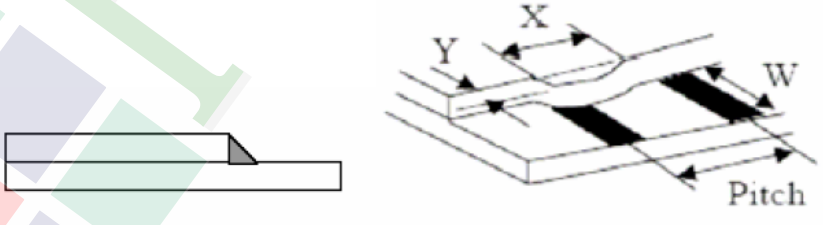
<table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>≦1/5 a</td><td>Crack can’t enter viewing area</td><td>Z ≦ 1/2 t</td></tr><tr><td>≦1/5 a</td><td>Crack can’t exceed the half of SP width.</td><td>1/2 t < Z ≦ 2 t</td></tr></table></td><td></td></tr>
<tr><td>8.2 Protrusion over terminal :
8.2.1 Chip on electrode pad :
 

<table><tr><th></th><th>X</th><th>Y</th><th>Z</th></tr><tr><td>Front</td><td>≦ a</td><td>≦ 1/2 W</td><td>≦ t</td></tr><tr><td>Back</td><td>≦ a</td><td>≦ W</td><td>≦ 1/2 t</td></tr></table></td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>08</td><td>The crack of glass</td><td>
Symbols :

X : The length of crack Y : The width of crack.
Z : The thickness of crack W : terminal length
t : The thickness of glass a : LCD side length
<hr>
8.2.2 Non-conductive portion :


<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦ 1/3 a</td><td>≦ W</td><td>≦t</td></tr>
</table>
⊙ If the chipped area touches the ITO terminal, over 2/3 of the ITO must remain and be inspected according to electrode terminal specifications.
8.2.3 Glass remain :


<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦ a</td><td>≦ 1/3 W</td><td>≦t</td></tr>
</table>
</td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~10″ : (Ver.B01)

NO	Item	Criterion	Level
09	Backlight elements	9.1 Backlight can't work normally.	Major
		9.2 Backlight doesn't light or color is wrong.	Major
		9.3 Illumination source flickers when lit.	Major
10	General appearance	10.1 Pin type、quantity、dimension must match type in structure diagram.	Major
		10.2 No short circuits in components on PCB or FPC .	Major
		10.3 Parts on PCB or FPC must be the same as on the production characteristic chart .There should be no wrong parts , missing parts or excess parts.	Major
		10.4 Product packaging must the same as specified on packaging specification sheet.	Minor
		10.5 The folding and peeled off in polarizer are not acceptable.	Minor
		10.6 The PCB or FPC between B/L assembled distance(PCB or FPC) is ≦1.5 mm.	Minor

4. RELIABILITY TEST

4.1 Reliability Test Condition (Ver.B01)

NO.	TEST ITEM	TEST CONDITION
1	High Temperature Storage Test	Keep in +80 ±2℃ 96 hrs Surrounding temperature, then storage at normal condition 4hrs.
2	Low Temperature Storage Test	Keep in -30 ±2℃ 96 hrs Surrounding temperature, then storage at normal condition 4hrs.
3	High Temperature / High Humidity Storage Test	Keep in +60℃ / 90% R.H duration for 96 hrs Surrounding temperature, then storage at normal condition 4hrs. (Excluding the polarizer)
4	ESD Test	Air Discharge: Apply 2 KV with 5 times Discharge for each polarity +/- Contact Discharge: Apply 250V with 5 times discharge for each polarity +/- 1. Temperature ambiance:15℃～35℃ 2. Humidity relative:30%～60% 3. Energy Storage Capacitance(Cs+Cd):150pF±10% 4. Discharge Resistance(Rd):330Ω±10% 5. Discharge, mode of operation: Single Discharge (time between successive discharges at least 1 s) (Tolerance if the output voltage indication: ±5%)
5	Temperature Cycling Storage Test	-30℃ → +25℃ → +70℃ → +25℃ (30mins) (5mins) (30mins) (5mins) 10 Cycle Surrounding temperature, then storage at normal condition 4hrs.
6	Vibration Test (Packaged)	1. Sine wave 10～55 Hz frequency (1 min) 2. The amplitude of vibration :1.5 mm 3. Each direction (X、Y、Z) duration for 2 Hrs
7	Drop Test (Packaged)	Packing Weight (Kg) / Drop Height (cm): 0 ~ 45.4 — 122 45.4 ~ 90.8 — 76 90.8 ~ 454 — 61 Over 454 — 46 Drop direction :※ 1 corner / 3 edges / 6 sides each 1times

5. PRECAUTION RELATING PRODUCT HANDLING

5.1 SAFETY

5.1.1 If the LCD panel breaks , be careful not to get the liquid crystal to touch your skin.

5.1.2 If the liquid crystal touches your skin or clothes , please wash it off immediately by using soap and water.

5.2 HANDLING

5.2.1 Avoid any strong mechanical shock which can break the glass.

5.2.2 Avoid static electricity which can damage the CMOS LSI—When working with the module , be sure to ground your body and any electrical equipment you may be using.

5.2.3 Do not remove the panel or frame from the module.

5.2.4 The polarizing plate of the display is very fragile. So , please handle it very carefully ,do not touch , push or rub the exposed polarizing with anything harder than an HB pencil lead (glass , tweezers , etc.)

5.2.5 Do not wipe the polarizing plate with a dry cloth , as it may easily scratch the surface of plate.

5.2.6 Do not touch the display area with bare hands , this will stain the display area.

5.2.7 Do not use ketonics solvent & aromatic solvent. Use with a soft cloth soaked with a cleaning naphtha solvent.

5.2.8 To control temperature and time of soldering is 320±10℃and 3-5 sec.

5.2.9 To avoid liquid (include organic solvent) stained on LCM .

5.3 STORAGE

5.3.1 Store the panel or module in a dark place where the temperature is 25℃ ±5℃ and the humidity is below 65% RH.

5.3.2 Do not place the module near organics solvents or corrosive gases.

5.3.3 Do not crush , shake , or jolt the module.

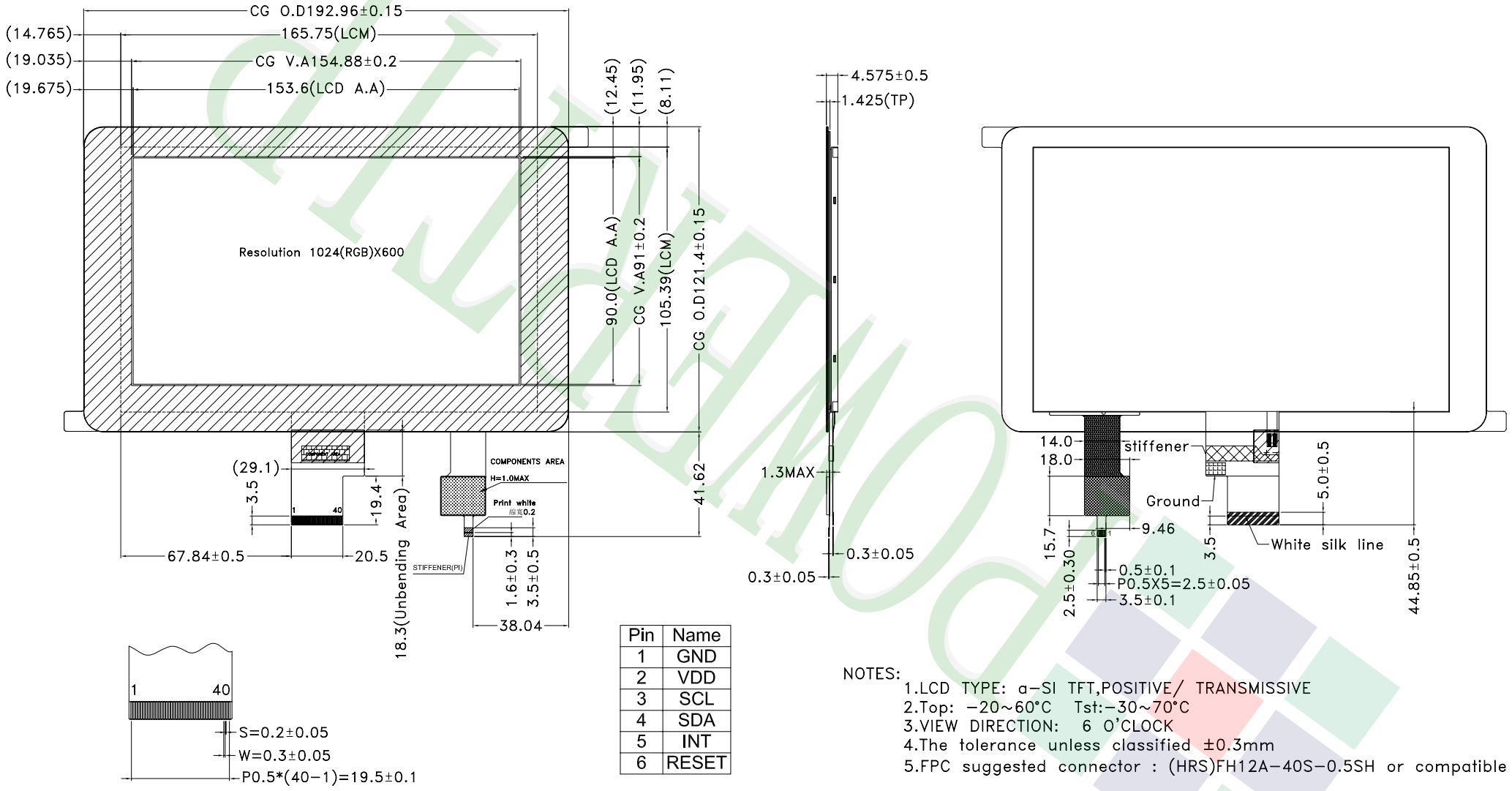
5.4 TERMS OF WARRANTY

5.4.1 Applicable warrant period

The period is within Twenty-four months since the date of shipping out under normal using and storage conditions.

5.4.2 Unaccepted responsibility

This product has been manufactured to your company's specification as a part for use in your company's general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment , we cannot take responsibility if the product is used in nuclear power control equipment , aerospace equipment , fire and security systems or any other applications in which there is a direct risk to human life and where extremely high levels of reliability are required.



Pin	Name
1	GND
2	VDD
3	SCL
4	SDA
5	INT
6	RESET

NOTES:
1.LCD TYPE: a-SI TFT,POSITIVE/ TRANSMISSIVE
2.Top: −20~60°C Tst:−30~70°C
3.VIEW DIRECTION: 6 O'CLOCK
4.The tolerance unless classified ±0.3mm
5.FPC suggested connector : (HRS)FH12A-40S-0.5SH or compatible

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Terry	2015/01/20

PART NO: PH102600T002-IBC

DRAWING NAME : JLMD-PH102600T002-IBC

TITLE: LCD MODULE DRAWING

久正光電股份有限公司
POWERTIP TECHNOLOGY CORPORATION

Design	Terry	(3)	Surface		
Check	Eddy	Unit	MM	Material	
Approve	Ryan	Scale	FIT	Thickness	
		Page	1/1	Quantity	

Length(Min) (mm) \ Tolerance \ Precision	Precision Level
1 ~ 4	-
4 ~ 16	-
16 ~ 63	-
63 ~ 250	-
250 ~ 1000	-

Ver.001

Documents NO.	JPKG-PH102600T002-IBC

LCM包裝規格書
LCM Packaging Specifications

Approve	Check	Contact
Ryan	Eddy	Terry

1.包裝材料規格表 (Packaging Material) : (per carton)

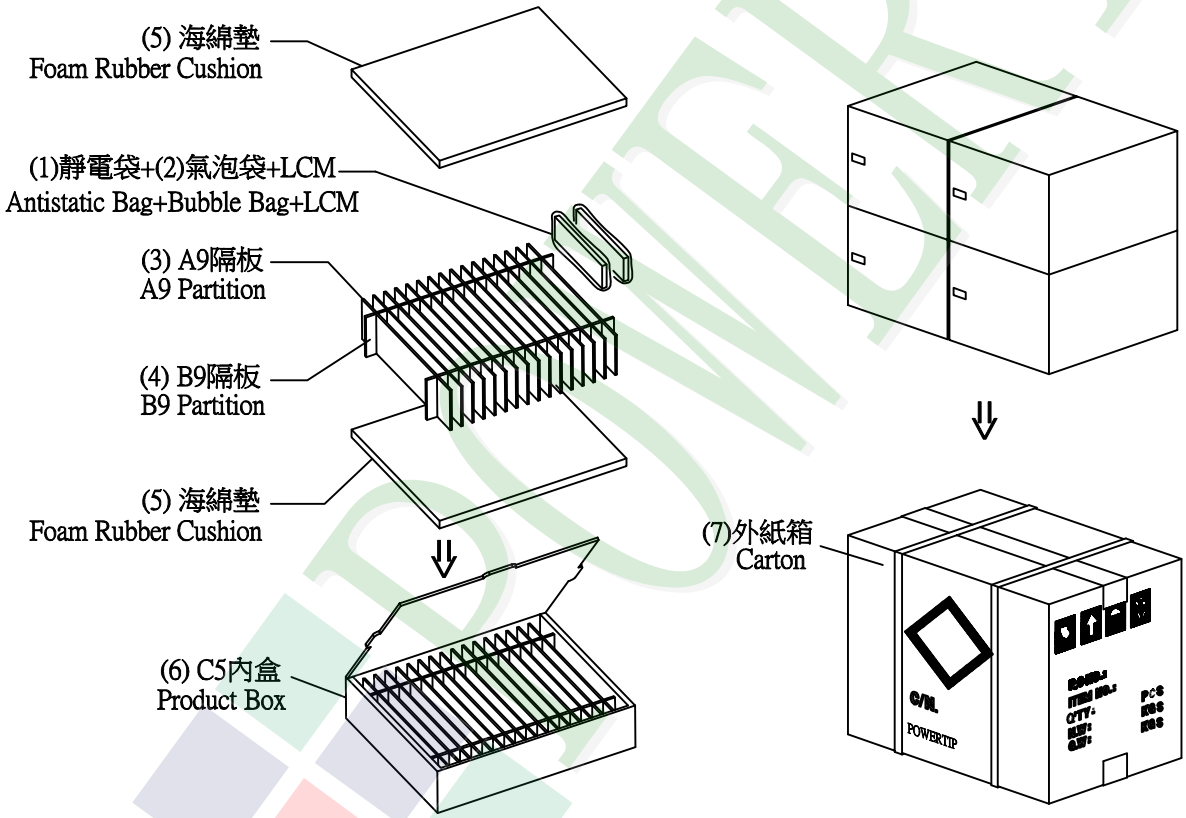
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH102600T002-IBC	192.96X121.4X4.575	0.1687	60	10.122
2	靜電袋(1)Antistatic Bag	BAG240170ARABA	240 X 170	0.0048	60	0.288
3	氣泡袋(2)Bubble Bag	BAG170150BRABA	170 X 150	0.0045	60	0.27
4	A9隔板(3)A9 Partition	BX00000000058	245 X 125 X 4	0.0204	64	1.3056
5	B9隔板(4)B9 Partition	BX00000000057	295 X 125 X 4	0.0209	8	0.1672
6	海綿墊(5)Foam Rubber Cushion	OTFOAM00006ABA	290 X 240 X 10	0.02	8	0.16
7	C5內盒(6)Product Box	BX00000000059	310 X 255 X 155	0.248	4	0.992
8	外紙箱(7)Carton	BX52732536CCBA	527 X 325 X 360	0.83	1	0.83
9						

2.一 整箱總重量 (Total LCD Weight in carton) : 14.13 Kg±10%

3.單箱數量規格表 (Packaging Specifications and Quantity) :

(1)Quantity Of Spacer : A9隔板 X 16 , B9隔板 X 2

(2)Total LCM quantity in carton : quantity per box 15 x no of boxes 4 = 60



特 記 事 項 (REMARK)

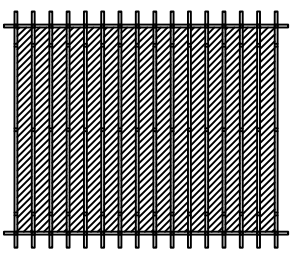
4. Label Specifications :

參照廠內作業標準

5. LCM排放示意圖(前後間隔不放置):

5. LCM placed as figure showing:

(First and last slot should be empty)



模組(LCM) X 1pcs.

POWERTIP