POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	PTC
SAMPLE CODE	:	SH128800T004-ZZC06
MASS PRODUCTION CODE	:	PH128800T004-ZZC06
SAMPLE VERSION	:	04
SPECIFICATIONS EDITION	:	009
DRAWING NO. (Ver.)	:	JLMD-PH128800T004-ZZC06_004
PACKAGING NO. (Ver.)	:	JPKG-PH128800T004-ZZC06_001

Customer Approved

Date:

Approved	Checked	Designer
劉進	劉進	陳璐

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

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History of Version

Date	Ver.	Edi.	Description	Page	Design by
01/30/2018	01	001	New Drawing.	-	陳璐
02/12/2018	01	002	Modify Description of VLED, Modify Backlight Characteristics, Modify Interface PIN Description	5,8,11,12,13	陳璐
06/07/2018	01	003	New Sample	-	陳璐
06/28/2018	01	004	Add Power Consumption	5	陳璐
02/22/2019	01	005	Modify RELIABILITY TEST	28	陳璐
10/17/2019	01	006	Modify Operating Temperature	5,9,28	陳璐
11/29/2019	02	007	Modify BL	-	陳璐
04/10/2020	03	008	Add TAPE	Appendix	陳璐
11/16/2020	04	009	Modify Power Supply Current	5	陳璐

Total: 29 Page

Contents

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Screen size(Inch)	10.1(Diagonal)
Resolution	1280* (R、G、B) * 800 Dots
Display mode	Transmissive, Normally Black
Color	16.7M
Interface	8 bit LVDS
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	254.96(W) * 173.6 (L) * 10.0 (H)Max	mm

LCD panel

Item	Standard Value	Unit
Active Area	216.96 (W) * 135.60 (L)	mm

Note : For detailed information please refer to LCM drawing.

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply Voltage	VDD	-	-0.3	+4.0	V
Power Supply Voltage	LED_VCC	-	-0.3	+50	V
Operating Temperature	TOP	-	-20	+70	℃
Storage Temperature	TST	-	-30	+80	℃
Storage Humidity	HD	Ta＜60 ℃	-	90	%RH

1.4 DC Electrical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage for LCD Driver		VDD	-	2.75	3.3	3.6	V
Power Supply Voltage for LED Driver		LED_VCC	-	9.0	12.0	15.0	V
Power Supply Current		IDD*1	VDD=3.3V	-	450	680	mA
Power Supply Current For LED Driver		ILED_VCC	LED_VCC =12V	-	600	660	mA
Power Consumption		Pd	VDD=3.3V LED_VCC =12V	-	-	0.93+7.92	W
PWM Signal Voltage	High	VPWM	-	0.8*VLED_EN	-	VLED_EN	V
	Low		-	0	-	0.2* VLED_EN	V
LED Enable Voltage	High	VLED_EN	-	1.65	-	5.25	V
	Low		-	0	-	0.4	V
PWM Frequency		FPWM	-	100	-	20000	Hz

1.5 Optical Characteristics

TFT LCD Panel Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	-
Response time		Tr + Tf	-	-	25	50	ms	Note2
Viewing angle	Top	ΘY+	CR ≥ 10	-	85	-	Deg.	Note4
	Bottom	ΘY-		-	85	-		
	Left	ΘX-		-	85	-		
	Right	ΘX+		-	85	-		
Contrast ratio		CR	If=200mA	600	800	-	-	Note3
Color of CIE Coordinate (With B/L and TP)	White	X		0.26	0.31	0.36	-	Note1
		Y		0.30	0.35	0.40		
	Red	X		0.55	0.60	0.65		
		Y		0.29	0.34	0.39		
	Green	X		0.27	0.32	0.37		
		Y		0.54	0.59	0.64		
	Blue	X		0.10	0.15	0.20		
		Y		0.11	0.16	0.21		
Average Brightness Pattern=white display (With B/L and TP)		IV	If=200mA	700	800	-	cd/m2	Note1
Luminance uniformity		YU	-	70	-	-	%	Note1

Note1:

1：△B=B(min) / B(max) × 100%

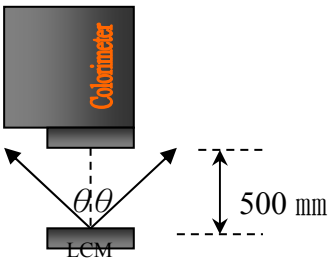
2：Measurement Condition for Optical Characteristics:

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%

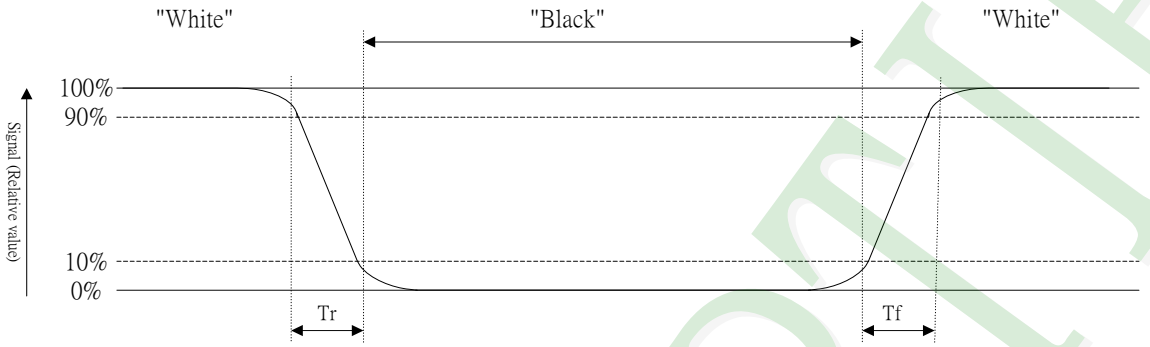


Colorimeter=BM-7 fast

Note2: Definition of response time:

The output signals of photo detector are measured when the input signals are changed from “black” to “white”(falling time) and from “white” to “black”(rising time), respectively. The response time is defined as the time interval between the 10% and 90% of Amplitudes.

Refer to figure as below:



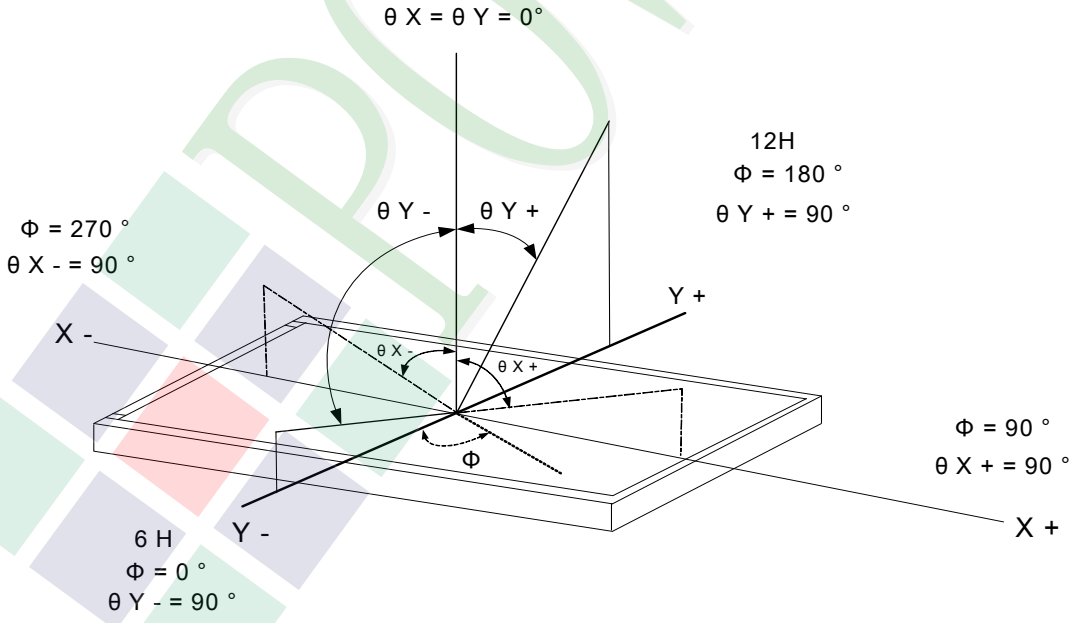
Note3: Definition of contrast ratio:

Contrast ratio is calculated with the following formula

$$\text{Contrast ratio (CR)} = \frac{\text{Photo detector output when LCD is at “White” state}}{\text{Photo detector output when LCD is at “Black” state}}$$

Note4: Definition of viewing angle:

Refer to figure as below:



1.6 Backlight Characteristics

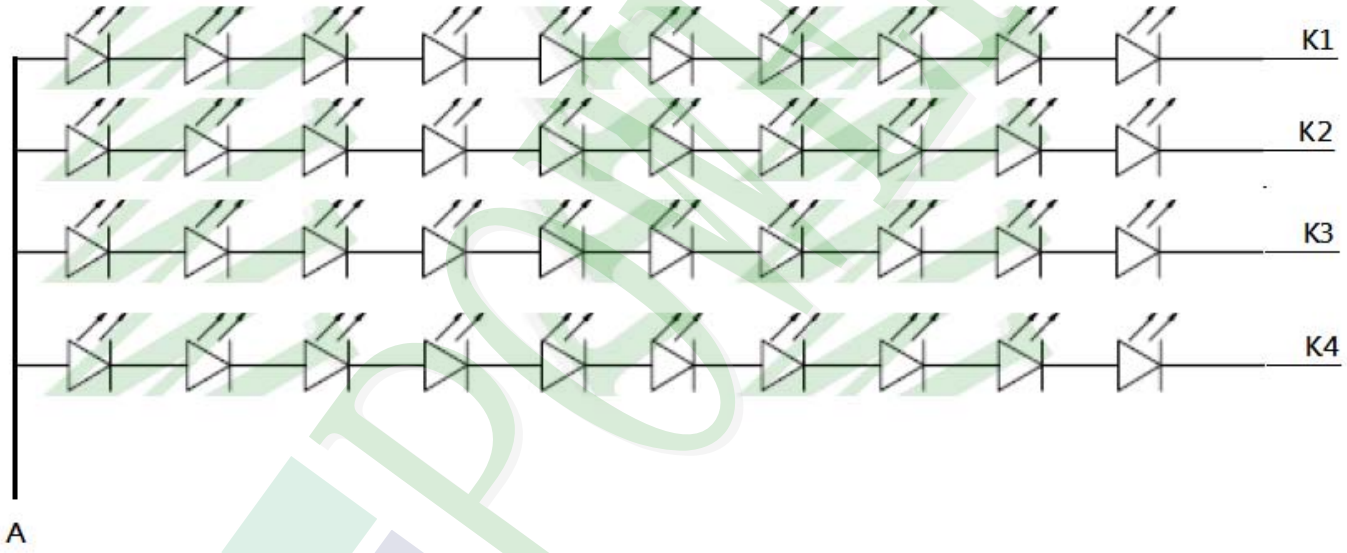
Maximum Ratings

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Power Dissipation	Pd	1 LED	-	-	260	mW
LED Forward Current	IF		-	-	80	mA
LED Reverse Voltage	VR		-	-	1.2	V

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Voltage for LED Backlight	VF	If=200mA	26	28	30	V
Current for LED Backlight	IF		-	200	-	mA
Color	White					

Internal Circuit Diagram



Other Description

Item	Conditions	Description
Life Time	Ta =25℃ IF= 200mA	70000 hrs

1.7 Touch Panel Characteristics

Features

Item	Standard Value
Touch Panel Size	10.1”
Touch type	Projective capacitive touch panel
Input Method	Finger / 5 Points touch
Output Interface	USB
IC	mxT1066T

Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	254.96(W) * 173.6(L)	mm
Viewing Area	217.96 (W) * 136.60 (L)	mm

Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	VDD_5.0	-	-0.3	+6.0	V
Operating Temperature	T_{OP}	-	-20	+70	°C
Storage Temperature	T_{ST}	-	-30	+80	°C

DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage for USB	VBUS	-	-	5.0	-	V

Optical Characteristics

Item	Standard Value	Unit
Total light transmittance	85% or more	-
Hardness	≥7H	

Touch Panel IC Read/Write description & Register Mapping

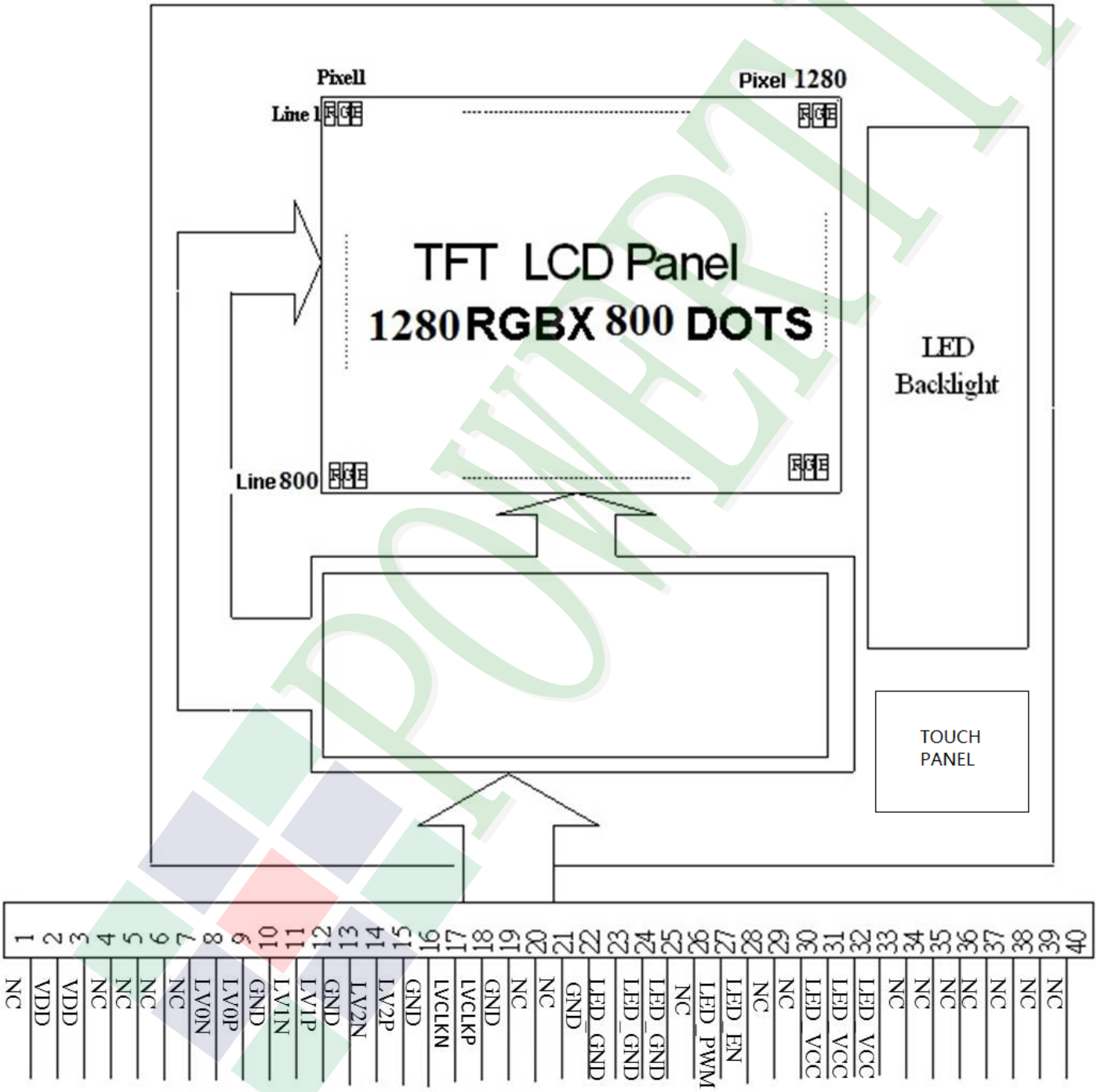
Reference :Atmel Touch Driver Porting Reference Guide.

2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix



2.2 Interface Pin Description

Pin No.	Symbol	Description
1	NC	No Connection.
2	VDD	Power Supply.
3	VDD	Power Supply.
4	NC	No Connection.
5	NC	No Connection.
6	NC	No Connection.
7	NC	No Connection.
8	LV0N	-LVDS Differential Data Input.
9	LV0P	+LVDS Differential Data Input.
10	GND	Ground.
11	LV1N	-LVDS Differential Data Input.
12	LV1P	+LVDS Differential Data Input.
13	GND	Ground.
14	LV2N	-LVDS Differential Data Input.
15	LV2P	+LVDS Differential Data Input.
16	GND	Ground.
17	LVCLKN	-LVDS Differential Clock Input.
18	LVCLKP	+LVDS Differential Clock Input.
19	GND	Ground.
20	LV3N	-LVDS Differential Data Input.
21	LV3P	+LVDS Differential Data Input.
22	GND	Ground.
23	LED_GND	Ground for LED Driving
24	LED_GND	Ground for LED Driving
25	LED_GND	Ground for LED Driving
26	NC	No Connection.
27	LED_PWM	LED Backlight PWM control signal for dimming.

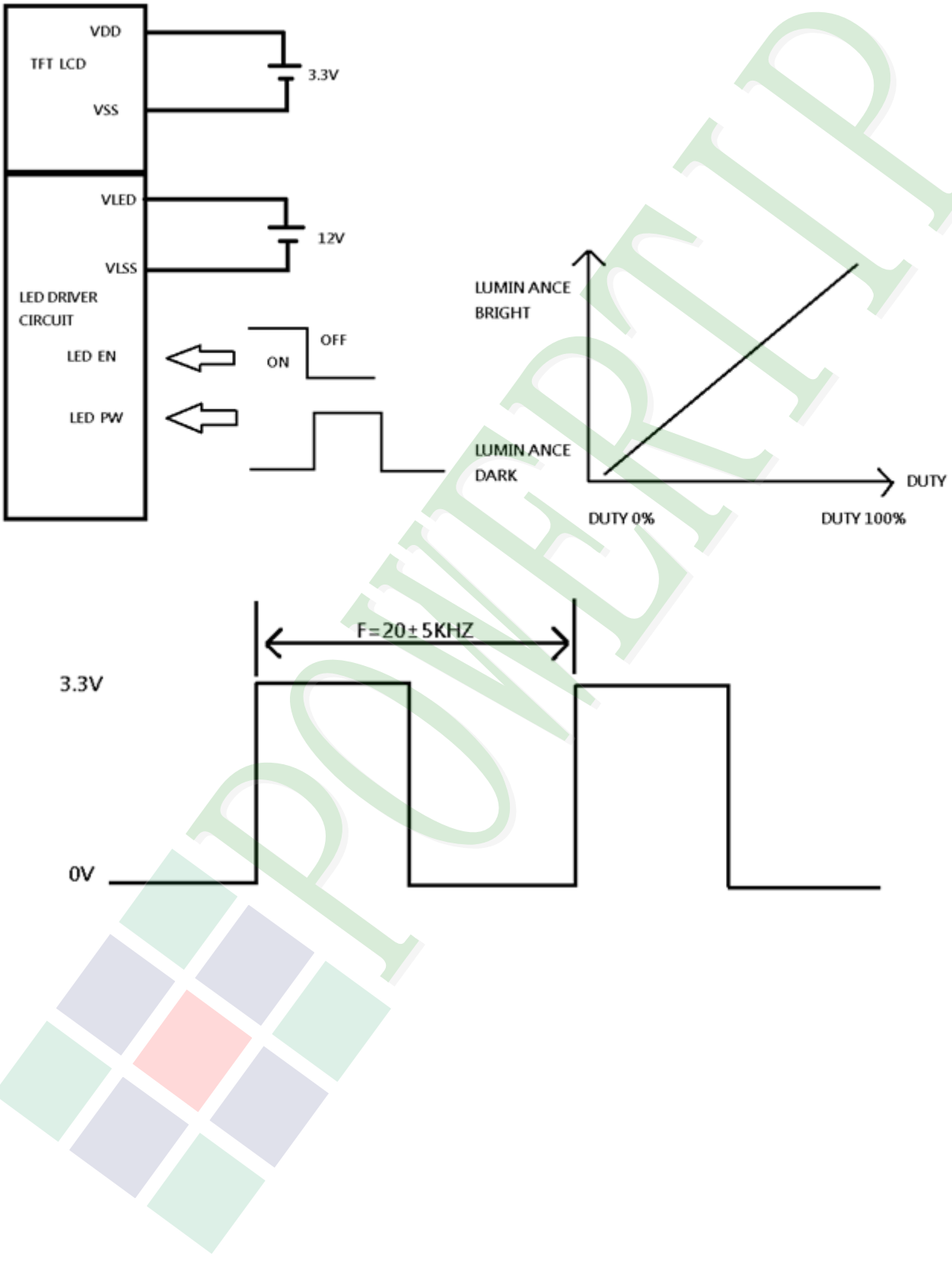
Pin No.	Symbol	Description
28	LED_EN	LED Backlight Enable Input.
29	NC	No Connection.
30	NC	No Connection.
31	LED_VCC	Power Supply for LED Backlight driving.
32	LED_VCC	Power Supply for LED Backlight driving.
33	LED_VCC	Power Supply for LED Backlight driving.
34	NC	No Connection.
35	NC	No Connection.
36	NC	No Connection.
37	NC	No Connection.
38	NC	No Connection.
39	NC	No Connection.
40	NC	No Connection.

CN1(CTP USB Interface):

Pin No.	Symbol	Description
1	VDD	Power Supply.(+5.0V)
2	D-	D- Differential Data Input.
3	D+	D+ Differential Data Input.
4	NC	No Connection.
5	GND	Ground.
6	NC	No Connection.

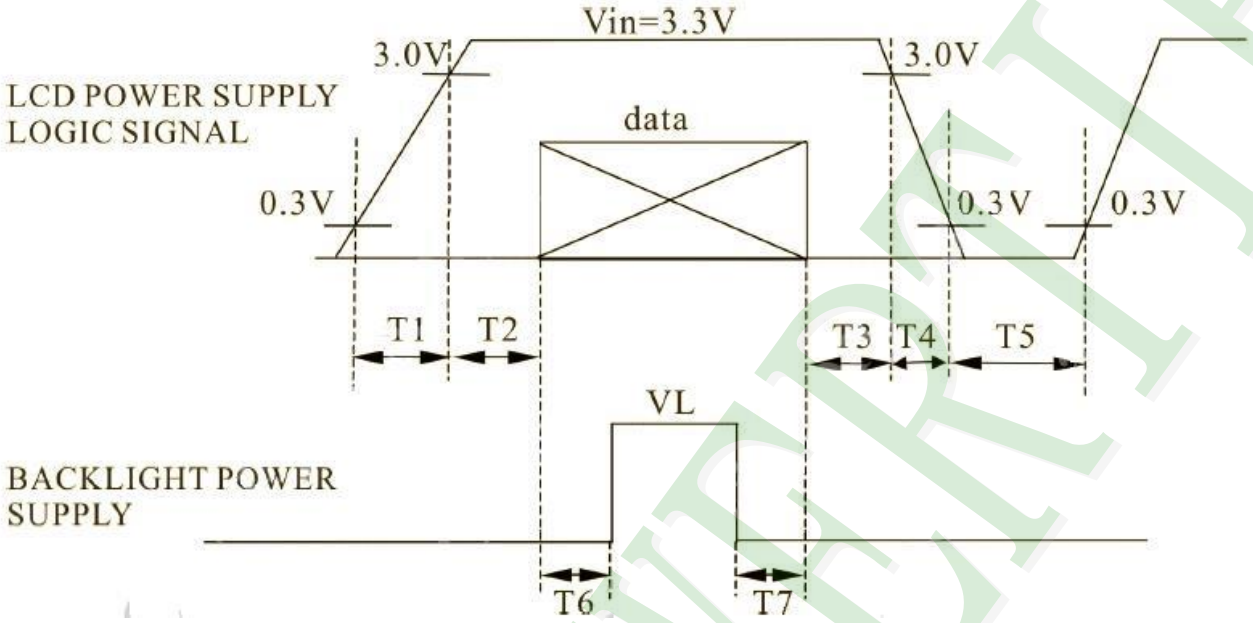
2.3 Power Supply Characteristics

2.3.1 POWER SUPPLY FOR LCM



2.3.2 POWER ,SIGNAL SEQUENCE

0.5<t1≤10ms 200ms≤t5
0<t2≤50ms 200ms≤t6
0<t3≤50ms 200ms≤t7
0<t4≤10ms

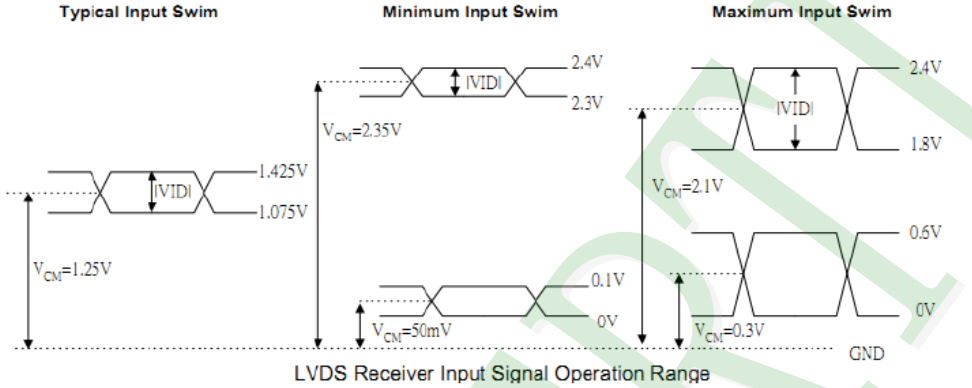


2.4 Timing Characteristics

2.4.1 LVDS Signal Timing Characteristics

DC Characteristics

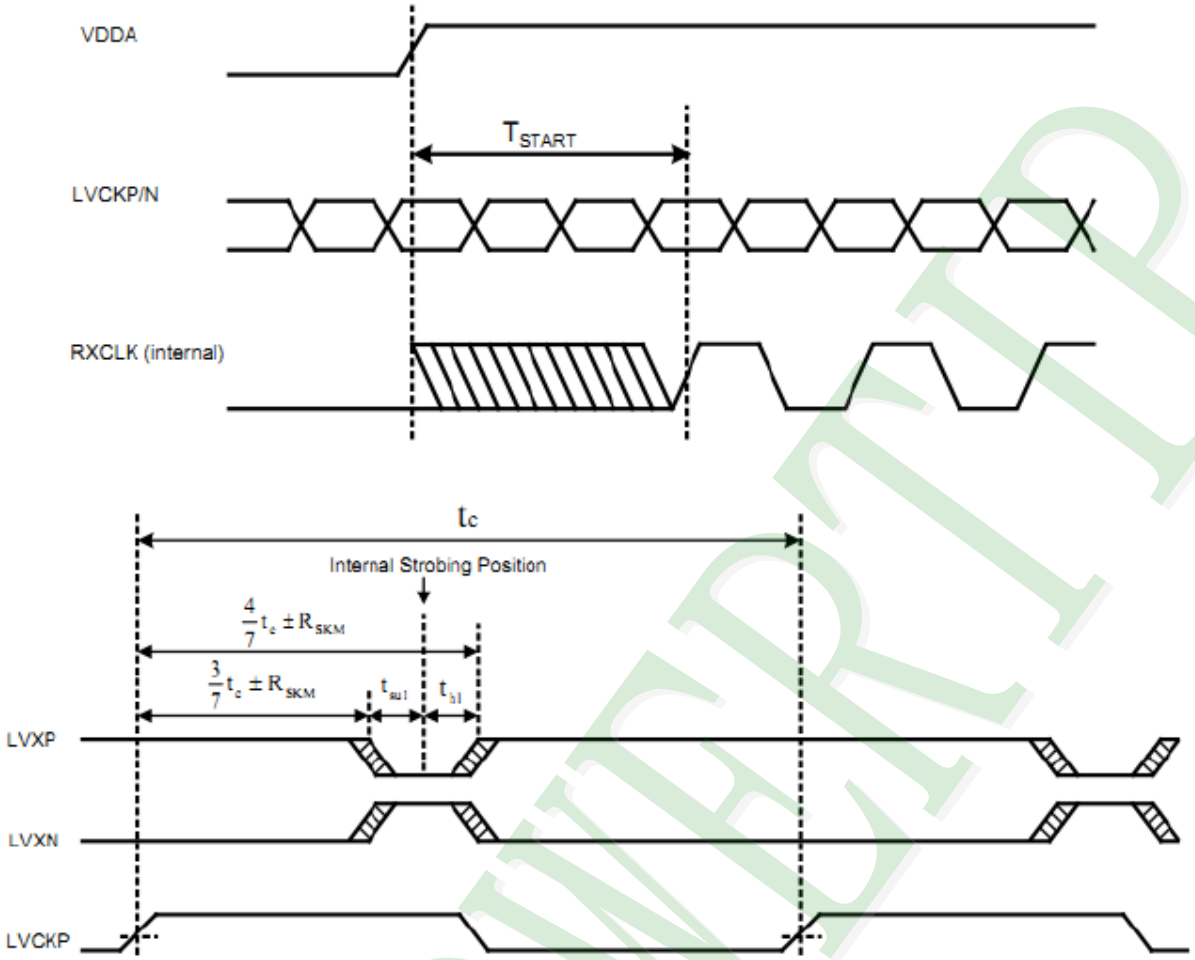
Symbol	Parameter	Conditions	Min.	Typ.	Max	Unit
V_{TH}	Differential Input High Threshold	V_{CM} =+1.2V	-	-	100	mV
V_{TL}	Differential Input Low Threshold		-100	-	-	mV
I_{CC}	Average Supply Current		-	TBD	-	mA



LVDS Receiver Input Signal Operation Range

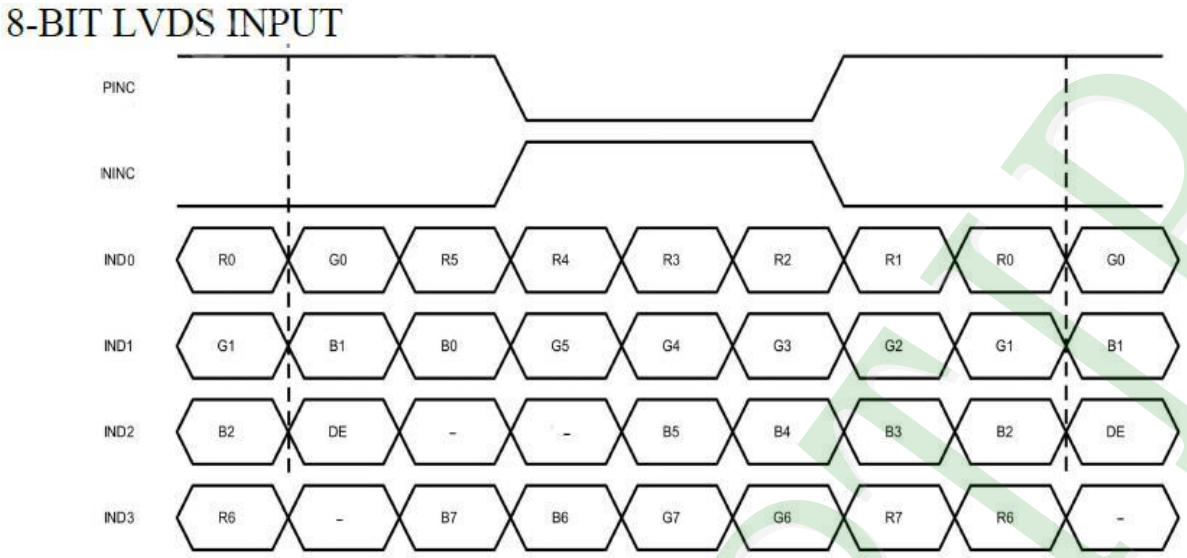
AC Characteristics

Symbol	Parameter	Conditions	Min.	Typ.	Max	Unit
F_{OP}	Input Operating Frequency range	RX_HF=0	25	-	100	MHz
		RX_HF=1	100	-	170	MHz
R_{SKM}	Receiver Skew Margin	85MHz, |VID|=400mV, V_{CM}=1.2V	450	-	-	pS
		150MHz, |VID|=400mV, V_{CM}=1.2V	267	-	-	pS
T_{STRAT}	Receiver startup time (after a valid LVDS clock is applied)		-	-	10	mS



NOTE: LVCK is advanced or delayed with respect to data until errors are observed at the receiver outputs. The advance or delay is then reduced until there are no data errors observed. The magnitude of the advance or delay is RSKM.

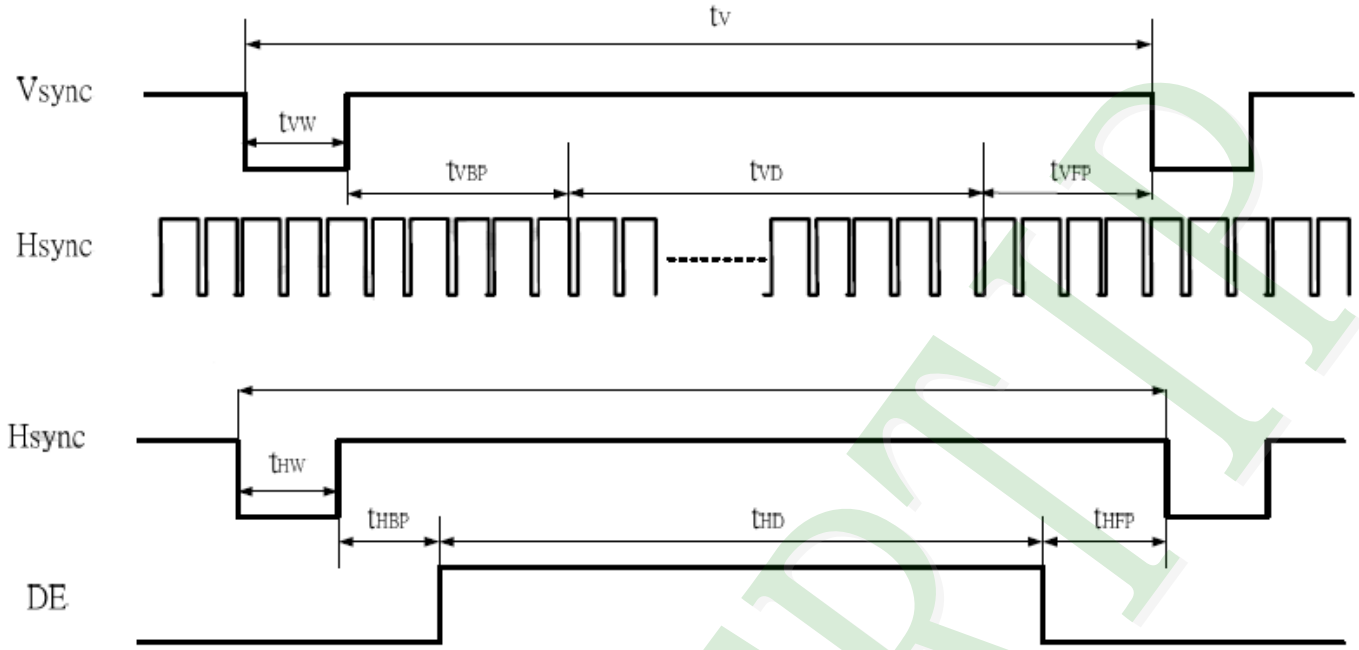
2.4.2 LVDS Data Input Format



2.4.3 Interface Timings

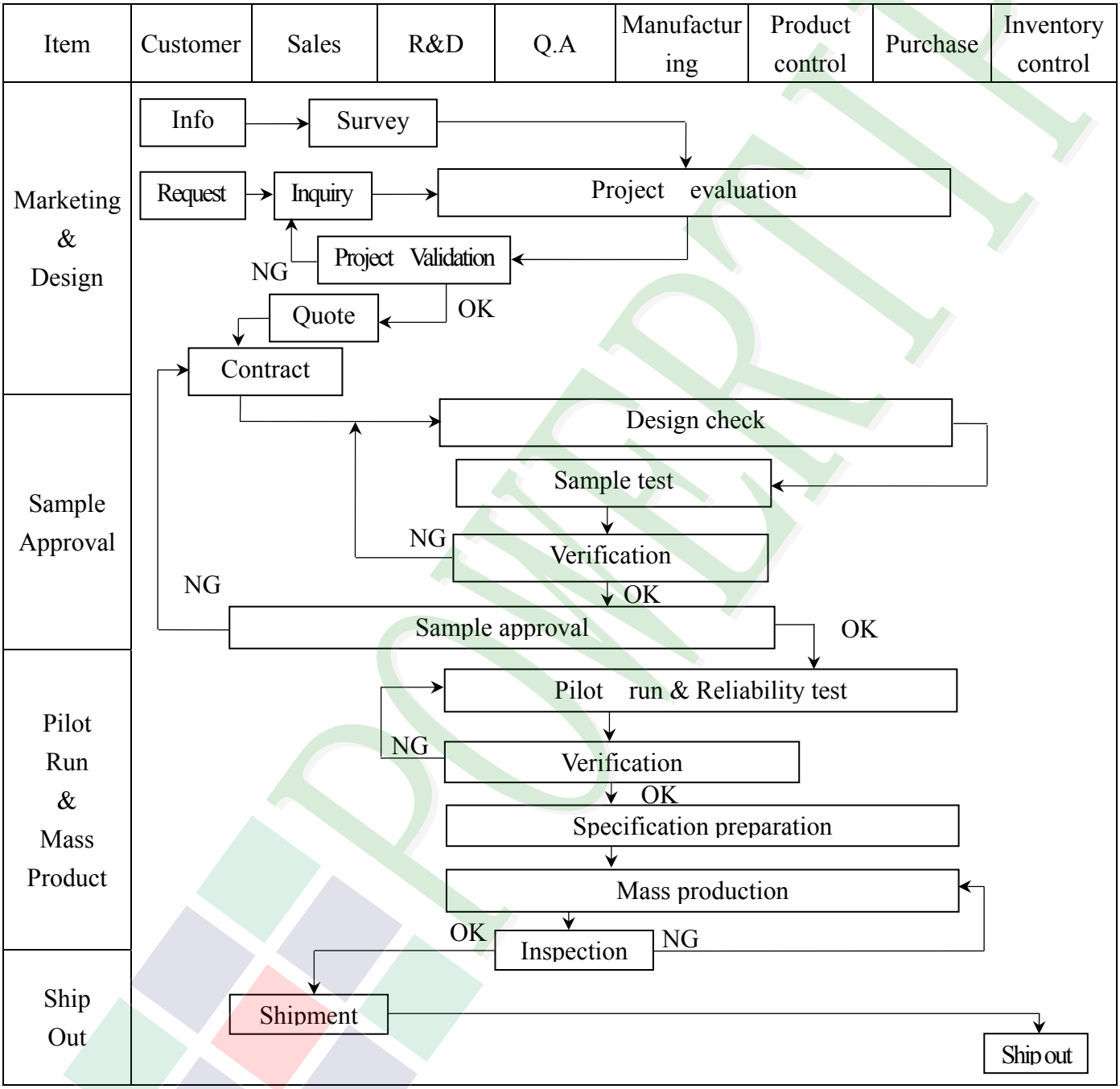
Parameter	Symbol	Unit	Min.	Typ.	Max.
Frame Rate	--	Hz	-	60	-
Frame Period	TV	line	815	823	1023
Vertical Display Time	TVD	line		800	
Vertical Blanking Time	TVW+TVBP+TVFP	line	15	23	33
1 Line Scanning Time	TH	clock	1410	1440	1470
Horizontal Display Time	THD	clock		1280	
Horizontal Blanking Time	THW+THBP+THFP	clock	60	160	190
Clock Rate	1/TC	MHz	68.9	71.1	73.4

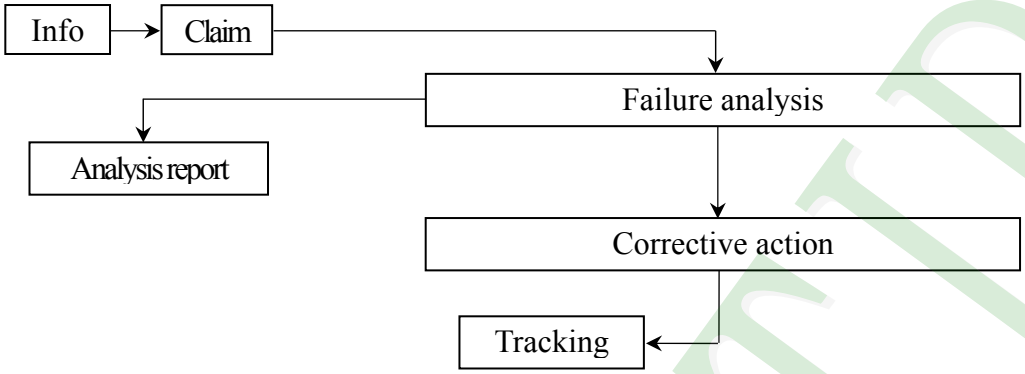
2.4.4 Timing Diagram of Interface Signal (DE mode)



3. QUALITY ASSURANCE SYSTEM

3.1 Quality Assurance Flow Chart



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

3.2. Inspection Specification

◆Scope：The document shall be applied to TFT-LCD Module for 3.5″ ~15″ (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

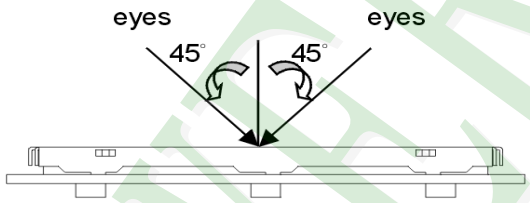
◆OUT Going Defect Level：Sampling.

◆Standard of the product appearance test：

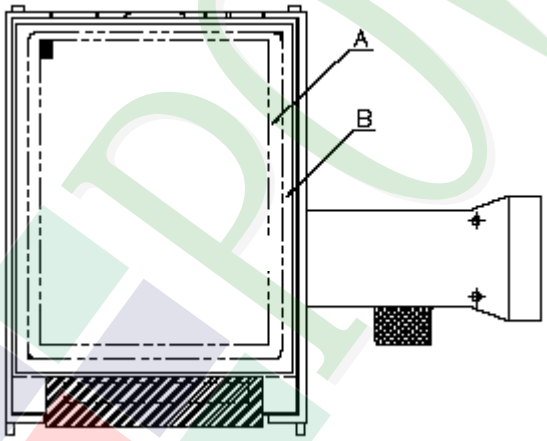
a. Manner of appearance test：

(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″ ~15″：

(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>1.1The 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>2.1The 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="6">04</td><td rowspan="6">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>4.6 Mura can not be seen through 5% ND filter.
(Mura : Under the normal examination angle of view,the picture has the non-uniform phenomenon.)</td><td>Minor</td></tr>
<tr><td>05</td><td>Dot defect

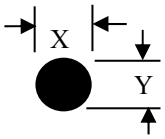
(Bright dot、Dark dot)

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.
5.4 Bright dot that can not be seen through 5% ND filter.
</td><td>Minor</td></tr>
</table>

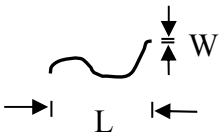
◆Specification For TFT-LCD Module 3.5″ ~15″：

(Ver.B01)

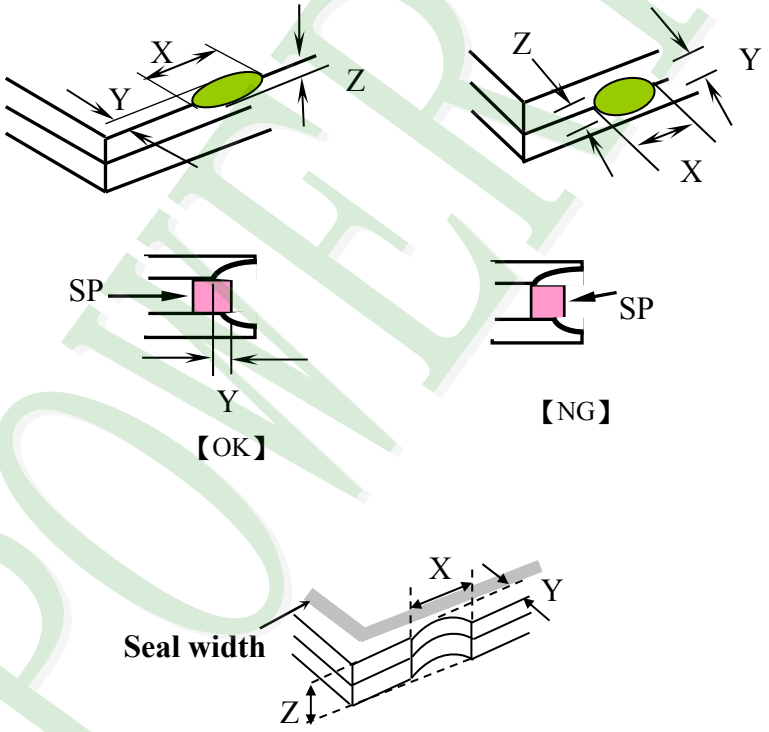
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>06</td><td>Black or white dot、scratch、contamination

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">module size</th><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 rowspan="5">3.5” to less 9”</td><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><tr><td rowspan="4">9” to 15”</td><td>---</td><td>W ≦ 0.05</td><td>Ignore</td><td rowspan="4">Ignore</td></tr><tr><td>L ≦10.0</td><td>0.05 ＜W ≦ 0.10</td><td>5</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″ ~15″ : (Ver.B01)

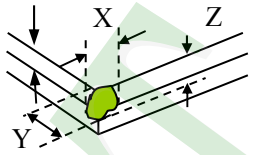
NO	Item	Criterion	Level
08	The crack of glass	Symbols : X : The length of crack Y : The width of crack. Z : The thickness of crack W : terminal length t : The thickness of glass a : LCD side length 8.1 General glass chip : 8.1.1 Chip on panel surface and crack between panels:  	Minor

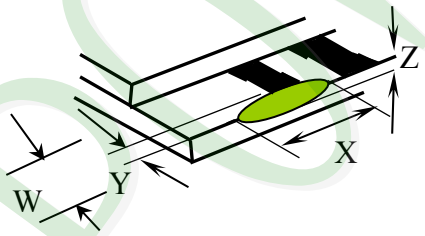
X	Y	Z
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

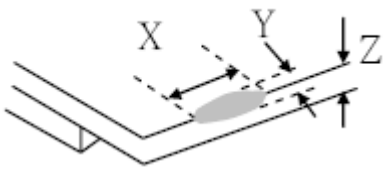
◆Specification For TFT-LCD Module 3.5″ ~15″ : (Ver.B01)

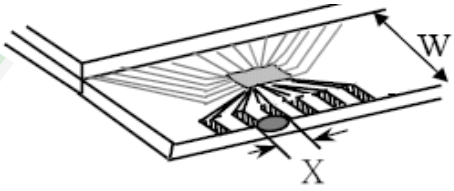
<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="2">08</td><td rowspan="2">The crack of glass</td><td>
Symbols :

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




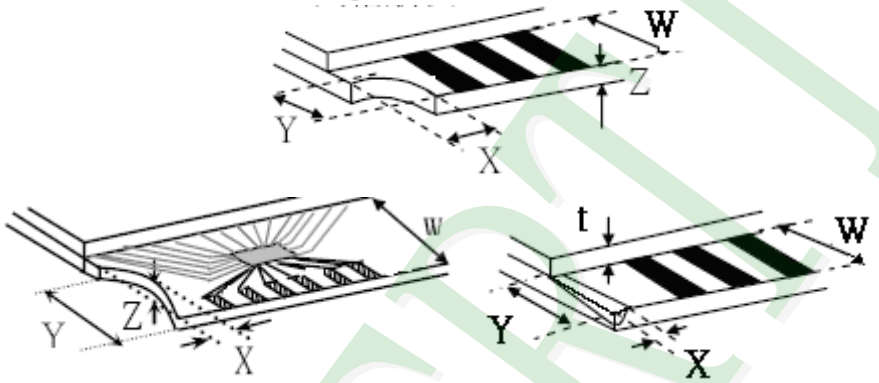


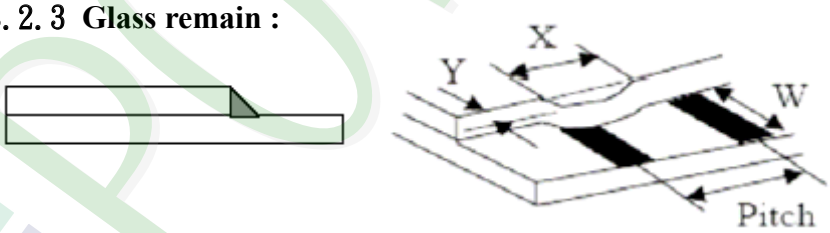
<table>
<tr><th></th><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>Front</td><td>≦ a</td><td>≦ 1/2 W</td><td>≦ t</td></tr>
<tr><td>Back</td><td>≦ a</td><td>≦ W</td><td>≦ 1/2 t</td></tr>
</table>
</td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~15″ : (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

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.
1.
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>
8.2.4 Cracking

Not Allowed
</td><td>Minor</td></tr>
</table>

◆Specification For TFT-LCD Module 3.5″ ~15″ : (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)

<table>
<tr><th>NO.</th><th>TEST ITEM</th><th>TEST CONDITION</th></tr>
<tr><td>1</td><td>High Temperature Operation Test</td><td>Keep in +70 ±2℃ 240 hrs ,Display ON
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>2</td><td>Low Temperature Operation Test</td><td>Keep in -20 ±2℃ 240 hrs ,Display ON
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>3</td><td>High Temperature Storage Test</td><td>Keep in +80 ±2℃ 240 hrs
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>4</td><td>Low Temperature Storage Test</td><td>Keep in -30 ±2℃ 240 hrs
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>5</td><td>High Temperature / High Humidity Storage Test</td><td>Keep in +60℃ / 90% R.H duration for 240 hrs
Surrounding temperature, then storage at normal condition 4hrs.
(Excluding the polarizer)</td></tr>
<tr><td>6</td><td>Temperature Cycling Storage Test</td><td>-30℃ → +25℃ → +80℃ → +25℃
(30mins) (5mins) (30mins) (5mins)
20 Cycle
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>7</td><td>ESD Test</td><td>Air Discharge:
Apply 2 KV with 5 times
Discharge for each polarity +/-
Contact Discharge:
Apply 250 V 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 sec)
(Tolerance if the output voltage indication : ±5%)</td></tr>
<tr><td>8</td><td>Vibration Test (Packaged)</td><td>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</td></tr>
<tr><td>9</td><td>Drop Test (Packaged)</td><td><table><tr><th>Packing Weight (Kg)</th><th>Drop Height (cm)</th></tr><tr><td>0 ~ 45.4</td><td>122</td></tr><tr><td>45.4 ~ 90.8</td><td>76</td></tr><tr><td>90.8 ~ 454</td><td>61</td></tr><tr><td>Over 454</td><td>46</td></tr></table>Drop direction :※1 corner / 3 edges / 6 sides each 1times</td></tr>
</table>

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 .

5.2.10 Caution!(LCM products with Capacitive Touch Panel)

Strong EMI-sources such as switch-mode power supplies (SMPS) can lead to touch malfunction (e.g. ghost-touches).

Therefore, the touch needs to be thoroughly tested inside the target application.

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.

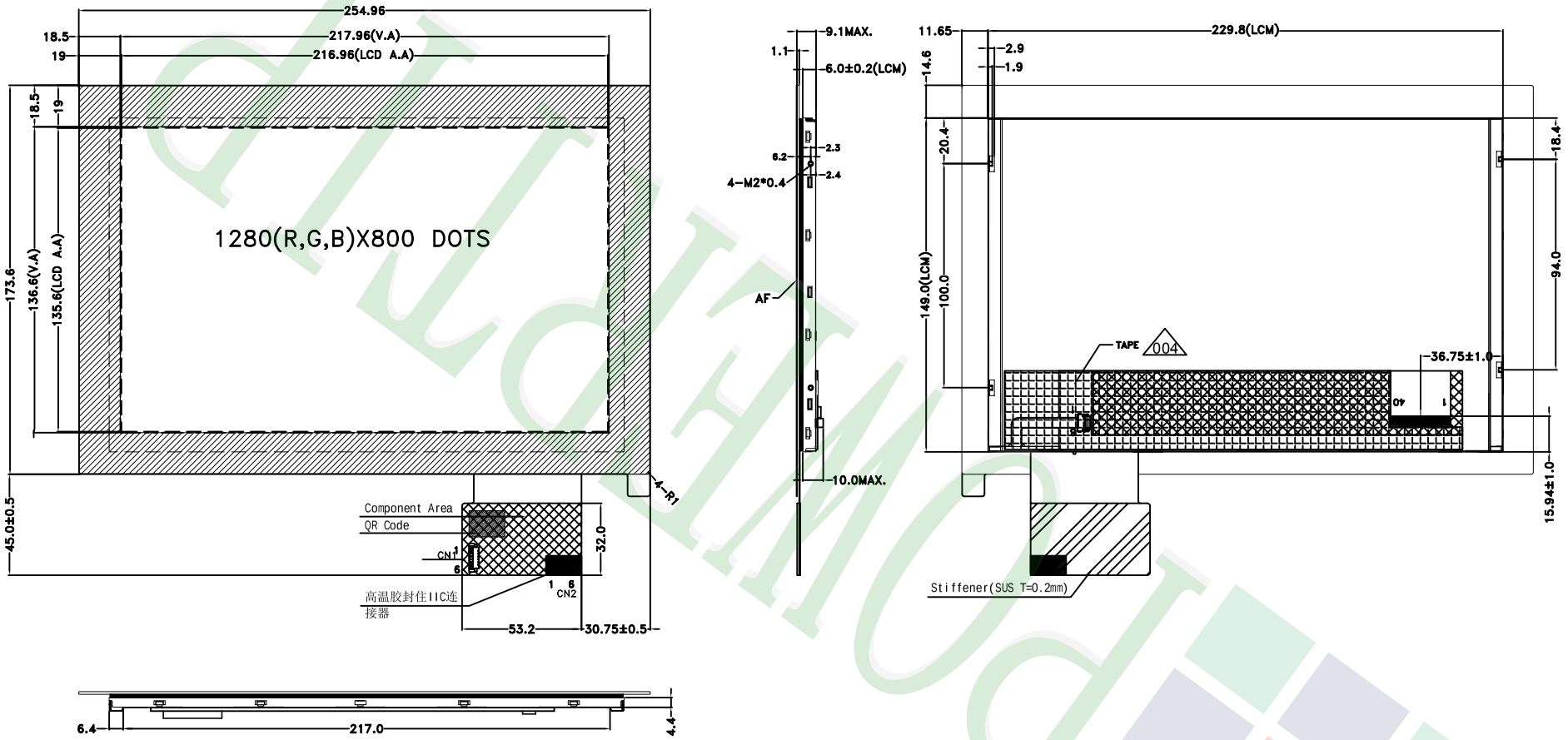
5.4 TERMS OF WARRANTY

5.4.1 Applicable warrant period

The period is within thirteen 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.



NOTES:

1. LCD TYPE: TFT LCD
2. LCD DISPLAY: POSITIVE/TRANSMISSIVE
3. The tolerance unless classified ±0.3mm
4. Manufacturer/Type :Starconn/300E40-0010RA-G3
5. Mating Receptacle/Type (Reference) :111B40-1211TA-G3 or Compatible
6. CN1:molex 53261-0671 OR EQUIVALENT.

REV	REV BY	REVISER	DATE
007			
006			
005			
004	ADD TAPE	Air	2020/04/10
003	UPDATE BL&FC	Air	2019/11/22
002	--	Air	-
001	NEW DRAWING	Air	2018/01/31

PART NO: PH128800T004-ZZC06

DRAWING NAME : JLMD-PH128800T004-ZZC06

TITLE: LCD MODULE DRAWING

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

Design	Air	(3)	Surface
Check	-	Unit	MM
Approve	Terry	Scale	1:1
		Page	1/1
		Material	
		Thickness	
		Quantity	

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

PT-A-054-01

Ver.001

Documents NO. JPKG-PH128800T004-ZZC06

LCM包裝規格書
LCM Packaging Specifications
(For Tray)

Approve	Check	Contact
Ryan	Terry	Air

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

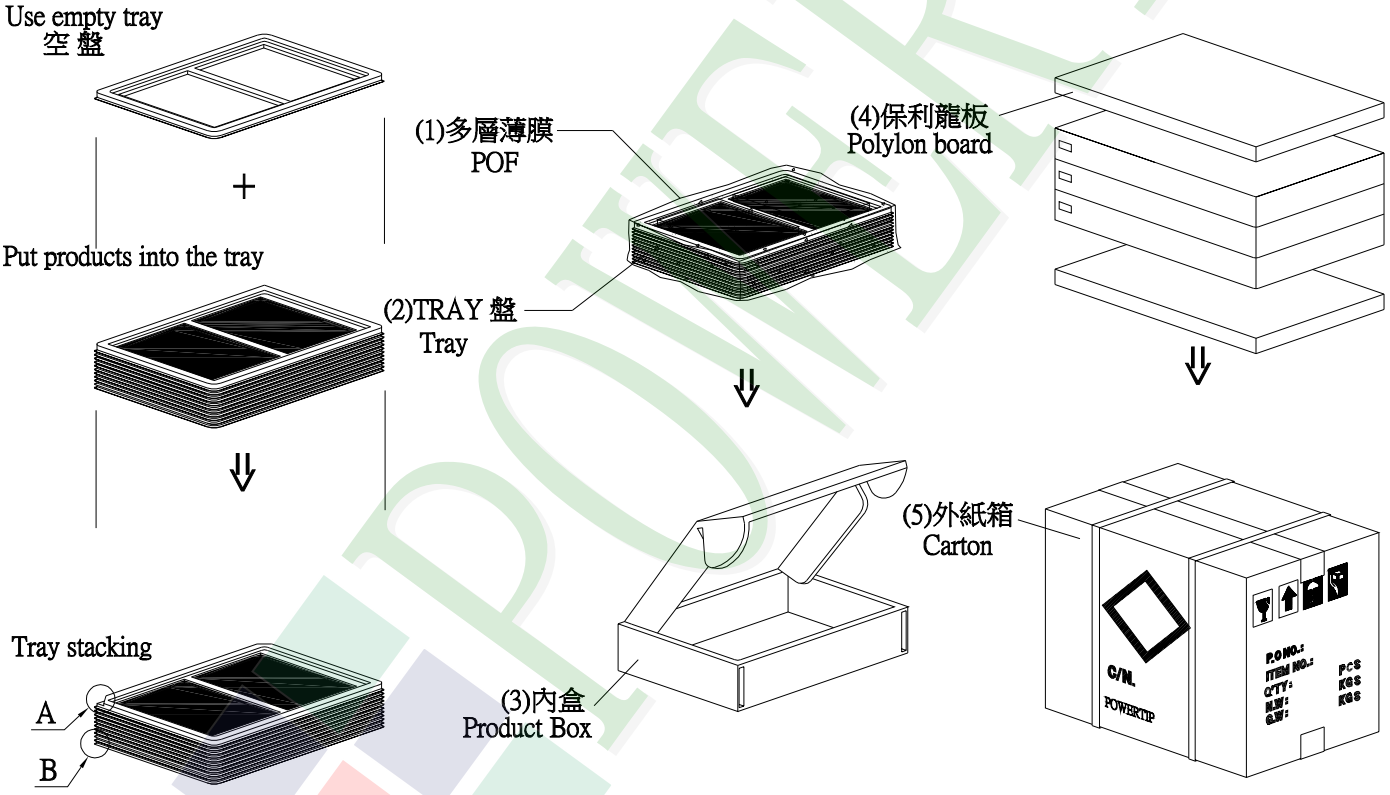
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PH128800T004-ZZC06	254.96 X 173.6 X 9.1	0.4337	18	7.8066
2	多層薄膜(1)POF	OTFILM0BA03ABA	————	——	3	——
3	TRAY 盤 (2)Tray	TY00000000394	517 X 377 X 18.8	0.2	12	2.4
4	內盒(3)Product Box	BX00000000071	558 X 393 X 68	0.6	3	1.8
5	保利龍板(4)Polylon board	OTPLB00PL08ABA	550 X 393 X 20	0.0284	2	0.0568
6	外紙箱(5)Carton	BX57041027CCBA	570 X 410 X 265	1.0	1	1.0
7						
8						
9						

2.一 整箱總重量 (Total LCD Weight in carton) : 13.06 Kg±10%

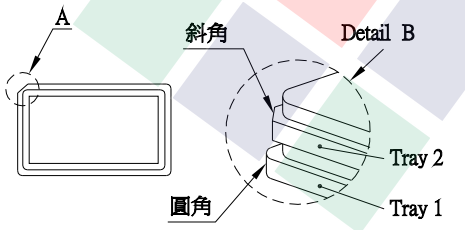
3.單箱數量規格表 (Packaging Specifications and Quantity) :

(1)LCD quantity per box : no per tray 2 x no of tray 3 = 6

(2)Total LCD quantity in carton : quantity per box 6 x no of boxes 3 = 18



特 記 事 項 (REMARK)



4. TRAY盤相疊時,需旋轉180度,請詳見B視圖
Rotate tray 180 degrees and place on top of stack.
Check the tray stack using Fig. B.