POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	PTC
SAMPLE CODE	:	SG240128WRFAGAHPCQ
MASS PRODUCTION CODE	:	PG240128WRFAGAHPCQ
SAMPLE VERSION	:	03
SPECIFICATIONS EDITION	:	008
DRAWING NO. (Ver.)	:	JLMD-PG240128WRFAGAHPCQ_001
PACKAGING NO. (Ver.)	:	JPKG-PG240128WRFAGAHPCQ_003

Customer Approved

Date:

POWERTIP
2015.03.06
JS RD APPROVED

Approved	Checked	Designer
閆偉	張久慧	劉進

□ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

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RECORDS OF REVISION

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
07/21/2006	0	-	PG240128WRFAGAHPCQ is the ROSH compliant part number based on Powertip's standard PG240128WRF-AGAHPC	-	-
08/14/2007	A	-	Update Backlight Characteristics	-	-
12/30/2010	02	003	Modify LCM Mechanical Diagram	9	Kyo
10/11/2013	02	004	Add Display Command 7&Packaging	22, Appendix	Bruce
11/08/2013	02	005	Update Specification	-	Bruce
12/26/2013	02	006	Modify Backlight Forward Voltage	11	Bruce
06/18/2014	03	007	Modify Backlight&PCB	-	Bruce
02/27/2015	03	008	Update Backlight Characteristics	11	劉進

Total：28 Pages

Contents

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Type	240*128 dots
LCD Type	FSTN, White Transflective, Positve,Extended temp
Driver Condition	LCD Module :1/128Duty, 1/12Bias
Viewing Direction	6 O'clock
Backlight	White LED B/L
Weight	170.5g
Interface	-
Other(controller / driver IC)	SAP1024B
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	144.0(L)*104.0(W)*16.0(H)(MAX)	mm
Viewing Area	114.0(L)*64.0(W)	mm
Active Area	107.95(L)*57.55(W)	mm
Dot Size	0.40(L)*0.40(W)	mm
Dot Pitch	0.45(L)*0.45(W)	mm

Note：For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply Voltage	V_{DD}	-	-0.3	7.0	V
LCD Driver Supply Voltage	V_{EE}	-	0	22.0	V
Input Voltage	V_{IN}	-	-0.3	V_{DD}+0.3	V
Operating Temperature	T_{OP}	Excluded B/L	-20	70	℃
Storage Temperature	T_{ST}	Excluded B/L	-30	80	℃
Storage Humidity	H_D	Ta＜60 ℃	-	90	%RH

1.4 DC Electrical Characteristics

Ta = 25℃

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Logic Supply Voltage	V_{DD}	-	4.5	5.0	5.5	V
“H” Input Voltage	V_{IH}	-	V_{DD}-2.2	-	V_{DD}	V
“L” Input Voltage	V_{IL}	-	0	-	0.8	V
“H” Output Voltage	V_{OH}	-	V_{DD}-0.3	-	V_{DD}	V
Operating Frequency	f_{OSC}	-	0.4	-	5.5	MHz
“L” Output Voltage	V_{OL}	-	0	-	0.3	V
Supply Current	I_{DD}	VDD =5.0V，V_{OP}=17.2V Pattern= Horizontal line*1	-	40	60	mA
LCM Driver Voltage	V_{OP}	-20℃	18.1	18.3	18.5	V
		25℃*2	17.0	17.2	17.4	
		70℃	16.5	16.7	16.9	

NOTE: *1 The Maximum current display

*2 The VOP test point is V_{DD}- V_O

1.5 Optical Characteristics

LCD Panel：1/128Duty，1/12Bias,V_{LCD}=17.2V，Ta =25℃

Item		Symbol	Conditions	Min.	Typ.	Max.	Unit	Reference
Response Time	Rise	tr	-	-	110	170	ms	Note2
	Fall	tf		-	240	360		
Viewing angle range	Top	θ+	C≥2.0	-	40	-	Deg.	Notes 1
	Bottom	θ-		-	40	-		
	Left	θL		-	45	-		
	Right	θR		-	45	-		
Contrast Ratio		C	θ= 0°	-	3	-	-	Note 3
Average Brightness (with LCD) *2		IV	IF =160mA	130	185	-	cd/m2	Note 4
Color of CIE Coordinate (with LCD)		X		0.26	0.31	0.36	-	
		Y		0.29	0.34	0.39	-	
Uniformity *1		△B		70	-	-	%	

Note 4 ：

1：△B=B(min) / B(max) * 100%

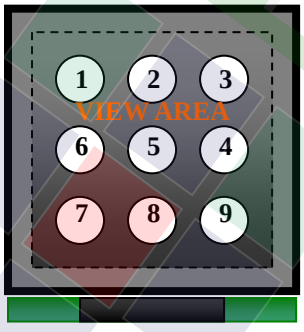
2：Measurement Condition for Optical Characteristics:

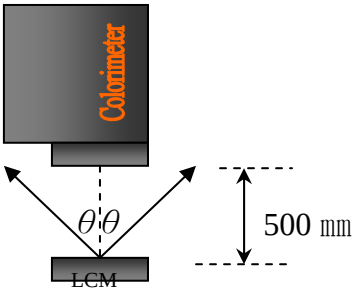
a：Environment: 25℃±5℃ / 60±20%R.H，no wind，dark room below 10 Lux at typical lamp current and typical operating frequency.

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%



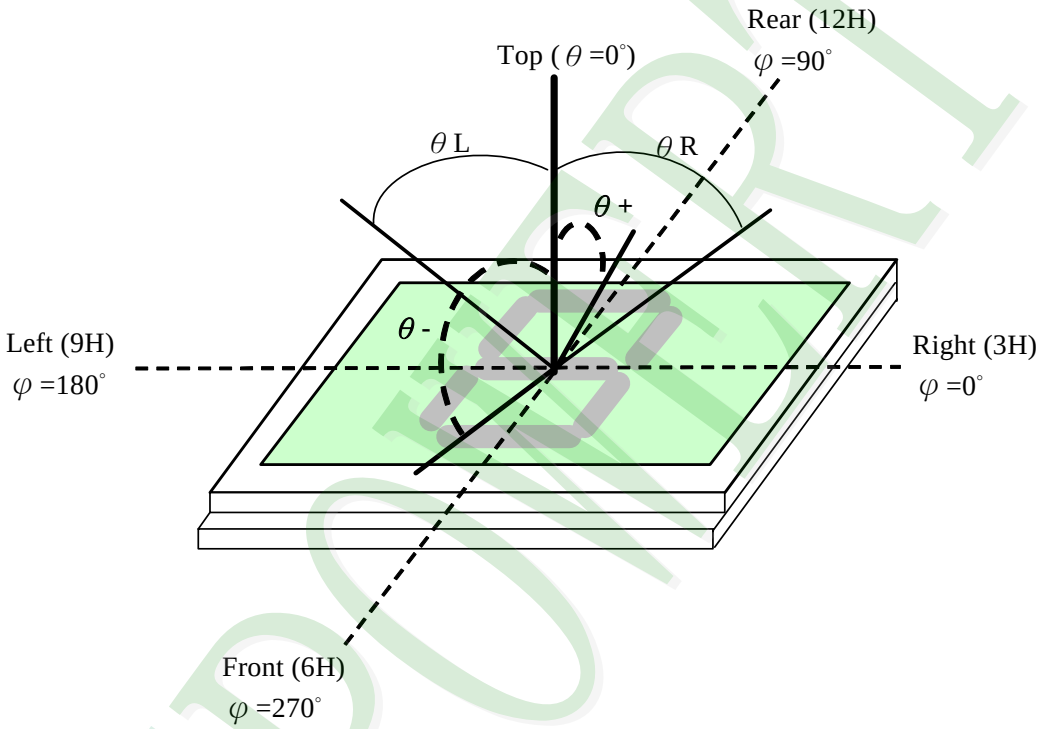


Colorimeter=BM-7 fast

Note 1.

Optical characteristics-2

Viewing angle

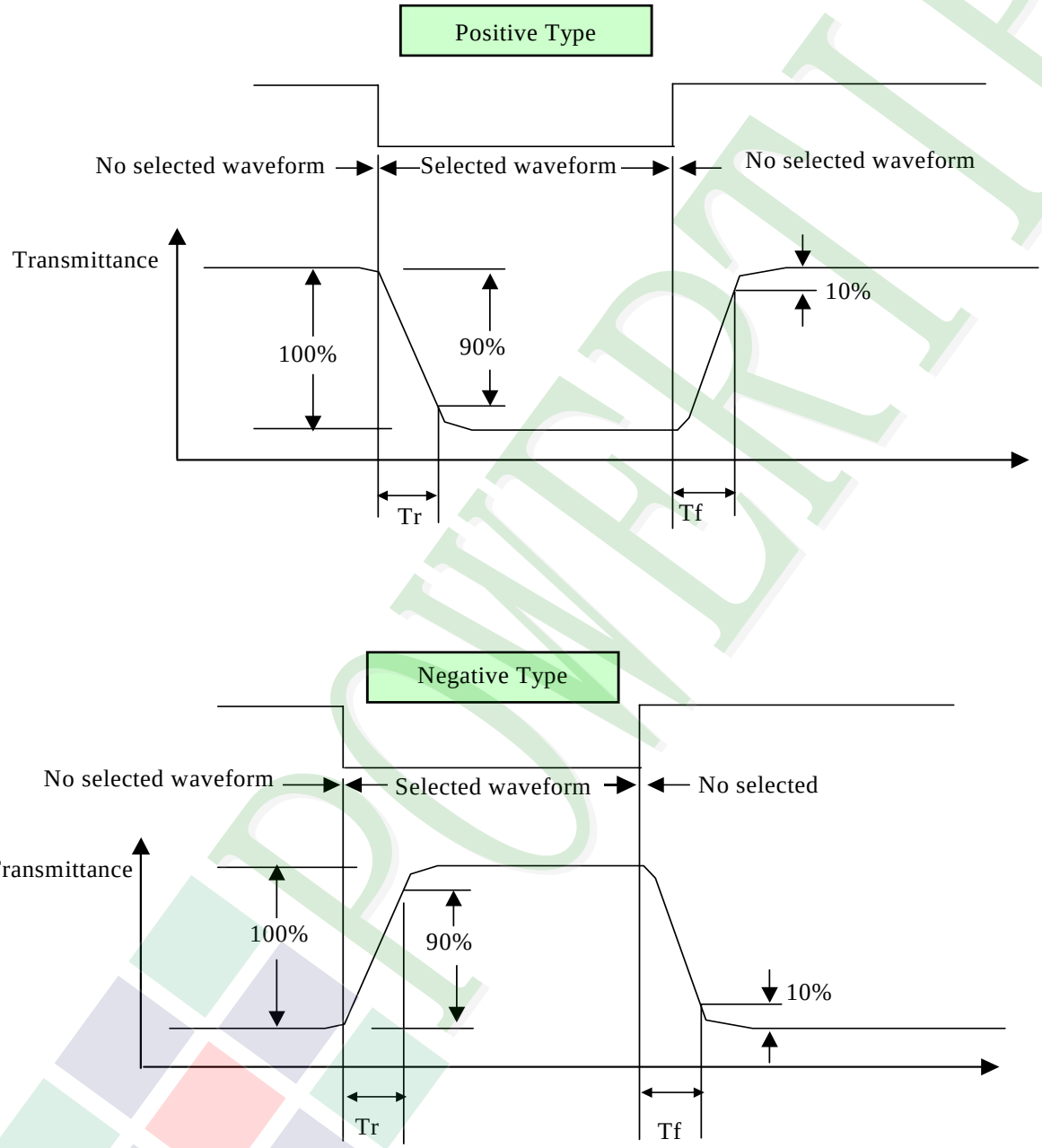


Viewing angle

Note 2.

Optical characteristics-3

Fig.2 Definition of response time



Electrical characteristics-2

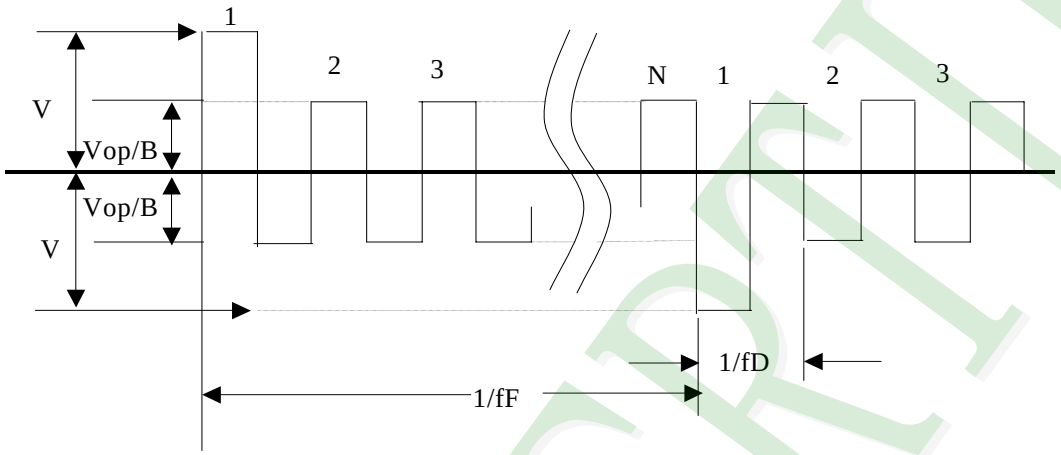
※2 Drive waveform

Vop: Drive voltage　　fF: Frame frequency

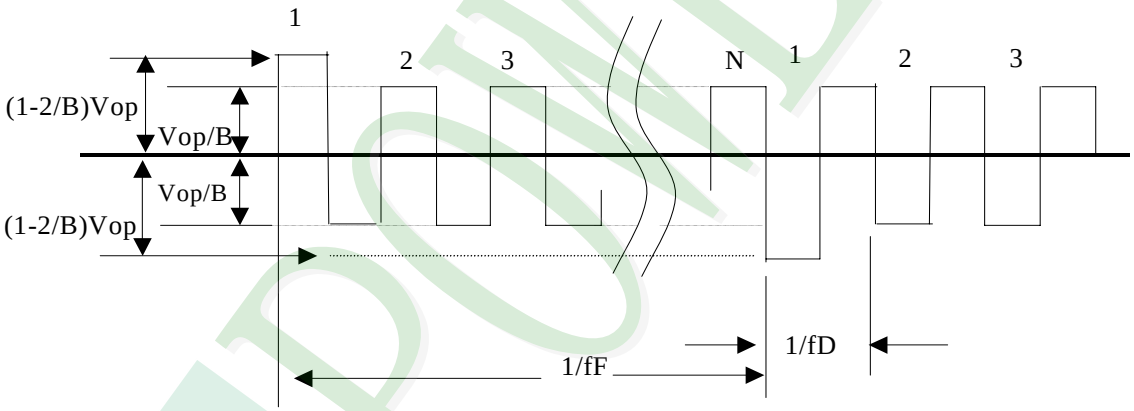
1/B: Bias　　fD: Drive frequency

N: Duty

(1) Selected waveform



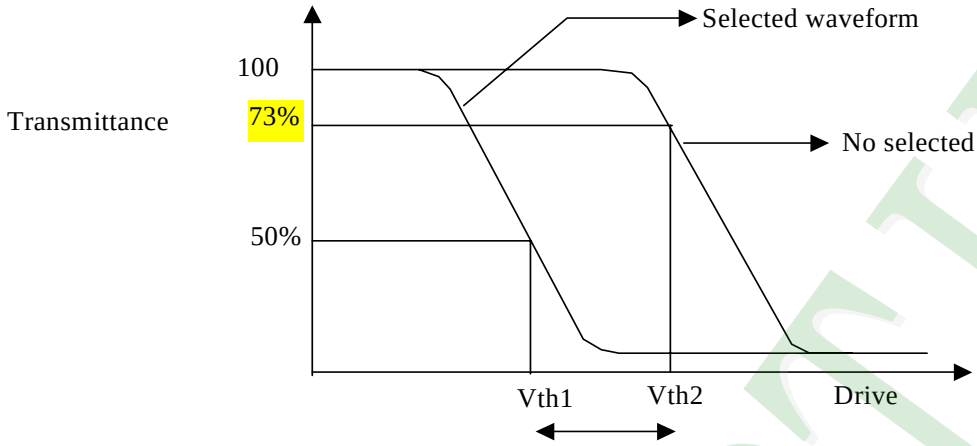
(2) Non- Selected wave form



Note:

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

Note 3. : Definition of Vth

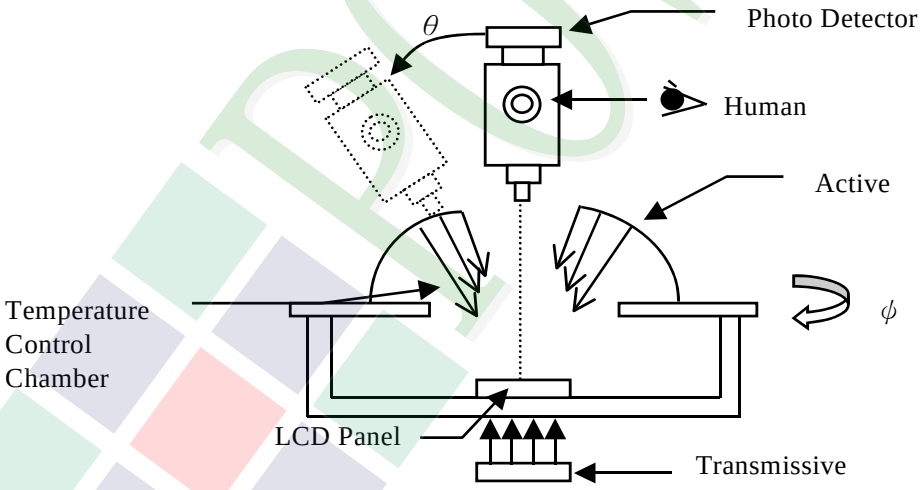


Active voltage range

	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 Characteristics

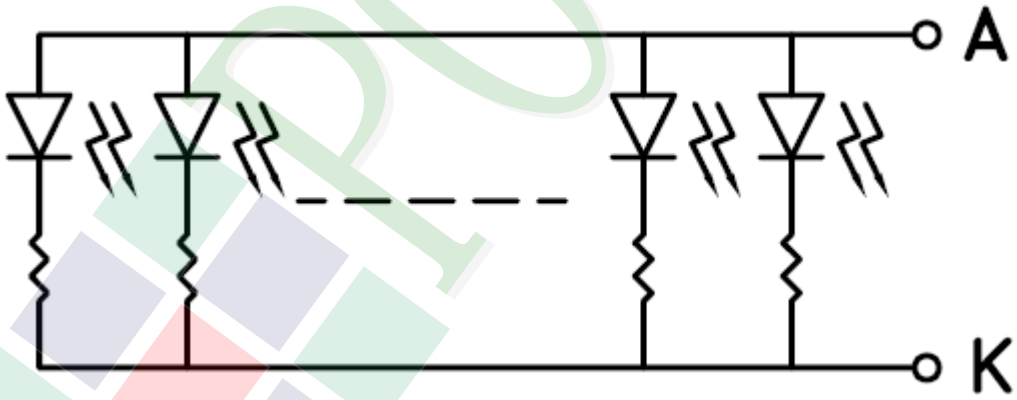
Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
Forward Current	IF	Ta =25℃	-	200	mA
Reverse Voltage	VR	Ta =25℃	-	5	V
Power Dissipation	PO	Ta =25℃	-	760	mW

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min	Typ	Max	Unit
Forward Voltage	V_F	IF = 160 mA	-	3.2	3.8	V
Average Brightness (Without LCD)	IV		900	1280	-	cd / m^2
CIE Color Coordinate (Without LCD)	X		0.27	-	0.32	-
	Y		0.27	-	0.32	-
Uniformity	△B		75	-	-	%
Reverse Current	IR	VR = 5 V	-	-	80	uA
Color	White					

Circuit diagram：



1*8=8 Dices

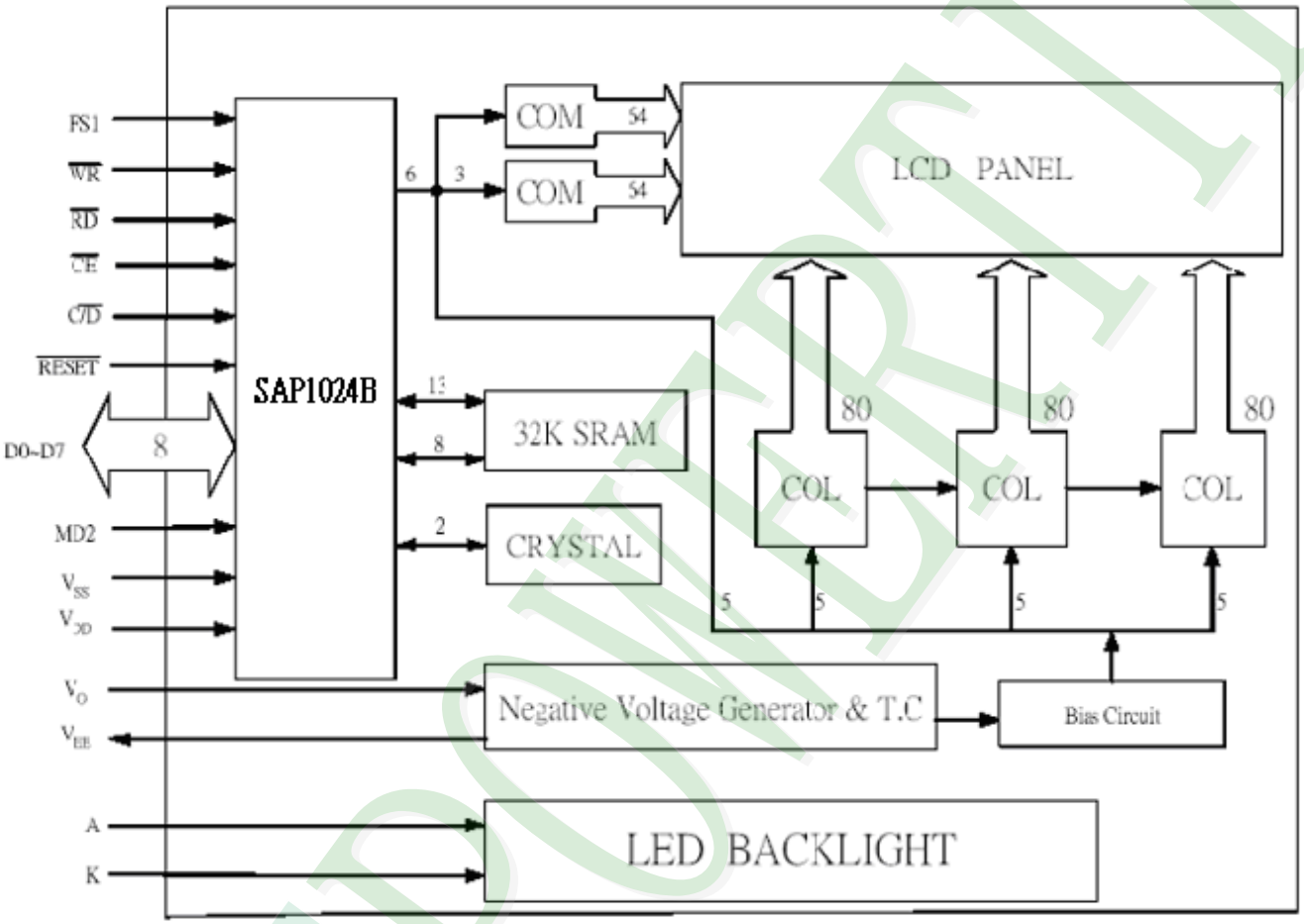
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram

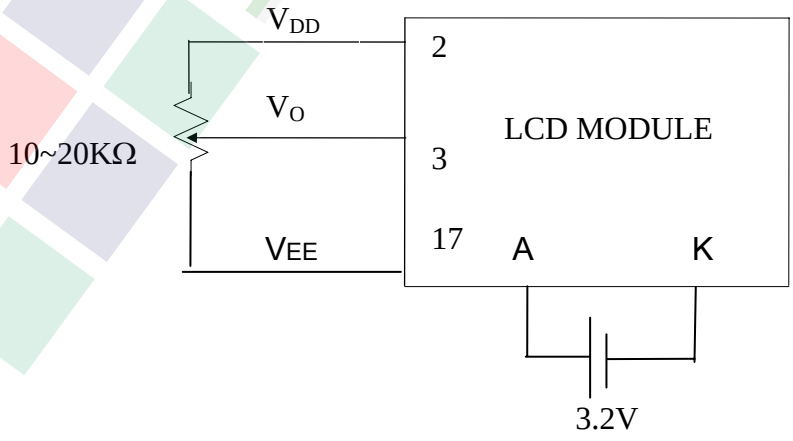


2.2 Interface Pin Description

Pin No.	Symbol	Function
1	V_{SS}	Power Supply (V_{SS}=0)
2	V_{DD}	Power Supply (V_{DD}>V_{SS})
3	V_O	Operating voltage for LCD (variable)
4	C/$\overline{D}$	$\overline{WR}$ ="L";C/$\overline{D}$ = "H" :command write, C/$\overline{D}$ ="L":data write $\overline{RD}$ ="L";C/$\overline{D}$ = "H" :command read, C/$\overline{D}$ ="L":data read
5	$\overline{RD}$	Data read (read data from the module at "L")
6	$\overline{WR}$	Data write (write data to the module at "L")
7~14	D0~D7	Data bus (D0=MSB, D7=LSB)
15	$\overline{CE}$	Chip enable for the module (active at "L")
16	$\overline{RESET}$	Controller reset (module reset)
17	V_{EE}	Power supply for LCD drive
18	MD2	Columns select ; connect to V_{DD} :32 columns connect to Vss :40 columns
19	FS1	Font select : connect to V_{DD} : 6*8 Dots font connect to Vss : 8*8 Dots font
20	NC	Not connection
A	A	B/L(+)
K	K	B/L(-)

2.2.1 Application Notes:

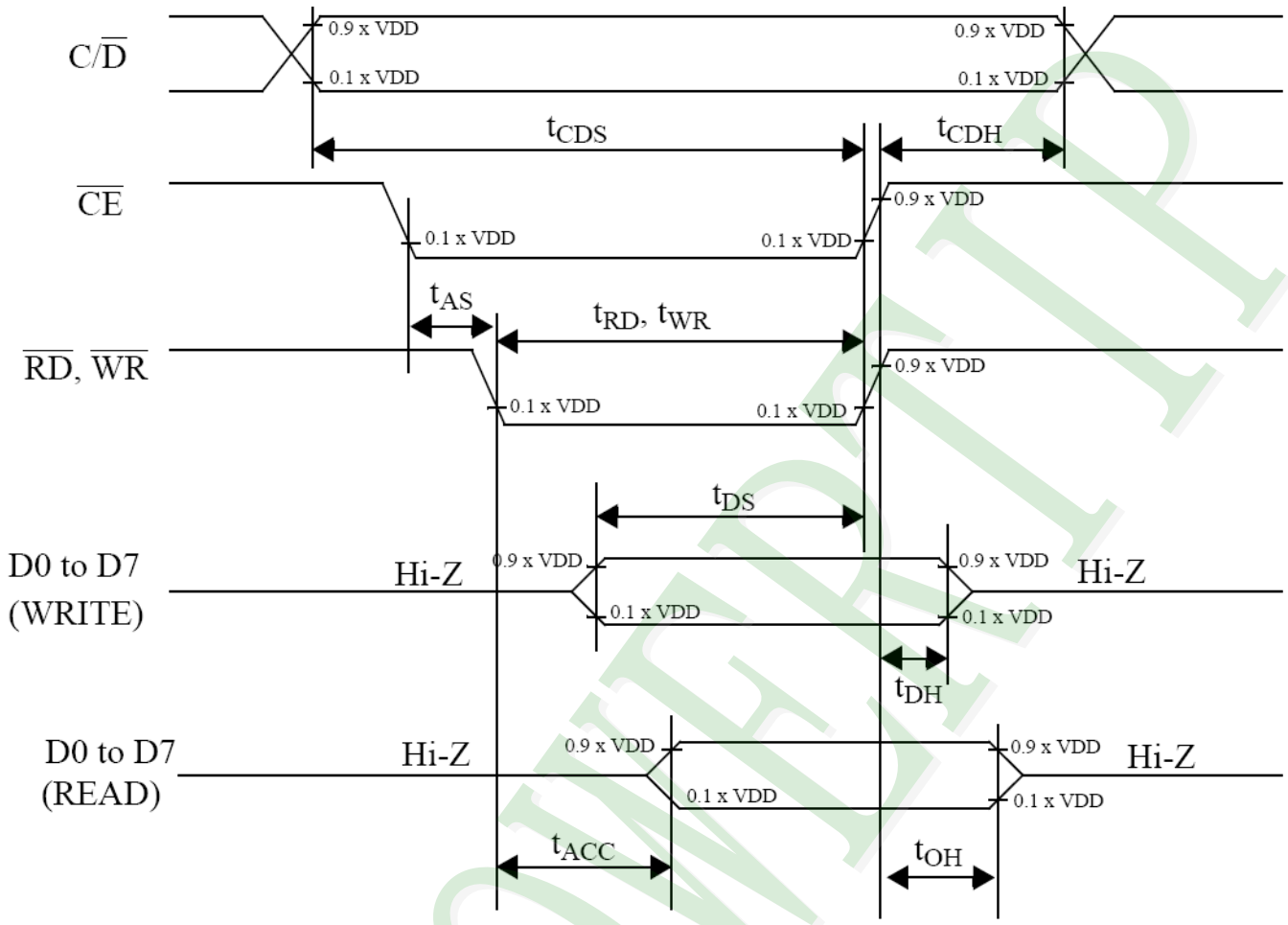
Contrast Adjust



2.2.1 Application Notes:

```
void int_sap1024()
{
write_data(0x00);                    //set text home address
write_data(0x00);
write_com(0x40);

write_data(0x1e);                     //set text home area
write_data(0x00);
write_com(0x41);

write_data(0x00);                     //set graphic home address
write_data(0x0f);
write_com(0x42);

write_data(0x1e);                     //set graphic home area
write_data(0x00);
write_com(0x43);

write_data(0x00);                    // set offset register
write_data(0x00);
write_com(0x22);

write_com(0xa7);                    //select 8-line cursor

write_com(0x81);                    //select internal CG ROM mode

write_com(0x90);                    //set text off, graphic off, cursor off, blink off
}
```

2.3 Timing Characteristics



VDD=5.0V±0.5V,VSS=0，Ta=25℃

symbol	parameter	MIN.	MAX.	test conditons	Unit
t_{CDS}	C/$\overline{D}$ set-up time	100			ns
t_{CDH}	C/$\overline{D}$ hold time	10			ns
t_{RD}, t_{WR}	$\overline{RD}$, $\overline{WR}$ pulse width	80			ns
t_{AS}	Address set-up time	0			ns
t_{AH}	Address hold time	0			ns
t_{DS}	Data set-up time	80			ns
t_{DH}	Data hold time	40		Note	ns
t_{ACC}	Access time		150	Note	ns
t_{OH}	Output hold time	10	50	Note	ns

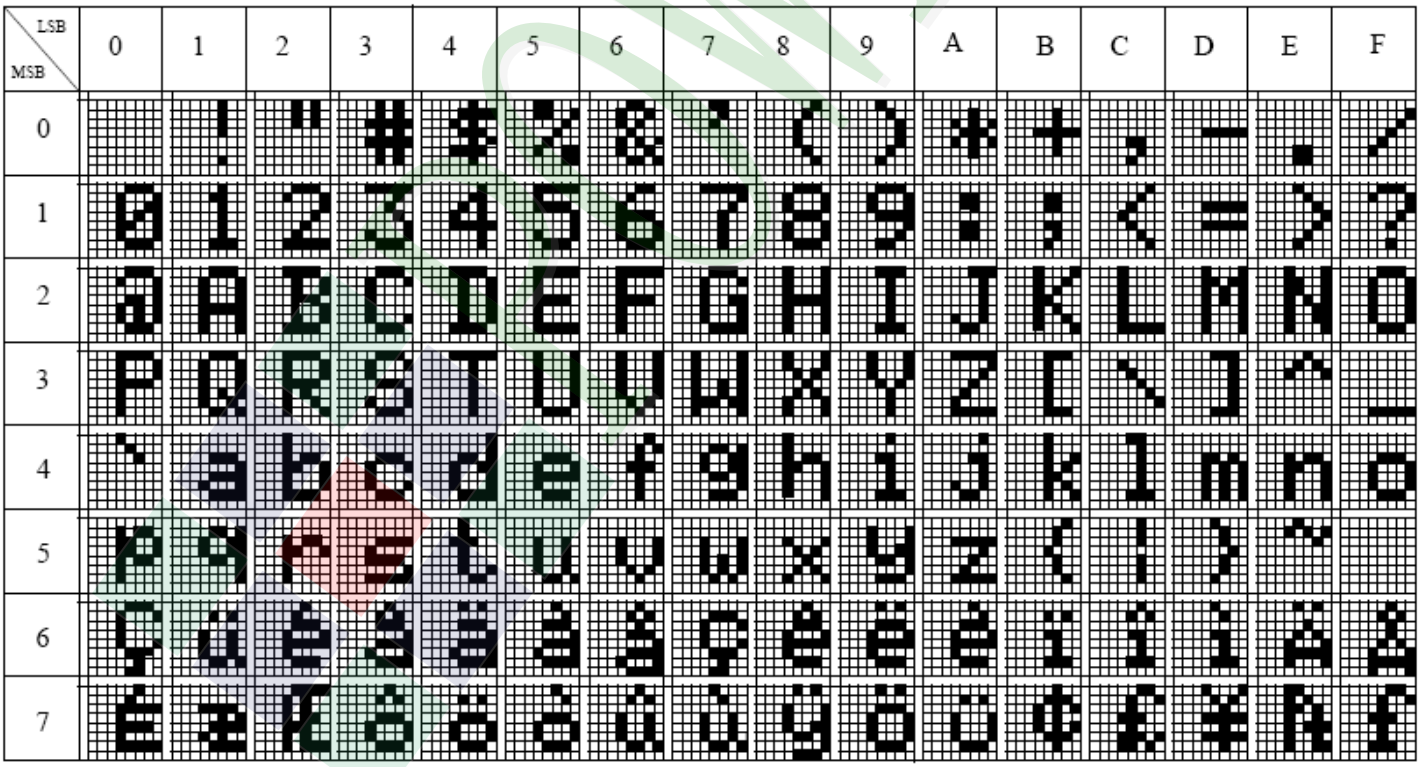
2.4 Display command

COMMAND	CODE	OPERAND 1	OPERAND 2	FUNCTION
Register Setting	0010 0001	X address	Y address	Set cursor pointer
	0010 0010	Data	00H	Set offset register
	0010 0100	Low address	High address	Set address pointer
Set Control Word	0100 0000	Low address	High address	Set text home address
	0100 0001	Columns	00H	Set text area
	0100 0010	Low address	High address	Set graphic home address
	0100 0011	Columns	00H	Set graphic area
Mode Set	1000 x000			OR mode
	1000 x001			EXOR mode
	1000 x011			AND mode
	1000 x100			Text Attribute mode
	1000 0xxx			Internal CG ROM mode
	1000 1xxx			External CG RAM mode
Display mode	1001 0000			Display OFF.
	1001 xx10			Cursor ON, blink OFF.
	1001 xx11			Cursor ON, blink ON.
	1001 01xx			Text ON, graphic OFF.
	1001 10xx			Text OFF, graphic ON.
	1001 11xx			Text ON, graphic ON.
Cursor Pattern Select	1010 0000			Selec one-line cursor.
	1010 0001			Select two-line cursor.
	1010 0010			Select three-line cursor.
	1010 0011			Select four-line cursor.
	1010 0100			Select five-line cursor.
	1010 0101			Select six-line cursor.
	1010 0110			Selec seven-line cursor.
	1010 0111			Select eight-line cursor.
Data Auto Read/Write	1011 0000			Select Data Auto Write
	1011 0001			Select Data Auto Read
	1011 0010			Reset Auto Read/Write

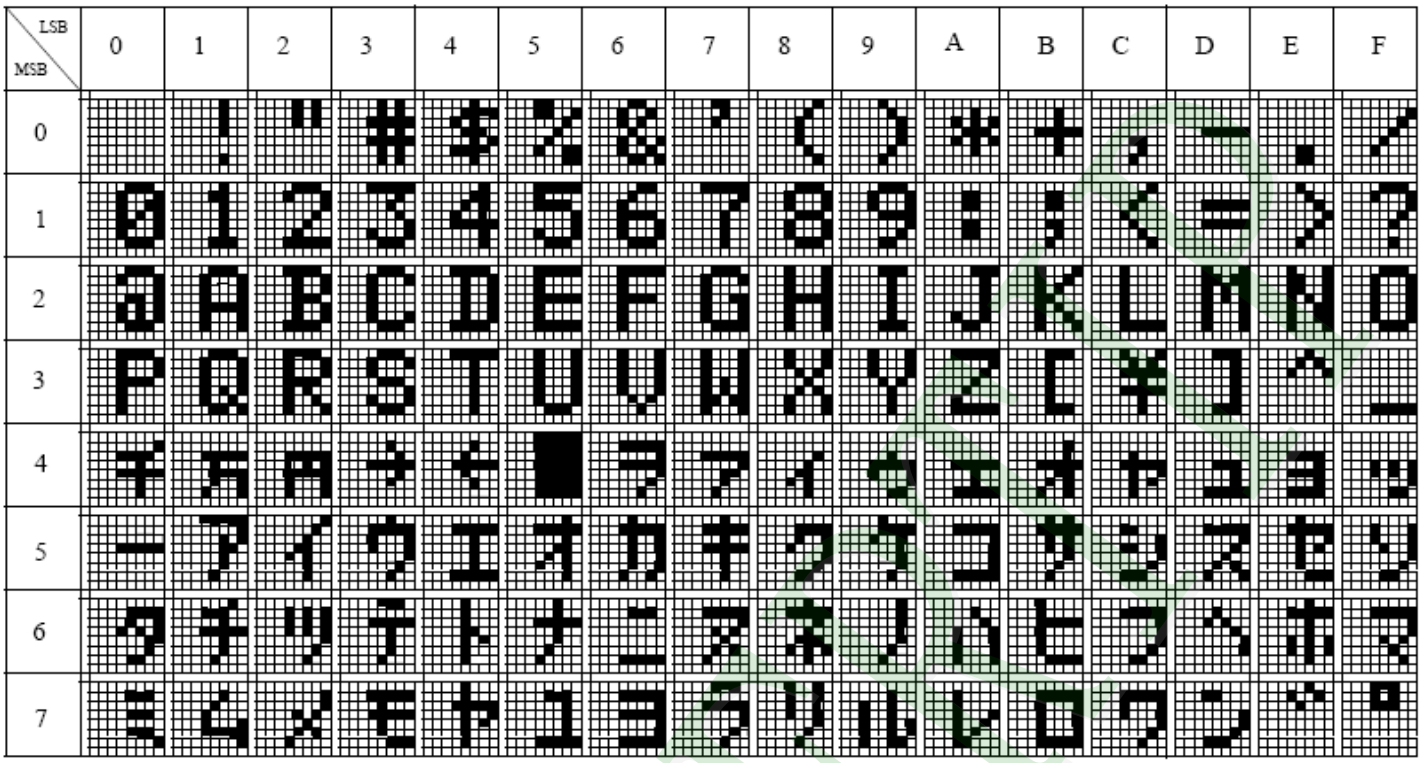
COMMAND	CODE	OPERAND 1	OPERAND 2	FUNCTION
Data READ / WRITE	1100 0000	Data		Data Write and increment Address Pointer
	1100 0001			Data Read and increment Address Pointer
	1100 0010	Data		Data Write and decrement Address Pointer.
	1100 0011			Data Read and decrement Address Pointer
	1100 0100	Data		Data Write and Keep Address Pointer
	1100 0101			Data Read and Keep Address Pointer
Screen Peek	1110 0000			Screen peek
Screen Copy	1110 1000			Screen copy
Bit Set/Reset	1111 0xxxx			Bit Reset
	1111 1xxxx			Bit Set
	1111 x000			Bit 0
	1111 x001			Bit 1
	1111 x010			Bit 2
	1111 x011			Bit 3
	1111 x100			Bit 4
	1111 x101			Bit 5
	1111 x110			Bit 6
	1111 x111			Bit 7

2.5 Character Pattern

The relation between character codes and character pattern (CG ROM TYPE 0101)



The relation between character codes and character pattern (CG ROM TYPE 0201)

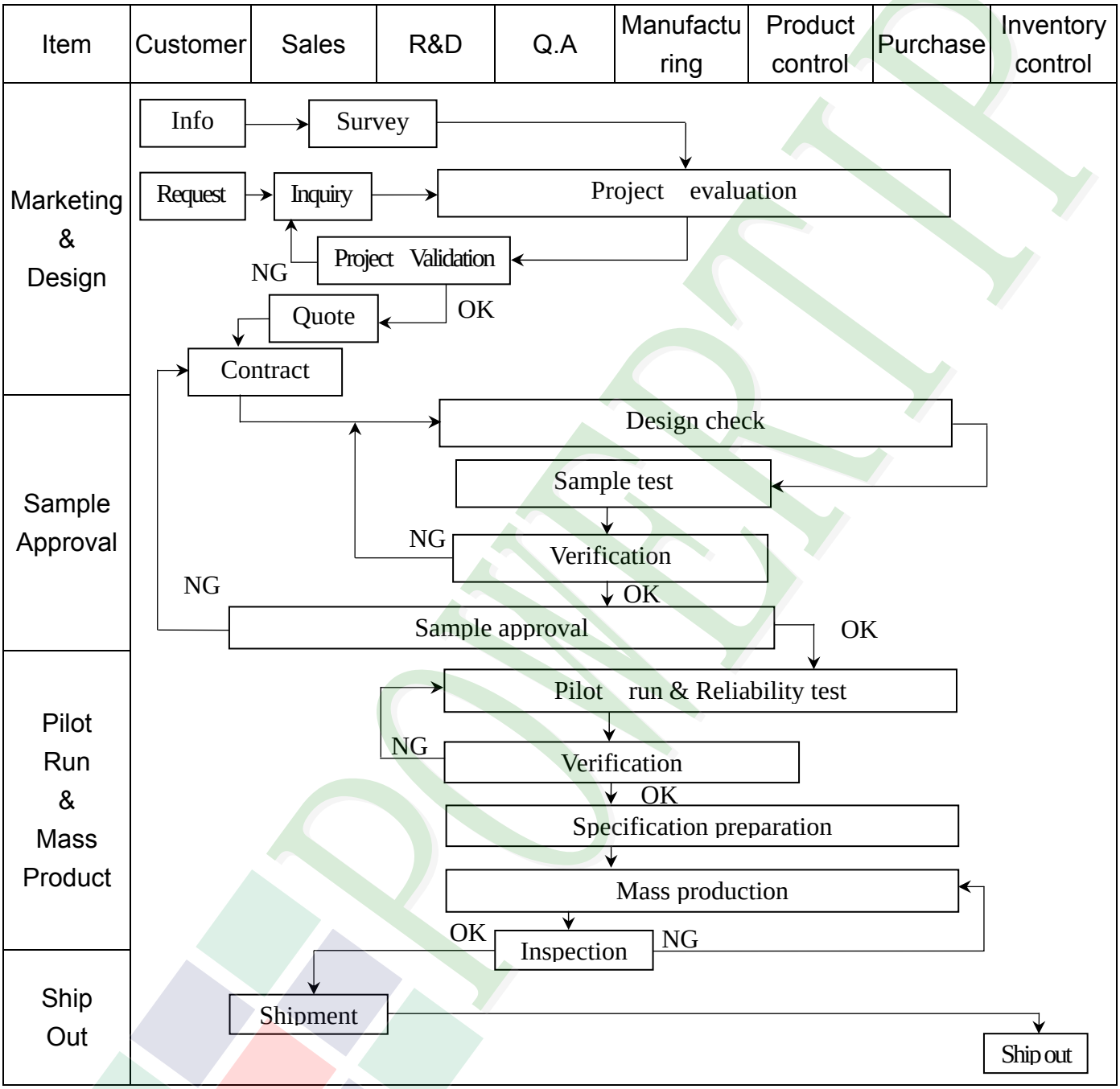


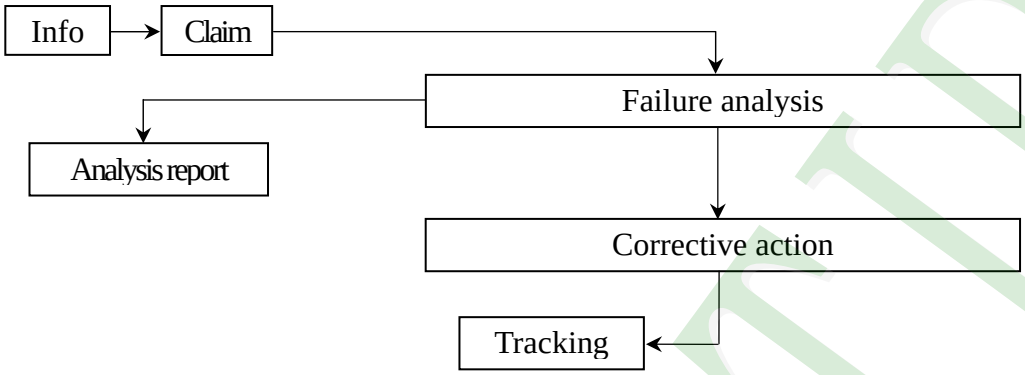
2.6 Jumper

Short: J9(1.3)/J6/JSS/J7/J8
Open: All the jumper unnoted.

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 LCD Module for Monotype and Color STN(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 .

◆Manner of appearance test :

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

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

(3). The test direction is base on about around 45°of vertical line. (Fig. 1)

(4). Definition of area . (Fig. 2)

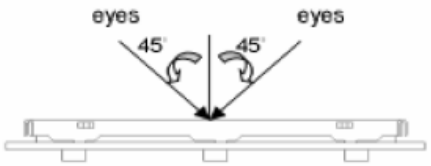


Fig.1

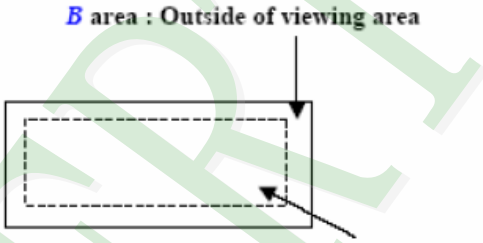


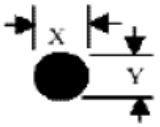
Fig. 2

◆ Specification:

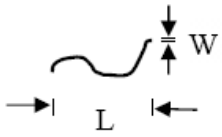
NO	Item	Criterion	Level
01	Product condition	1.1 The part number is inconsistent with work order of Production.	Major
		1.2 Mixed production types.	Major
		1.3 Assembled in inverse direction.	Major
02	Quantity	2.1 The quantity is inconsistent with work order of production.	Major
03	Outline dimension	3.1 Product dimension and structure must conform to Structure diagram.	Major
04	Electrical Testing	4.1 Missing line character and icon.	Major
		4.2 No function or no display.	Major
		4.3 Output data is error.	Major
		4.4 LCD viewing angle defect.	Major
		4.5 Current consumption exceeds product specifications.	Major

◆Specification For Monotype and Color STN：　(Ver. B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>05</td><td>Black or white dot、scratch、contamination

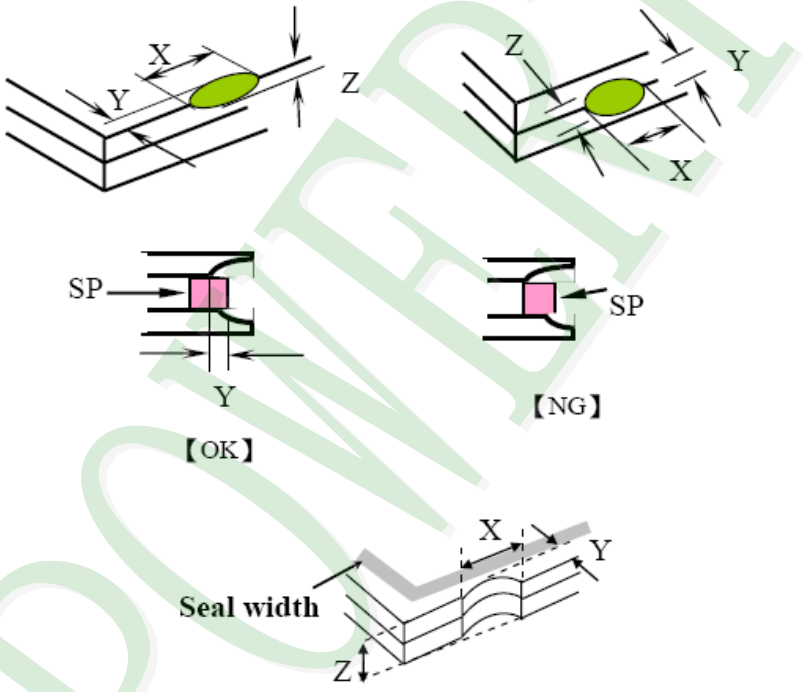
Round type
 

Φ=(x+y)/2

Line type
 
</td><td>5.1 Round type:
5.1.1 display only :
• White and black spots on display ≦ 0.30 mm , no more than 4 white or black spots present.
• Densely spaced : NO more than two spots or lines within 3 mm.

5.1.2 Non-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 ≦ 0.10</td><td>Accept no dense</td><td rowspan="4">Ignore</td></tr>
<tr><td>0.10 ＜ Φ ≦ 0.20</td><td>3</td></tr>
<tr><td>0.20 ＜ Φ ≦ 0.30</td><td>2</td></tr>
<tr><td>Total quantity</td><td>4</td></tr>
</table>
5.1.3 Line type:
<table>
<tr><th colspan="2">Dimension</th><th colspan="2">Acceptance (Q'ty)</th></tr>
<tr><th>Length (L)</th><th>Width (W)</th><th>A area</th><th>B area</th></tr>
<tr><td>---</td><td>W ≦ 0.03</td><td>Accept no dense</td><td rowspan="3">Ignore</td></tr>
<tr><td>L ≦ 3.0</td><td>0.03 ＜ W ≦ 0.05</td><td rowspan="2">4</td></tr>
<tr><td>L ≦ 2.5</td><td>0.05 ＜W ≦ 0.075</td></tr>
<tr><td>---</td><td>W ＞0.075</td><td colspan="2">As round type</td></tr>
</table></td><td>Minor</td></tr>
<tr><td>06</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 ≦ 0.20</td><td>Accept no dense</td><td rowspan="4">Ignore</td></tr>
<tr><td>0.20 ＜Φ ≦ 0.50</td><td>3</td></tr>
<tr><td>0.50 ＜Φ ≦ 1.00</td><td>2</td></tr>
<tr><td>Φ ＞ 1.00</td><td>0</td></tr>
<tr><td>Total quantity</td><td>4</td></tr>
</table></td><td>Minor</td></tr>
</table>

◆Specification For Monotype and Color STN：　(Ver. B01)

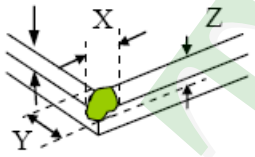
NO	Item	Criterion	Level
07	The crack of glass	Symbols： X : The length of crack　Y : The width of crack. Z : The thickness of crack　W : terminal length t : The thickness of glass　a : LCD side length 7.1 General glass chip： 7.1.1 Chip on panel surface and crack between panels: 	Minor

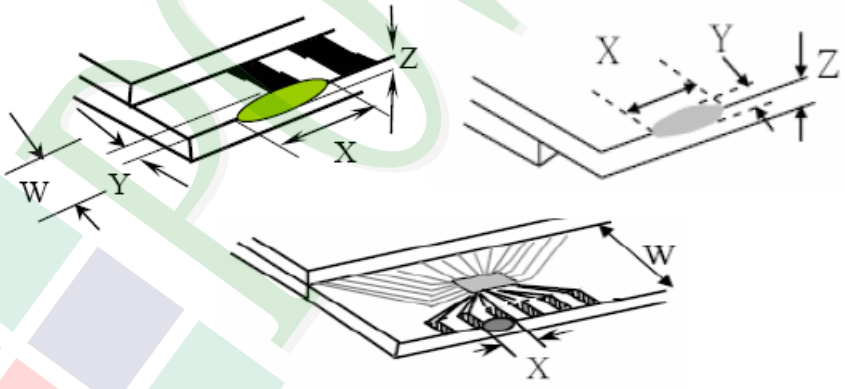
X	Y	Z
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

◆Specification For Monotype and Color STN：　(Ver. B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>07</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

7.1.2 Corner crack：


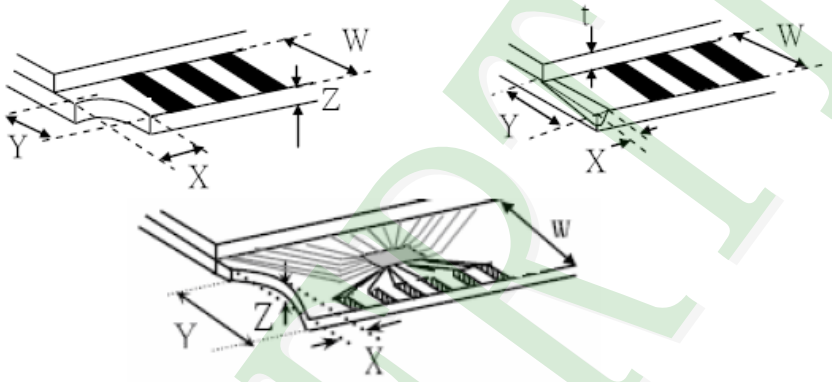
<table>
<tr><th>X</th><th>Y</th><th>Z</th></tr>
<tr><td>≦1/5 a</td><td>Crack can’t enter viewing area</td><td>Z ≦ 1/2 t</td></tr>
<tr><td>≦1/5 a</td><td>Crack can’t exceed the half of SP width.</td><td>1/2 t < Z ≦ 2 t</td></tr>
</table>
7.2 Protrusion over terminal：
7.2.1 Chip on electrode pad：


<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 colspan="3">Neglect</td></tr>
</table>
</td><td>Minor</td></tr>
</table>

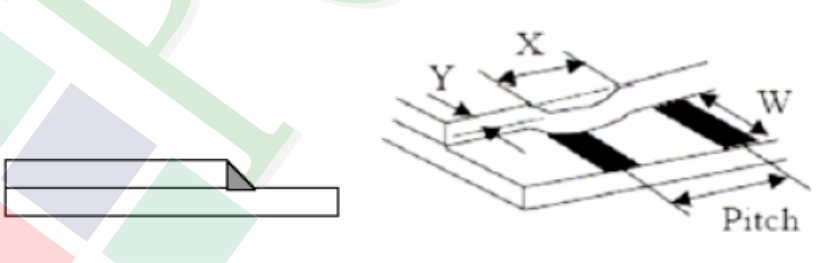
◆Specification For Monotype and Color STN：　(Ver. B01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td>07</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

7.2.2 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.

7.2.3 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 Monotype and Color STN：　(Ver. B01)

NO	Item	Criterion	Level
08	Backlight elements	8. 1 Backlight can't work normally.	Major
		8. 2 Backlight doesn't light or color is wrong.	Major
		8. 3 Illumination source flickers when lit.	Major
09	General appearance	9. 1 Pin type must match type in specification sheet.	Major
		9. 2 No short circuits in components on PCB or FPC.	Major
		9. 3 Product packaging must the same as specified on packaging specification sheet.	Minor
		9. 4 The folding and peeled off in polarizer are not acceptable.	Minor
		9. 5 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	Temperature Cycling Storage Test	-30℃→ +25℃ → +80℃ → +25℃ (30mins) (5mins) (30mins) (5mins) 10 Cycle Surrounding temperature, then storage at normal condition 4hrs.
5	ESD Test	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%)
6	Vibration Test (Packaged)	1. Sine wave 10～55 Hz frequency (1 min/sweep) 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 1time

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.

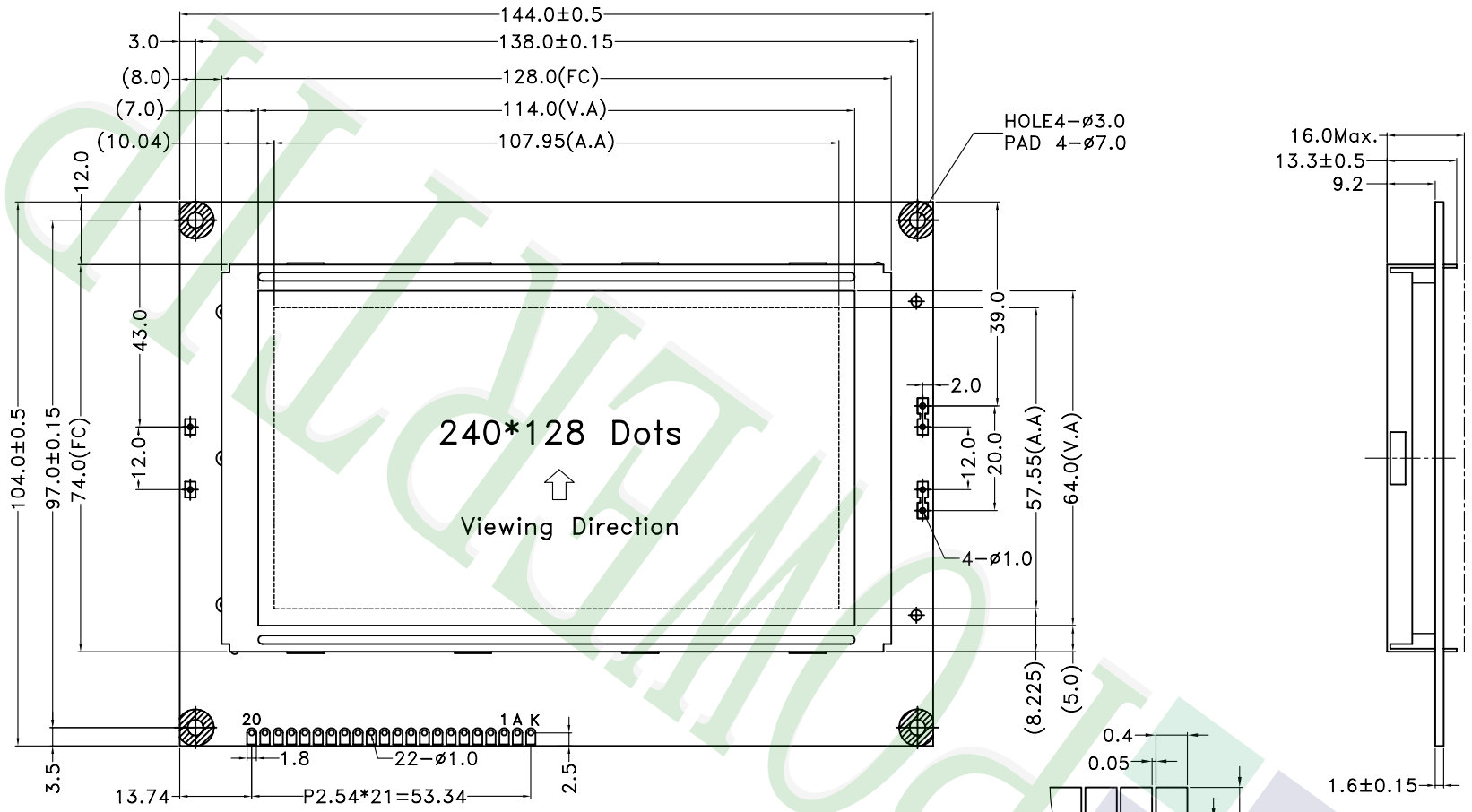
5.4 TERMS OF WARRANTY

5.4.1 Applicable warrant period

The period is within 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: FSTN,TRANSFLECTIVE,POSITIVE
2.Viewing Direction: 6 O'clock
3.Top: −20~70°C Tst:−30~80°C
4.This product conforms ROHS
5.The tolerance unless classified ±0.3mm

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Terry	2010/12/27

PART NO: PG240128WRFAGAHPCQ

DRAWING NAME : JLMD-PG240128WRFAGAHPCQ

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	1:1	Thickness	
		Page	1/1	Quantity	

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

Ver.003	
Documents NO.	JPKG-PG240128WRFAGAHPCQ

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)

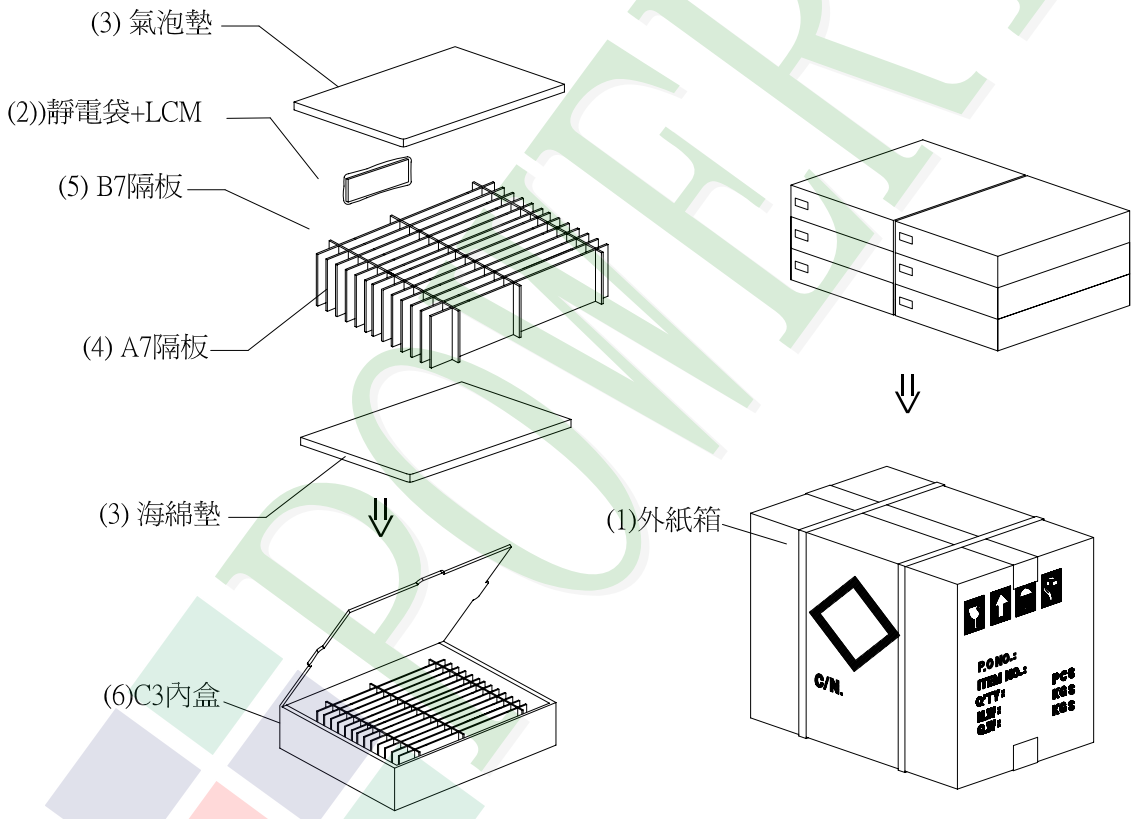
No.	Item	Model	Dimensions (mm)	1Pcs Weight	Quantity	Total Weight
1	成品 (LCM)	PG240128WRFAGAHPCQ	144 X 104X16	0.1705	66	11.253
2	靜電袋(2)	BAG240170ARABA	240X170X0.05	0.0036	66	0.2376
3	氣泡墊(3)	BAG290240BRBBA	240X290X5	0.0029	12	0.0348
4	A7隔板(4)	BX29500010BZBA	295X105X4	0.038	78	2.964
5	B7隔板(5)	BX24500010BZBA	245105X4	0.023	18	0.414
6	C3內盒(6)	BX31025511AABA	310X 255X116	0.203	6	1.218
7	外紙箱(1)	BX52532536CCBA	525 X 325 X 360	1.092	1	1.092
8						
9						

2.一 整箱總重量 (Total LCD Weight in carton) : 17.21 Kg±10%

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

(1)Quantity Of Spacer : A7隔板 X 13 , B7隔板 X 3

(2)Total LCM quantity in carton : quantity per box 11 x No of boxes 6 = 66



特 記 事 項 (REMARK)

1. Label Specifications : 參照產內標準		前、中、后各空一格