POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	PTC
SAMPLE CODE (Ver.)	:	PS12864WRM-004-I02 (VER.0)
MASS PRODUCTION CODE (Ver.)	:	PE12864WRM-004IYEQ (VER.0)
DRAWING NO. (Ver.)	:	PE-03007-081(VER.0)

Customer Approved

Date:

Approved	QC Confirmed	Designer
研發 2006-6-16. 彭文彥	Q.A. DEPT. JUN 16 2006 POWERTIP TECH CORP.	研發 2006-6-15. 劉彥杰

■ Approval For Specifications Only.

* This specification is subject to change without notice.

Please contact Powertip or it's representative before designing your product based on this specification.

☐ Approval For Specifications and Sample.

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RECORDS OF REVISION

Date	Ver.	Description	Page	Design by
2006/06/08	0	Mass Production	---	Smith

Total：26 Page

Contents

Note : For detailed information please refer to IC data sheet : SITRONIX --- ST7565S-G

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Type	128 * 64 Dots
LCD Type	STN Blue , Negative , Transmissive
Driver Condition	LCD Module : 1/65 Duty , 1/9 Bias
Viewing Direction	6 O'clock
Backlight Type	White LED
Weight	33 g
Interface	Serial data input
Controller / Driver IC	SITRONIX --- ST7565S-G
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer web side : http://www.powertip.com.tw/news/LatestNews.asp

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	84.45 (L) * 53.8 (w) * 6.05 (H)(Max)	mm
Viewing Area	70.7 (L) * 38.8 (w)	mm
Active Area	66.52 (L) * 33.24 (w)	mm
Dot Size	0.48 (L) * 0.48 (w)	mm
Dot Pitch	0.52 (L) * 0.52 (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	+5.0	V
LCD Driver Supply Voltage	V5,VOUT	-	-18	+0.3	V
Input Voltage	V_{IN}	-	-0.3	V_{DD} + 0.3	V
Operating Temperature	T_{OP}	-	-20	+70	°C
Storage Temperature	T_{ST}	-	-30	+80	°C
Storage Humidity	H_D	Ta < 40 °C	20	90	%RH

1.4 DC Electrical Characteristics

V_{DD} = 3.3 V ± 0.3 , V_{SS} = 0 V , Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Logic Supply Voltage	V_{DD}	-	3.0	3.3	3.6	V
"H" Input Voltage	V_{IH}	-	0.8V_{DD}	-	V_{DD}	V
"L" Input Voltage	V_{IL}	-	V_{SS}	-	0.2V_{DD}	V
"H" Output Voltage	V_{OH}	-	0.8V_{DD}	-	V_{DD}	V
"L" Output Voltage	V_{OL}	-	V_{SS}	-	0.2V_{DD}	V
Supply Current	I_{DD}	V_{DD} = 3.3 V	-	0.2	1.0	mA
LCM Driver Voltage	V_{OP}	V_{DD} -V_5 (-20°C)	9.9	10.1	10.3	V
		V_{DD} –V_5 (+25°C)	9.8	10.0	10.2	
		V_{DD} -V_5 (+70°C)	9.0	9.2	9.4	

1.5 Optical Characteristics

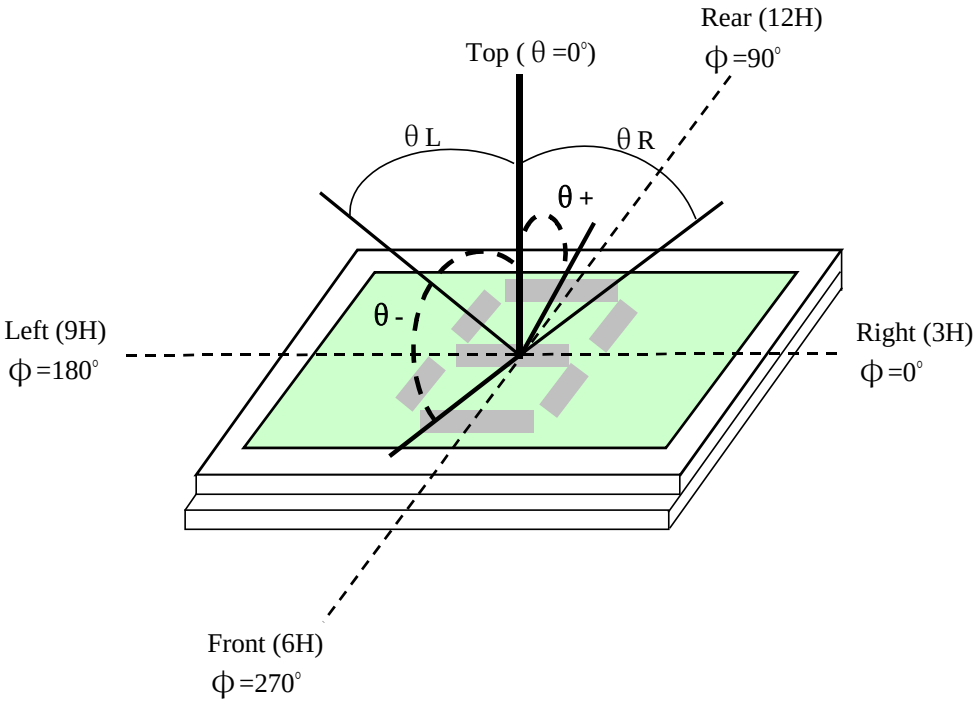
LCD Panel: 1/65 Duty, 1/9 Bias, V_{LCD} = 10.0 V, Ta = 25°C

Item	Symbol	Conditions	Min.	Typ.	Max.	Reference
View Angle	θ	C≥2.0 , ∅ = 270°	-40°	-	+40°	Note 1
Contrast Ratio	CR	θ = -5° , ∅ = 270°	2	6	-	Note 3
Response Time(rise)	Tr	θ = -5° , ∅ = 270°	-	100 ms	150 ms	Note 2
Response Time(fall)	Tf	θ = -5° , ∅ = 270°	-	100 ms	150 ms	

Note 1.

Optical characteristics-2

Viewing angle

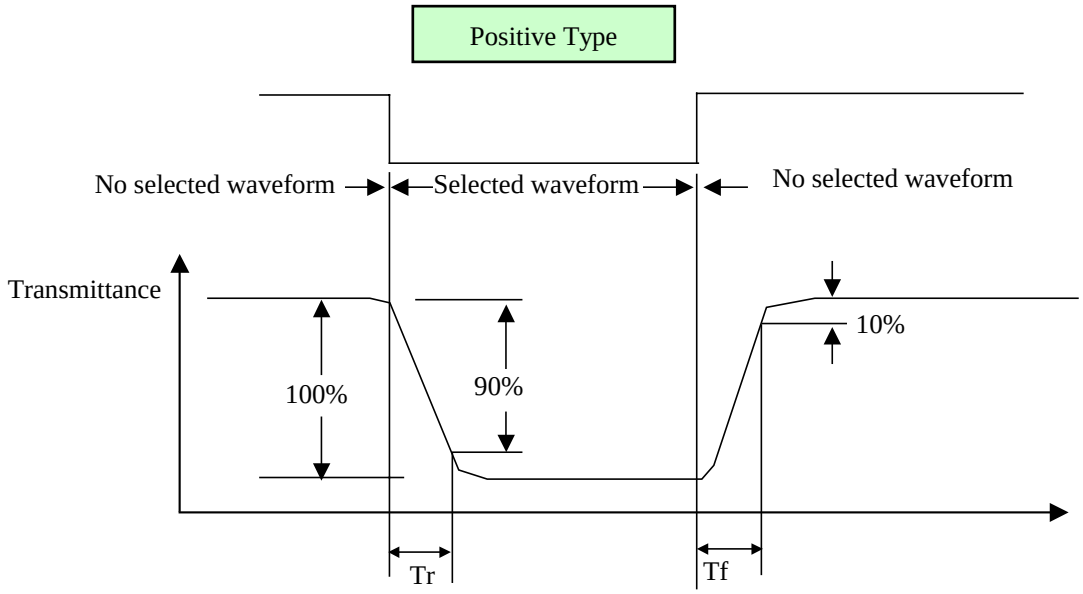


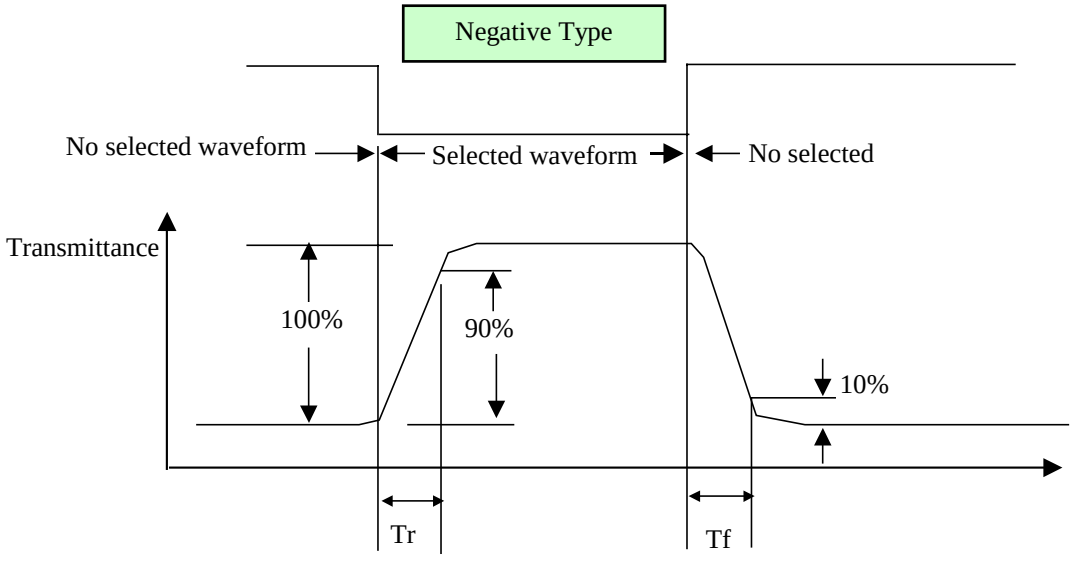
Viewing angle

Note 2.

Optical characteristics-3

Fig.2 Definition of response time





Electrical characteristics-2

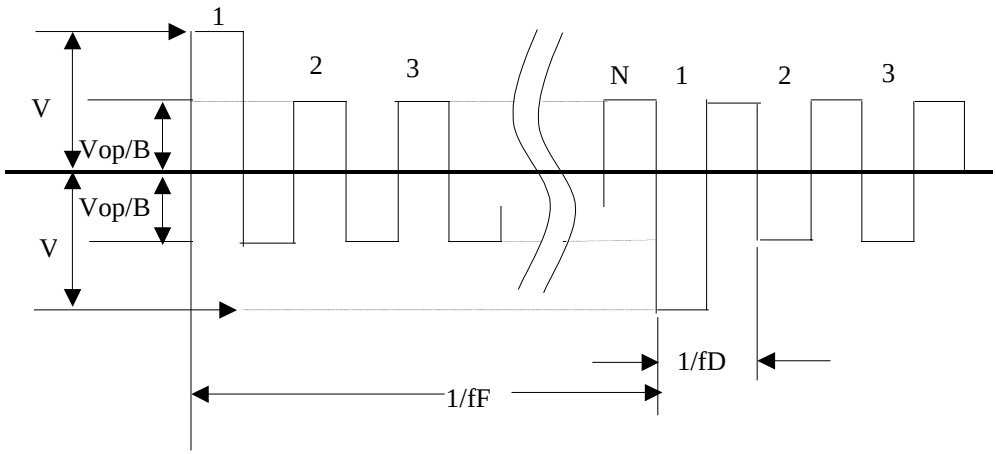
※2 Drive waveform

Vop: Drive voltage fF: Frame frequency

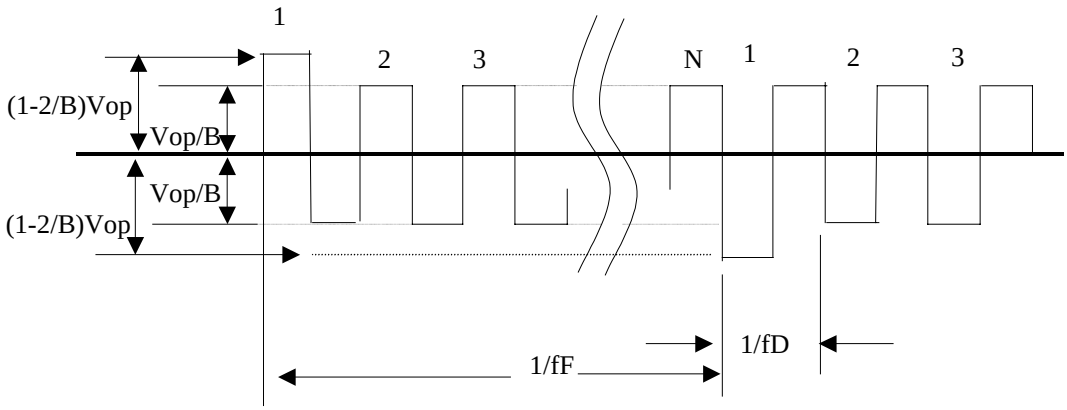
1/B: Bias fD: Drive frequency

N: Duty

(1) Selected waveform



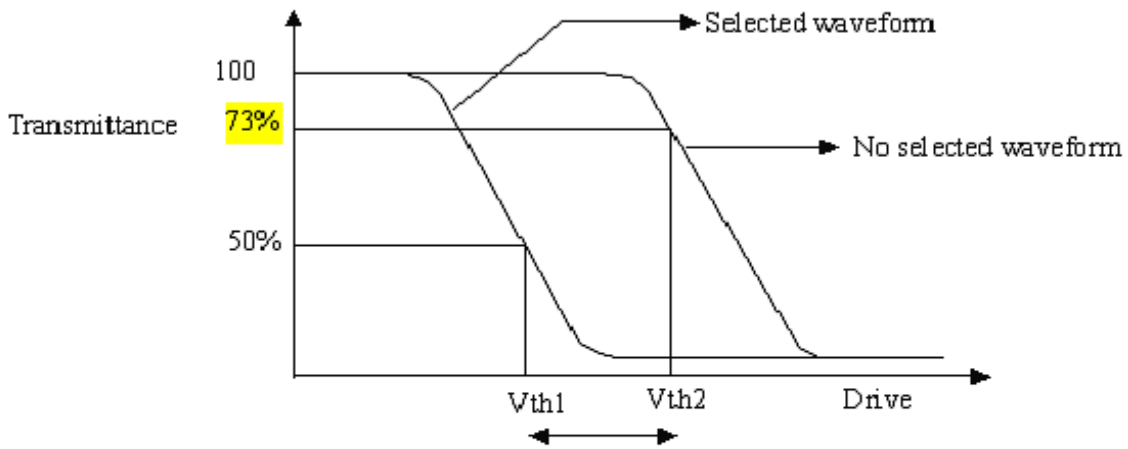
(2) Non- Selected waveform



Note:

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

Note 3. : Definition of Vth

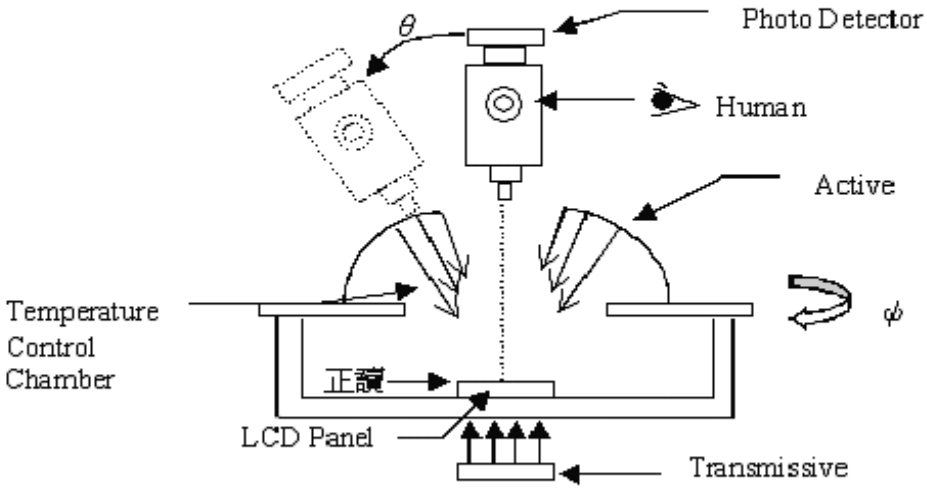


Active voltage range

	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

LCD Module with LED Backlight

Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
Forward Current	IF	Ta =25℃	-	50	mA
Reverse Voltage	VR	Ta =25℃	-	5	V
Power Dissipation	PO	Ta =25℃	-	150	mW

Electrical / Optical Characteristics

Ta =25℃

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF= 40 mA	4.7	5.0	5.3	V
Reverse Current	IR	VR = 3 V	-	-	0.1	mA
Average Brightness (with LCD)	IV	IF= 40 mA	35	55	-	cd/m^2
Uniformity (With LCD) *1	△B		70	-	-	%
CIE Color Coordinate (With LCD)	X	IF= 40 mA	0.32	0.35	0.38	-
	Y		0.32	0.35	0.38	
Color	White					

*1 △B=B(min) / B(max)

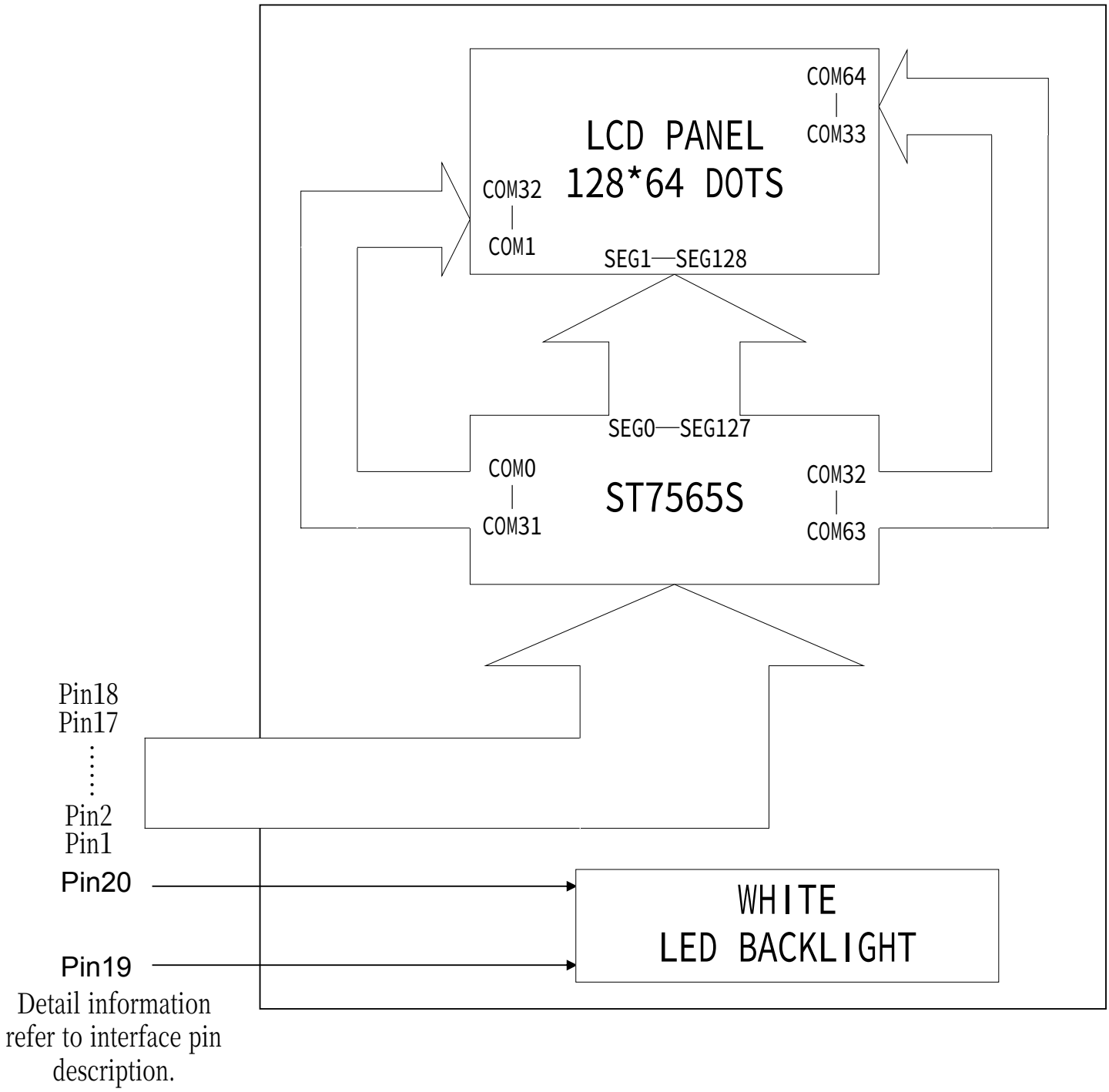
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



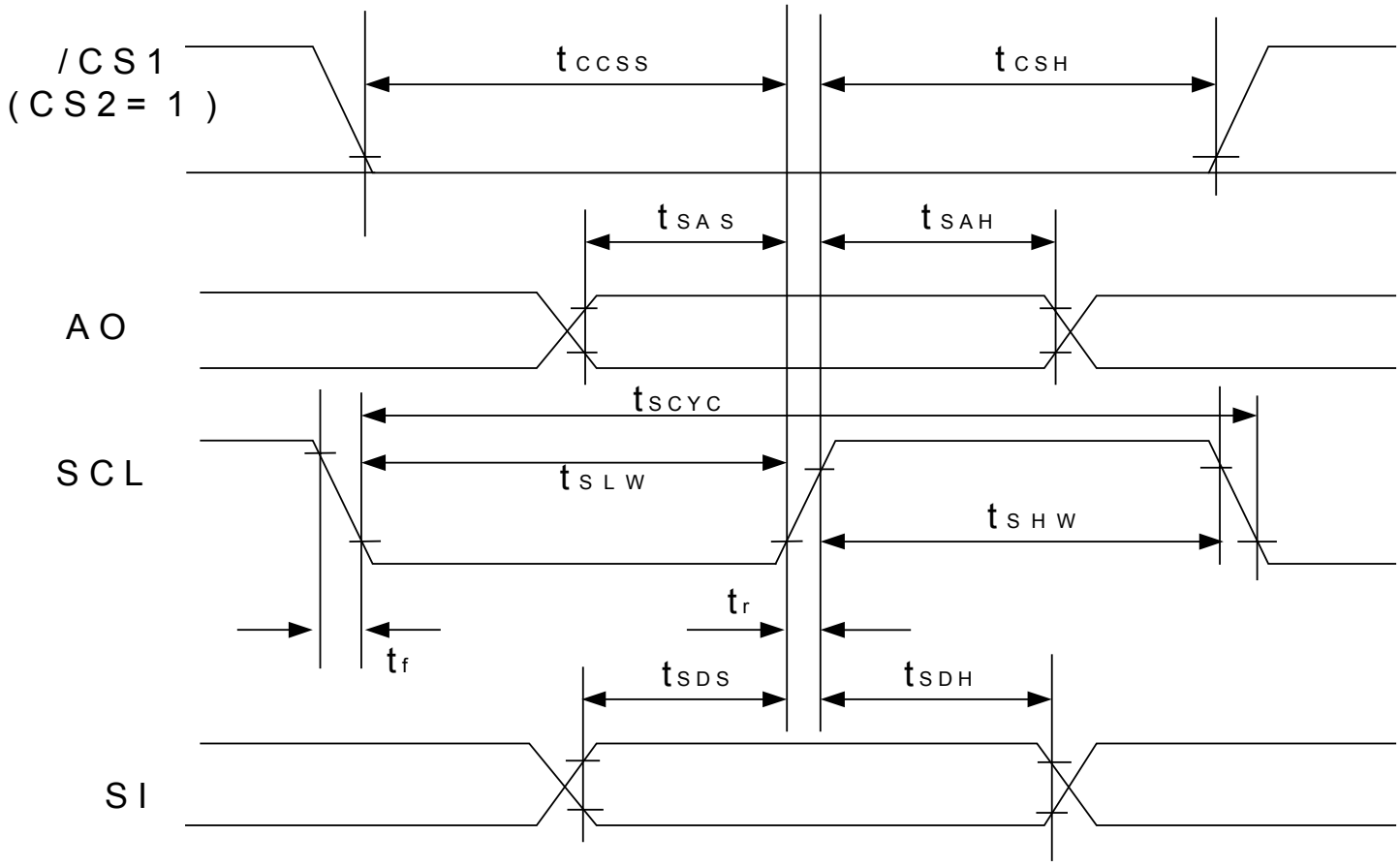
Detail information refer to interface pin description.

2.2 Interface Pin Description

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Function</th></tr>
<tr><td>1</td><td>/CS1</td><td>Chip select, Active “L”.</td></tr>
<tr><td>2</td><td>/RES</td><td>Reset input, Active “L”.</td></tr>
<tr><td>3</td><td>A0</td><td>A0 = “H”：indicates D0 to D7 are display data.
A0 = “L”：indicates D0 to D7 are control data.</td></tr>
<tr><td>4</td><td>SCL</td><td>The serial clock input.</td></tr>
<tr><td>5</td><td>SI</td><td>Serial data input.</td></tr>
<tr><td>6</td><td>VDD</td><td>Power supply for system.(V_{DD} = 3.3V)</td></tr>
<tr><td>7</td><td>VSS</td><td>Ground for logic circuit.(V_{SS} = 0V)</td></tr>
<tr><td>8</td><td>VOUT</td><td>DC / DC voltage converter. Connect a capacitor between this terminal and VSS.</td></tr>
<tr><td>9</td><td>CAP3－</td><td>DC / DC voltage converter. Connect a capacitor between this terminal and the CAP1＋ terminal.</td></tr>
<tr><td>10</td><td>CAP1＋</td><td>DC / DC voltage converter. Connect a capacitor between this terminal and the CAP1－ terminal.</td></tr>
<tr><td>11</td><td>CAP1－</td><td>DC / DC voltage converter. Connect a capacitor between this terminal and the CAP1＋ terminal.</td></tr>
<tr><td>12</td><td>CAP2－</td><td>DC / DC voltage converter. Connect a capacitor between this terminal and the CAP2＋ terminal.</td></tr>
<tr><td>13</td><td>CAP2＋</td><td>DC / DC voltage converter. Connect a capacitor between this terminal and the CAP2－ terminal.</td></tr>
<tr><td>14</td><td>V5</td><td rowspan="5">When the power supply turns ON, the internal power supply circuits produce the V1 to V4 voltage shown below. The voltage settings are selected using the LCD bias set command.
<table>
<tr><th></th><th>1/65 Duty</th><th>1/49 Duty</th><th>1/33 Duty</th><th>1/55 Duty</th><th>1/53 Duty</th></tr>
<tr><td>V1</td><td>1/9*V5,1/7*V5</td><td>1/8*V5,1/6*V5</td><td>1/6*V5,1/5*V5</td><td>1/8*V5,1/6*V5</td><td>1/8*V5,1/6*V5</td></tr>
<tr><td>V2</td><td>2/9*V5,2/7*V5</td><td>2/8*V5,2/6*V5</td><td>2/6*V5,2/5*V5</td><td>2/8*V5,2/6*V5</td><td>2/8*V5,2/6*V5</td></tr>
<tr><td>V3</td><td>7/9*V5,5/7*V5</td><td>6/8*V5,4/6*V5</td><td>4/6*V5,3/5*V5</td><td>6/8*V5,4/6*V5</td><td>6/8*V5,4/6*V5</td></tr>
<tr><td>V4</td><td>8/9*V5,6/7*V5</td><td>7/8*V5,5/6*V5</td><td>5/6*V5,4/5*V5</td><td>7/8*V5,5/6*V5</td><td>7/8*V5,5/6*V5</td></tr>
</table></td></tr>
<tr><td>15</td><td>V4</td></tr>
<tr><td>16</td><td>V3</td></tr>
<tr><td>17</td><td>V2</td></tr>
<tr><td>18</td><td>V1</td></tr>
<tr><td>19</td><td>A</td><td>Power supply for LED Backlight anode input(+5V).</td></tr>
<tr><td>20</td><td>K</td><td>Power supply for LED Backlight cathode input.</td></tr>
</table>

2.3 Timing Characteristics

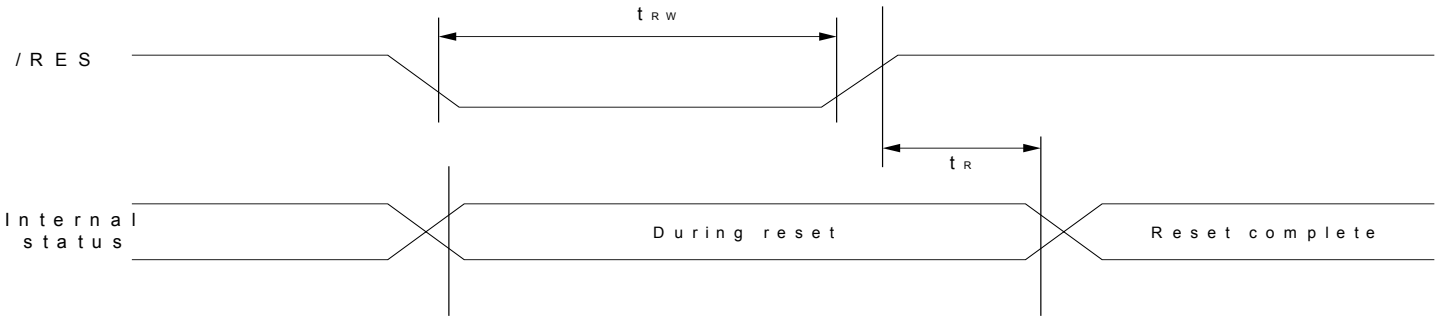
Serial Interface



V_{DD} = 3.3V , Ta = +25 ºC

Item	Signal	Symbol	Condition	Rating		Units
				Min	Max	
Serial Clock Period	SCL	T_{SCYC}	-	50	-	ns
SCL"H" pulse with		T_{SHW}	-	25	-	
SCL"L" pulse with		T_{SLW}	-	25	-	
Address setup time	A0	T_{SAS}	-	20	-	
Address hold time		T_{SAH}	-	10	-	
Data setup time	SI	T_{SDS}	-	20	-	
Data hold time		T_{SDH}	-	10	-	
CS-SCL time	CS	T_{CSS}	-	20	-	
CS-SCL time		T_{CSH}	-	40	-	

Reset Timing



V_{DD} = 3.3V , Ta = -40 to+85 ºC

Item	Signal	Symbol	Condition	Rating			Units
				Min	Typ	Max	
Reset time	-	t_R	-	-	-	0.5	μs
Reset “L” pulse width	/RES	t_{RW}		0.5	-	-	μs

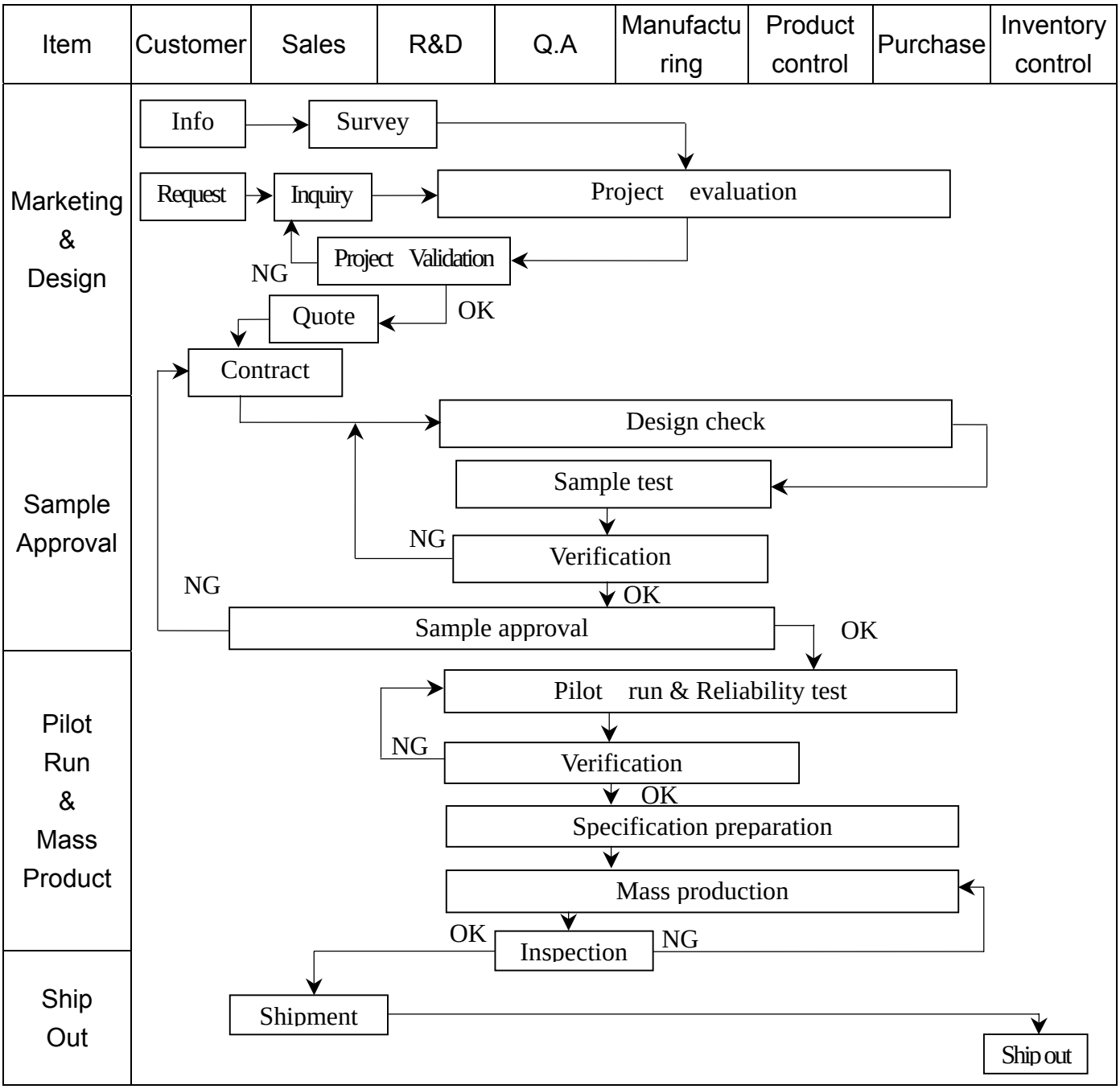
2.4 Display Command

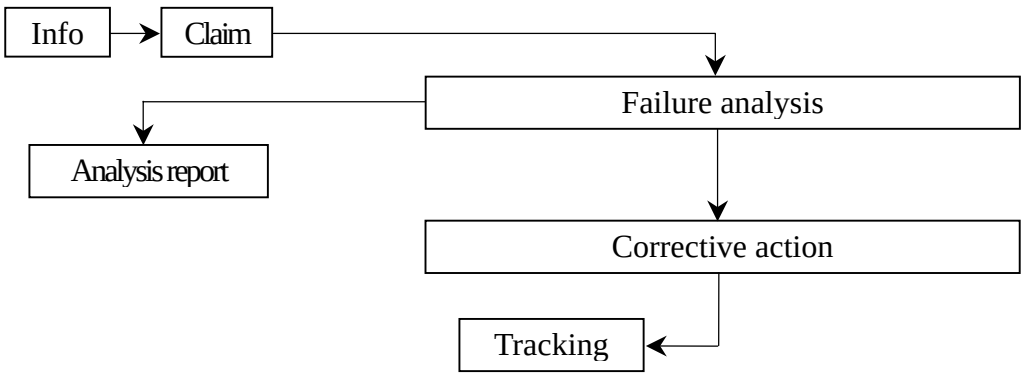
Instruction	A0	/WR	D7	D6	D5	D4	D3	D2	D1	D0	Description
Display ON/OFF	0	0	1	0	1	0	1	1	1	0/1	Turn on/off LCD panel.
Display start line set	0	0	0	1	Display start address						Specify DDRAM line for COM0
Page address set	0	0	1	0	1	1	Page address				Set page address
Set column address MSB	0	0	0	0	0	1	Y7	Y6	Y5	Y4	Set column address MSB
Set column address LSB	0	0	0	0	0	0	Y3	Y2	Y1	Y0	Set column address LSB
Read status	0	1	BUSY	ADC	ON/OFF	RESET	0	0	0	0	Read the internal status
Write display data	1	0	Write data								Write data into DDRAM
Read display data	1	1	Read data								Read data from DDRAM
ADC select	0	0	1	0	1	0	0	0	0	0/1	Select SEG output directional
Display normal/reverse	0	0	1	0	1	0	0	1	1	0/1	Select normal/reverse display
Display all points ON/OFF	0	0	1	0	1	0	0	1	0	0/1	Select normal/entire display ON
LCD bias select	0	0	1	0	1	0	0	0	1	0/1	Select LCD bias
Read/modify/write	0	0	1	1	1	0	0	0	0	0	Column address Increment
End	0	0	1	1	1	0	1	1	1	0	Clear read/modify/write
Reset	0	0	1	1	1	0	0	0	1	0	Initialize the internal functions
Common output Mode select	0	0	1	1	0	0	0/1	x	x	x	Select COM output scan direction
Power control	0	0	0	0	1	0	1	0/1	0/1	0/1	Control power circuit operation
V5 voltage regulator internal resistor ratio set	0	0	0	0	1	0	0	Resistor ratio			Select internal resistance ratio of the regulator resistor

Instruction	RS	RW	D7	D6	D5	D4	D3	D2	D1	D0	Description
Electronic volume mode set	0	0	1	0	0	0	0	0	0	1	Set reference voltage mode
Electronic volume regulator set	0	0	0	0	Electronic volume value						Set reference voltage register
Static indicator ON/OFF	0	0	1	0	1	0	1	1	0	0/1	Set static indicator mode
Static indicator register set	0	0	0	0	0	0	0	0	Mode		Set the flashing mode
Boosting ratio set	0	0	1	1	1	1	1	0	0	0	Select boosting ratio
	0	0	0	0	0	0	0	0	Step-up value		
Power save	-	-	-	-	-	-	-	-	-	-	Display OFF and Display all point ON compound command
NOP	0	0	1	1	1	0	0	0	1	1	N0n operation command

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. 01).

◆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)

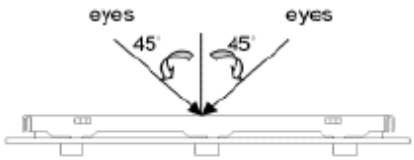


Fig.1

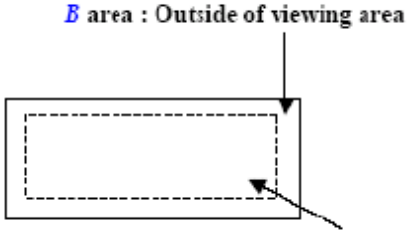


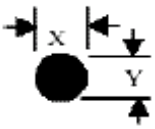
Fig. 2

◆ Specification:

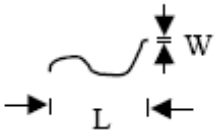
NO	Item	Criterion	level
01	Product condition	1.1 The part number is inconsistent with work order of Production.	Major
		1.2 Mixed production types.	Major
		1.3 Assembled in inverse direction.	Major
02	Quantity	2.1 The quantity is inconsistent with work order of production.	Major
03	Outline dimension	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.01)

<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

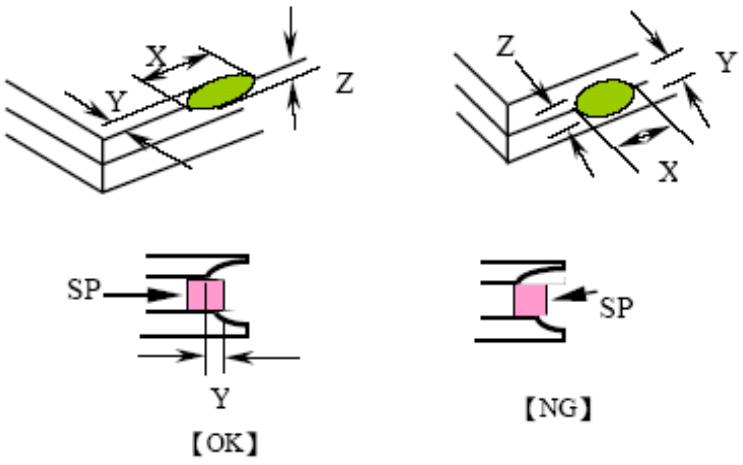
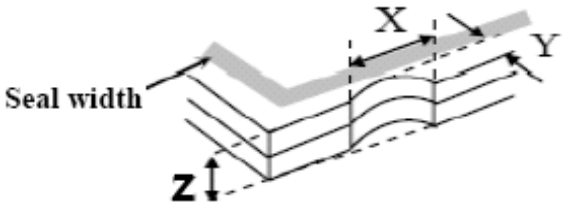
Round type
 

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>Dimension (diameter : Φ)</th><th>Acceptance (Q'ty)</th></tr>
<tr><td>Φ ≦0.10</td><td>Accept no dense</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>Don't count</td></tr>
<tr><td>L ≦ 3.0</td><td>0.03 ＜ W ≦ 0.05</td><td rowspan="2">4</td><td>Don't count</td></tr>
<tr><td>L ≦ 2.5</td><td>0.05 ＜ W ≦ 0.075</td><td>Don't count</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>Don't count</td></tr>
<tr><td>0.20 ＜Φ ≦ 0.50</td><td>3</td><td>Don't count</td></tr>
<tr><td>0.50 ＜Φ ≦ 1.00</td><td>2</td><td>Don't count</td></tr>
<tr><td>Φ ＞ 1.00</td><td>0</td><td>Don't count</td></tr>
<tr><td>Total quantity</td><td>4</td><td>Don't count</td></tr>
</table></td><td>Minor</td></tr>
</table>

◆Specification For Monotype and Color STN：　(Ver. 01)

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　D : 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

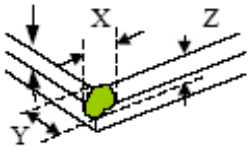
X	Y	Z
≦ a	Crack can't enter viewing area	≦1/2 t
≦ a	Crack can't exceed the half of SP width.	1/2 t < Z ≦2 t

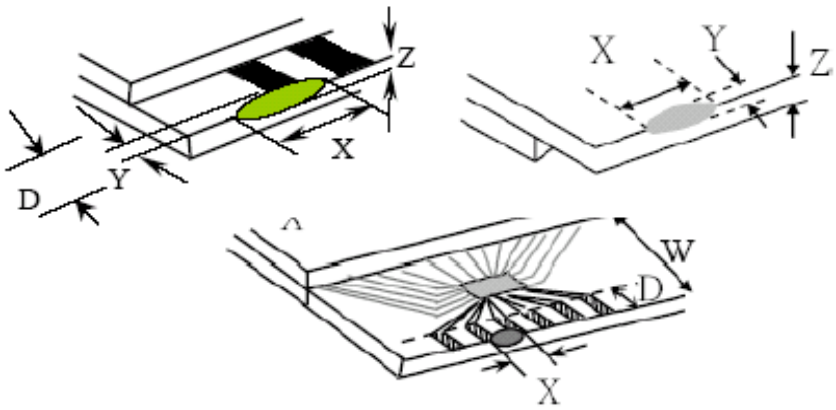
◆Specification For Monotype and Color STN：

(Ver.01)

<table>
<tr><th>NO</th><th>Item</th><th>Criterion</th><th>Level</th></tr>
<tr><td rowspan="2">07</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　　D : terminal length
t : The thickness of glass　　a : LCD side length

7.1.2 Corner crack：
 

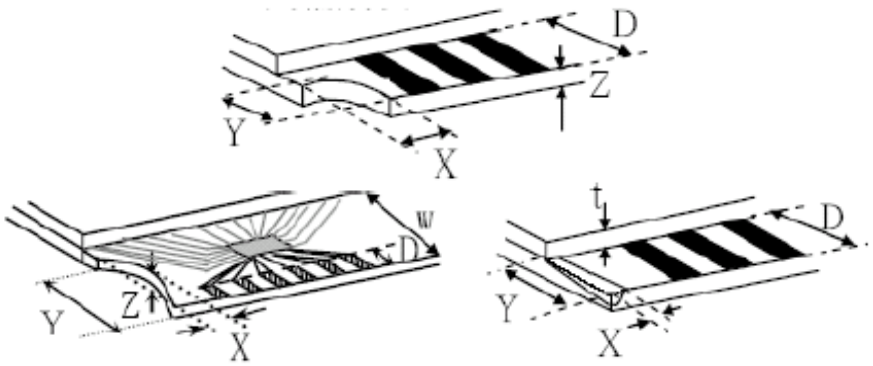
<table><tr><th>X</th><th>Y</th><th>Z</th></tr><tr><td>≦1/5 a</td><td>Crack can’t enter viewing area</td><td>Z ≦ 1/2 t</td></tr><tr><td>≦1/5 a</td><td>Crack can’t exceed the half of SP width.</td><td>1/2 t < Z ≦ 2 t</td></tr></table></td><td rowspan="2">Minor</td></tr>
<tr><td>7.2 Protrusion over terminal：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

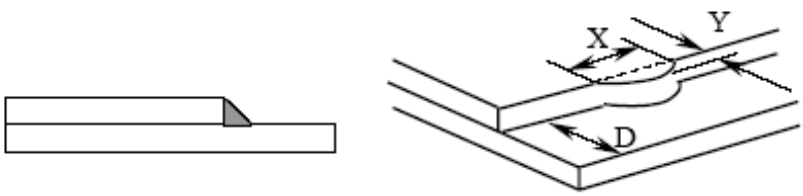
<table><tr><th></th><th>X</th><th>Y</th><th>Z</th></tr><tr><td>Front</td><td>≦ a</td><td>≦ 1/2 D</td><td>≦ t</td></tr><tr><td>Back</td><td colspan="3">Neglect</td></tr></table></td></tr>
</table>

◆Specification For Monotype and Color STN：　(Ver.01)

<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　　D : 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>≦D</td><td>≦t</td></tr>
</table>
7.2.3 Glass remain：


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

◆Specification For Monotype and Color STN：　(Ver. 01)

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.01)

<table>
<tr><th>NO.</th><th>TEST ITEM</th><th colspan="2">TEST CONDITION</th></tr>
<tr><td>1</td><td>High Temperature Storage Test</td><td colspan="2">Keep in +80 ±2℃ 96 hrs
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>2</td><td>Low Temperature Storage Test</td><td colspan="2">Keep in -30 ±2℃ 96 hrs
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>3</td><td>High Temperature / High Humidity Storage Test</td><td colspan="2">Keep in +60℃ / 90% R.H duration for 96 hrs
Surrounding temperature, then storage at normal condition 4hrs.
(Excluding the polarizer)</td></tr>
<tr><td rowspan="2">4</td><td rowspan="2">ESD Test</td><td>Air Discharge:
Apply 6 KV with 5 times
Discharge for each polarity +/-</td><td>Contact Discharge:
Apply 250V with 5 times
discharge for each polarity +/-</td></tr>
<tr><td colspan="2">1. Temperature ambinace: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%)</td></tr>
<tr><td>5</td><td>Temperature Cycling Storage Test</td><td colspan="2">-20℃ → +25℃ → +70℃ → +25℃
(30mins) (5mins) (30mins) (5mins)
10 Cycle
Surrounding temperature, then storage at normal condition 4hrs.</td></tr>
<tr><td>6</td><td>Vibration Test (Packaged)</td><td colspan="2">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>7</td><td>Drop Test (Packaged)</td><td colspan="2"><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 etch 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 280 ± 10°C 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°C ± 5°C 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.

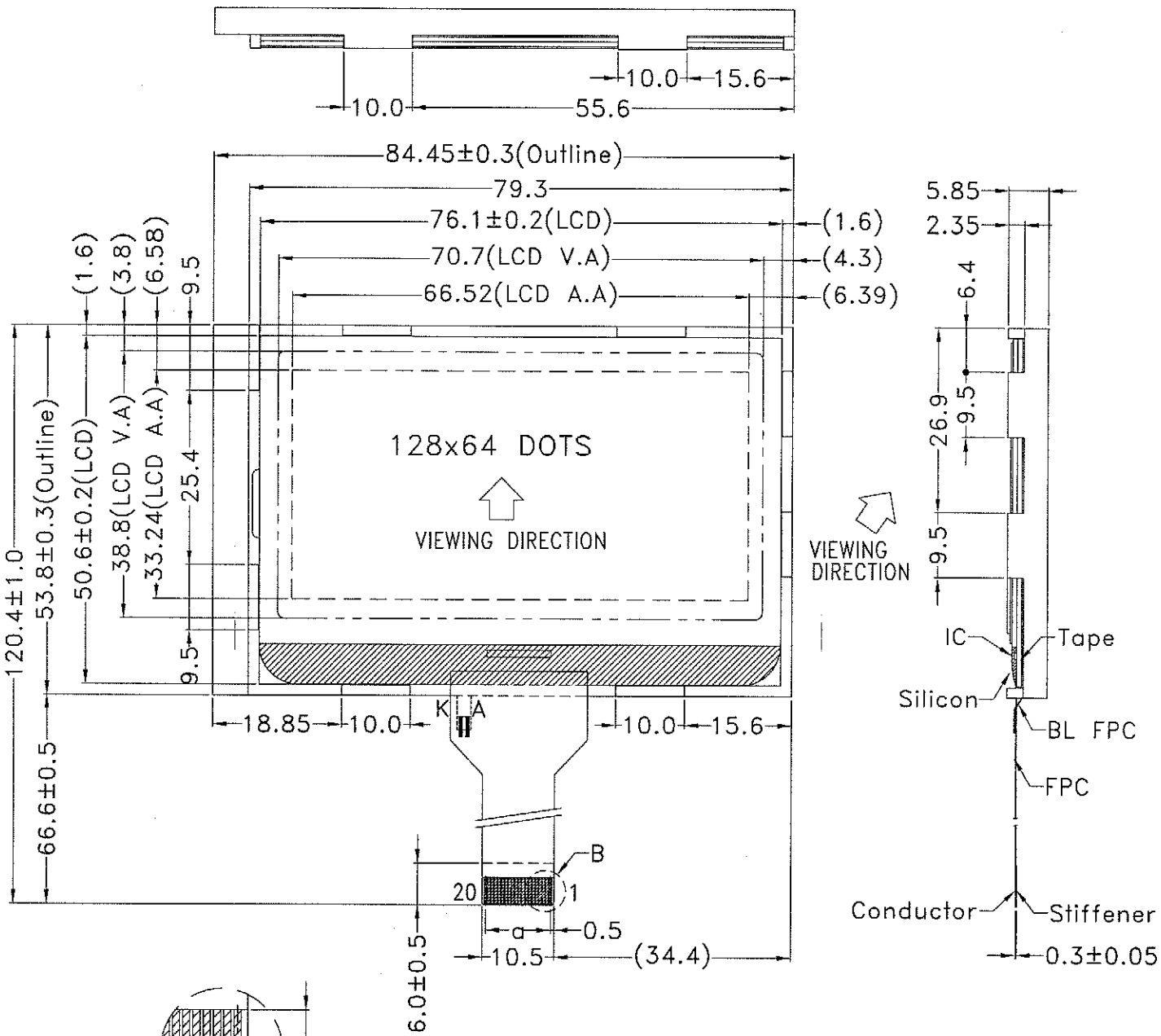
5.4 TERMS OF WARRANTY

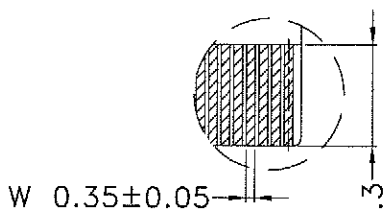
5.4.1 Applicable warrant period

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

5.4.2 Unaccepted responsibility

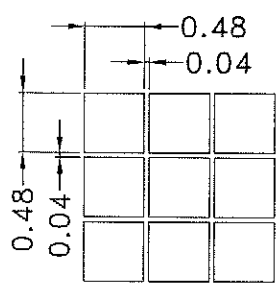
This product has been manufactured to your company’s specification as a part for use in your company’s general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment, we cannot take responsibility if the product 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.





DETAIL B
SCALE:3/1

NOTES:
1.LCD TYPE: STN (BLUE)
2.LCD DISPLAY:NEGATIVE/ TRANSMISSIVE
3.VIEW DIRECTION: 6 O'CLOCK
4.Top: −20~70°C Tst:−30~80°C
5.The tolerance unless classified ±0.2mm
6.IC NO.: ST7565S-G
7.a=P0.5x19=9.5±0.05



DOTS DETAIL
SCALE:15/1

REV	DESCRIPTION	DATE

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

	SCALE:1/0.9	UNIT:mm	PAGE:1/1	APPROVED	CHECKER	DRAWN
圖面名稱	PE12864WRM-004IYEQ			研發 2006-6-16 彭文彥	研發 2006-6-15 李美倫	研發 2006-6-15 賴貌信
圖面編號	PE-03007-081	EDI	0			

LCM Model 版次Ver.0	PE12864WRM-004IYEQ

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

Approve	Check	Contact
研發 2005-6-15	研發 2005-6-15 李美倫	研發 2005-6-15 賴銘信

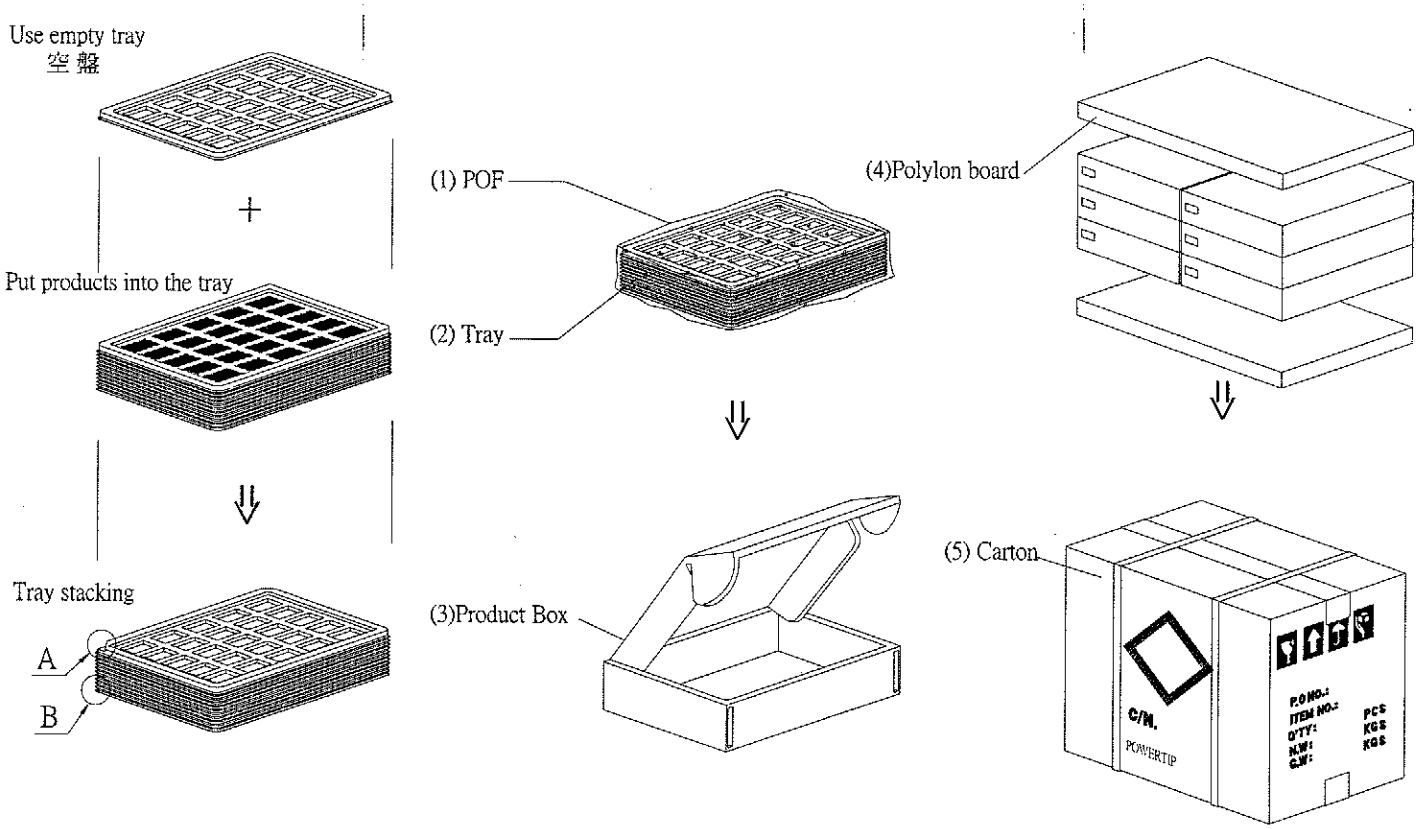
1.包裝材料規格表 (Packaging Material) : (per carton)

No.	Item	Model	Dimensions (mm)	Quantity
1	成品 (LCM)	PE12864WRM-004IYEQ	84.45 X 53.8	216
2	多層薄膜(1)POF	OTFILM0BA03ABA	19"X350X0.015	6
3	TRAY 盤 (2)	TYPE12806404BA	352 X 260 X 12.8	42
4	內盒(3)Product Box	BX36627063ABBA	393 X 274 X 68	6
5	保力龍板(4)Polylon board	OTPLB00PL08ABA	550 X 393 X 20	2
6	外紙箱(5)Carton	BX57041027CCBA	570 X 410 X 265	1
7				
8				
9				

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

(1)LCM quantity per box : no per tray 6 x no per tray 6 = 36

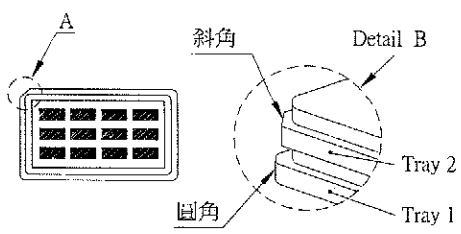
(2)Total LCM quantity in carton : quantity per box 36 x no of boxes 6 = 216



特 記 事 項 (REMARK)

1. Label Specifications :

MODEL:
LOT NO:
QUANTITY:
CHECK:



Rotate tray 180 degrees and place on top of stack. Check the tray stack using Fig. B.

TRAY盤相疊時,需旋轉180度,請詳見B視圖

3.It's also suitable to Panel
(可適用於單品包裝)

Tray number:PE12864-004-02

POWERTIP TECH. CORP.