POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER : CKR 001

SAMPLE CODE (Ver.) : PS12864LRU-022-H01 (Ver . 0)

(This Code will be changed while mass production)

MASS PRODUCTION CODE (Ver.) :

Customer Approved

Date:

Approved	QC Confirmed	Designer
研發 94.3.24 張慶源	Q.A. DEPT. MAR 2 4. 2005 POWERTIP TECH. CORP. 辭惠如	研發 2005-3-18. 鄭世宏

☐ 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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POWERTIP MAR 25. 2005 PDESSUE

RECORDS OF REVISION

Date	Ver.	Description	Page	Design by
2005/03/18	0	New Sample	-	Red

Total : 25 Page

POWERTIP
MAR 25, 2005
RD.ISSUE

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 (Y/G) , Positive , Transflective
Driver Condition	LCD Module : 1/65 Duty , 1/9 Bias
Viewing Direction	6 O'clock
Backlight Type	LED B/L
Weight	27.3 g
Interface	8 bits parallel data input
Driver IC	ST7565S-G

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	93.7 (L) * 53.0 (w) * 4.7 (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	V_5 , V_{OUT}	-	-18.0	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 , 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)	10.2	10.4	10.6	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

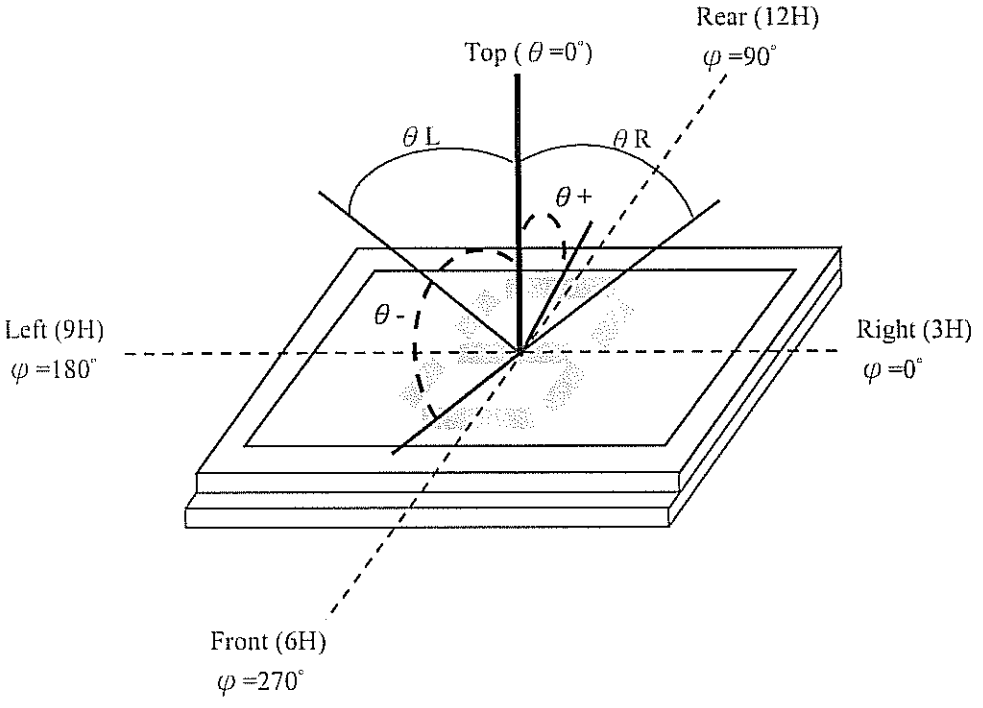
Ta = 25°C

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	3	-	Note 3
Response Time(rise)	Tr	θ = -5° , ∅ = 270°	-	200 ms	300 ms	Note 2
Response Time(fall)	Tf	θ = -5° , ∅ = 270°	-	150 ms	225 ms	

Note 1.

Optical characteristics-2

Viewing angle

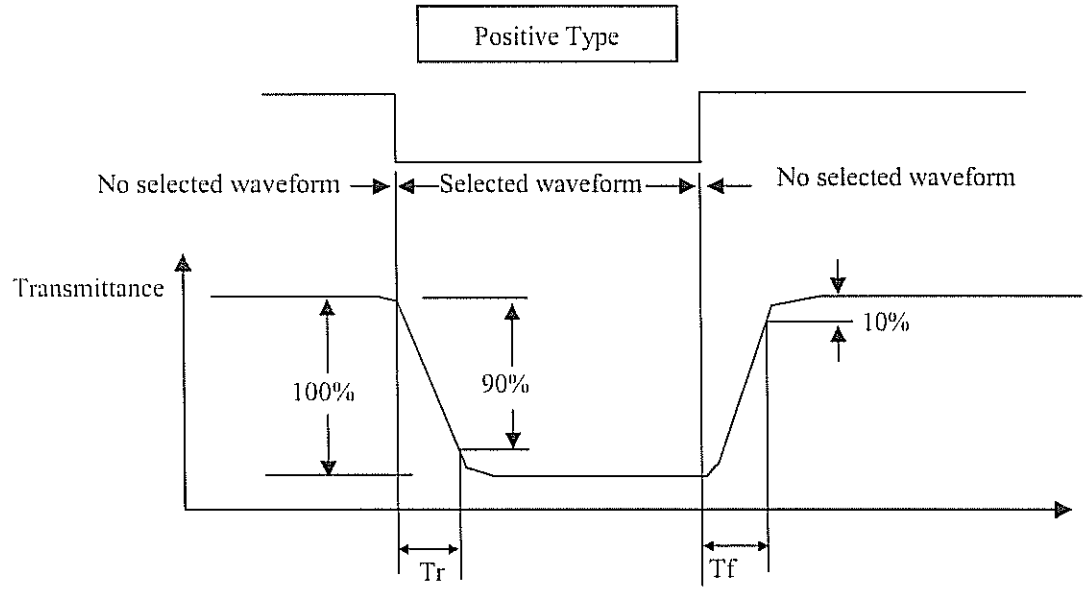


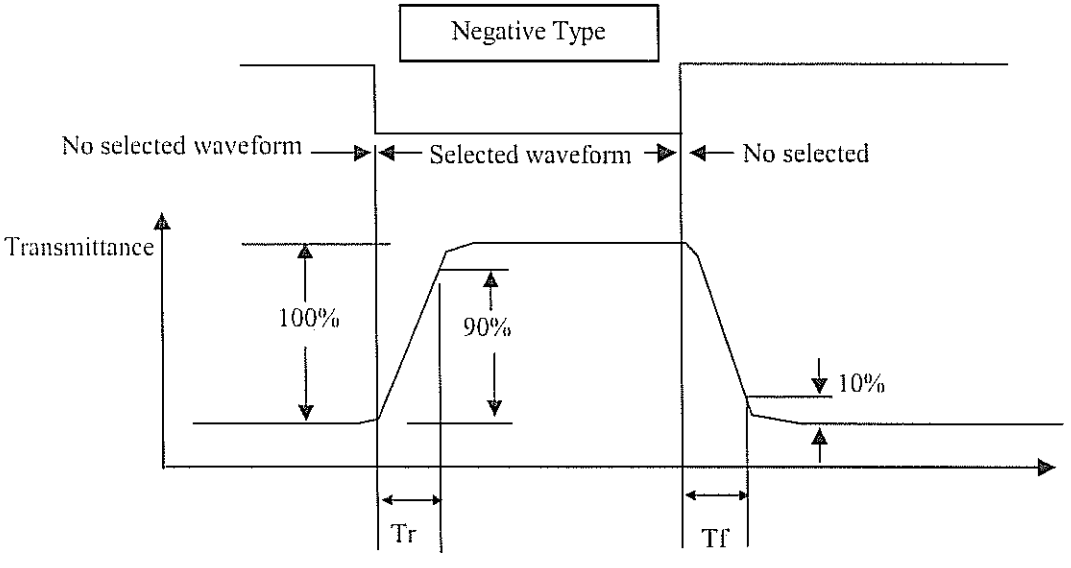
Viewing angle

Note 2.

Optical characteristics-3

Fig.2 Definition of response time





Electrical characteristics-2

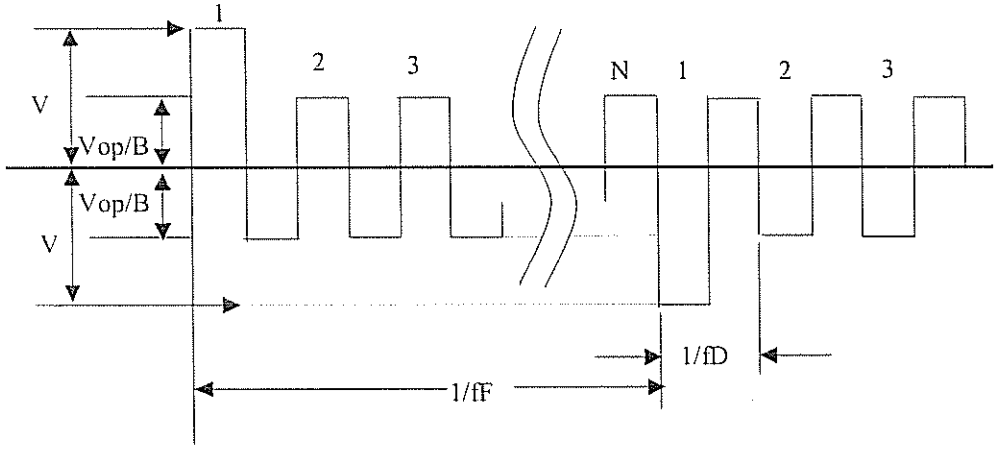
※2 Drive waveform

Vop: Drive voltage　　fF: Frame frequency

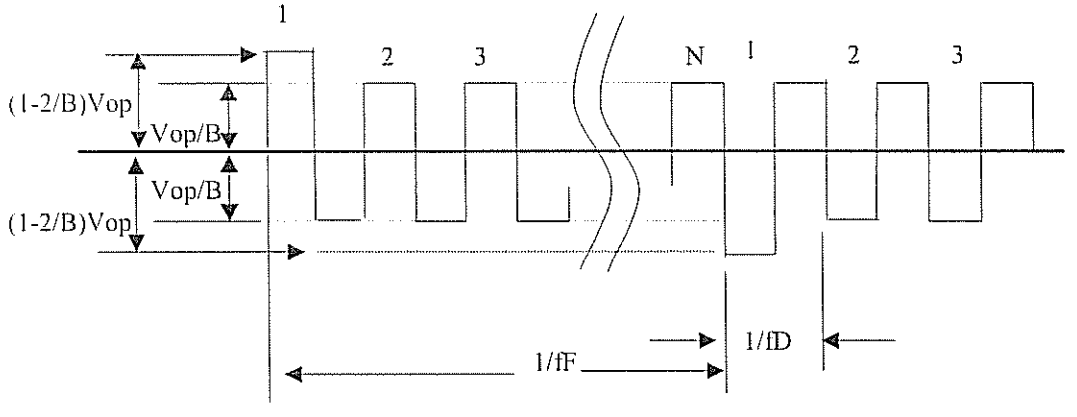
1/B: Bias　　fD: Drive frequency

N: Duty

(1) Selected waveform



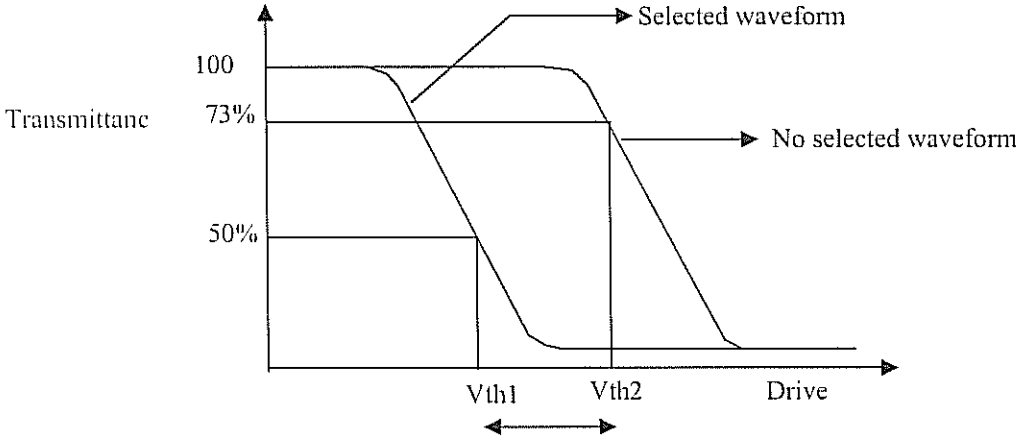
(2) Non- Selected waveform



Note:

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

Note 3. : Definition of Vth

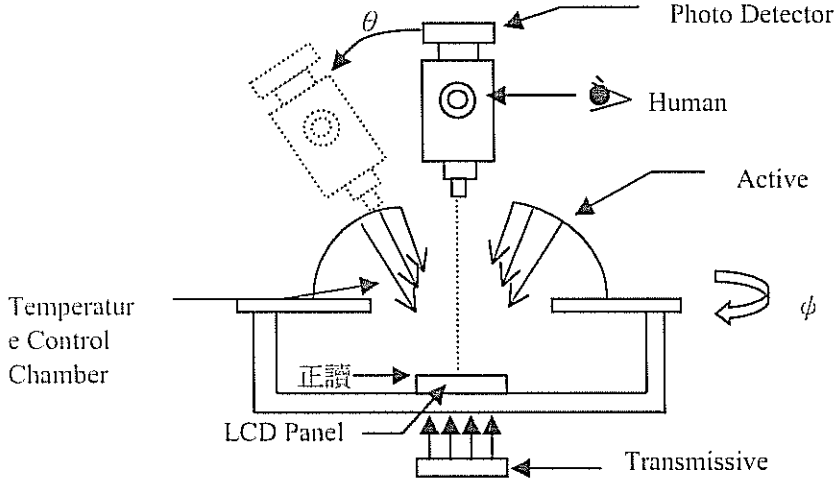


Active voltage range

	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℃	-	160	mA
Reverse Voltage	VR	Ta =25℃	-	5	V
Power Dissipation	PO	Ta =25℃	-	400	mW

Electrical / Optical Characteristics

Ta =25℃

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF= 100 mA	1.9	2.2	2.4	V
Average Brightness (with LCD) *1	IV		3	7	-	cd/m^2
Wavelength (with LCD) *1	Hue (λp)		569	572	575	nm
Uniformity *1	△B		65	-	-	*2
Reverse Current	IR	VR = 4 V	-	-	100	μA
Color	Yellow Green					

*1 This value will be changed while mass production.
*2 B=Br(min) / Br(max)

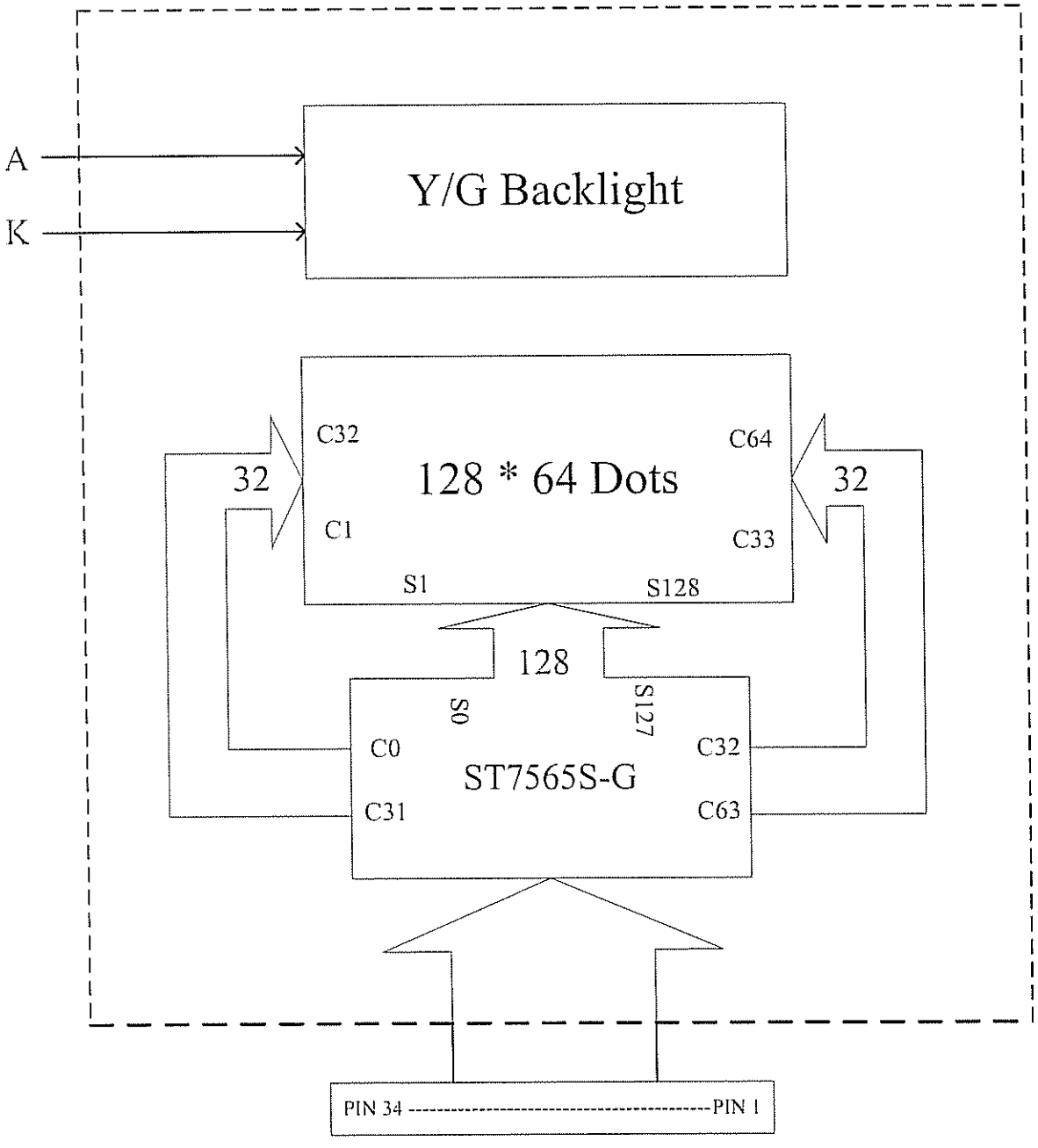
2. MODULE STRUCTURE

2.1 Counter Drawing

2.1.1 LCM Mechanical Diagram

* See Appendix

2.1.2 Block Diagram



Please refer interface pin description for detail

2.2 Interface Pin Description

Pin No.	Symbol	Function
1	/CS1	This is the chip select signal. When /CS1 = "L" ," then the chip select becomes active, and data/command I/O is enabled.
2	/RES	When /RES is set to "L," the settings are initialized.
3	A0	This is connect to the least significant bit of the normal MPU address bus, and it determines whether the data bits are data or a command. A0 = "H": Indicates that D0 to D7 are display data. A0 = "L": Indicates that D0 to D7 are control data.
4	/WR (R/W)	When connected to an 8080 MPU, this is active LOW. (R/W) This terminal connects to the 8080 MPU /WR signal. The signals on the data bus are latched at the rising edge of the /WR signal. When connected to a 6800 Series MPU: This is the read/write control signal input terminal. When R/W = "H": Read. When R/W = "L": Write.
5	/RD (E)	When connected to an 8080 MPU, this is active LOW. (E) This pin is connected to the /RD signal of the 8080 MPU, and the ST7565S series data bus is in an output status when this signal is "L". When connected to a 6800 Series MPU, this is active HIGH. This is the 6800 Series MPU enable clock input terminal.
6	D0	This is an 8-bit bi-directional data bus that connects to an 8-bit or 16-bit standard MPU data bus. When the serial interface is selected (P/S = "L") : D7 : serial data input (SI) ; D6 : the serial clock input (SCL). D0 to D5 are set to high impedance. When the chip select is not active, D0 to D7 are set to high impedance.
7	D1	
8	D2	
9	D3	
10	D4	
11	D5	
12	D6	
13	D7	
14	VDD	Shared with the MPU power supply terminal VDD. (3.3 V)
15	VSS	This is a 0V terminal connected to the system GND.
16	VOUT	DC/DC voltage converter. Connect a capacitor between this terminal and VSS.

Pin No.	Symbol	Function
17	CAP5-	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1+ terminal.
18	CAP3-	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1+ terminal.
19	CAP1+	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1- terminal.
20	CAP1-	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1+ terminal.
21	CAP2-	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2+ terminal.
22	CAP2+	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2- terminal.
23	CAP4-	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2+ terminal.
24	VRS	This is the externally-input VREG power supply for the LCD power supply voltage regulator. These are only enabled for the models with the VREG external input option.
25	V1	Power This is a multi-level power supply for the liquid crystal drive. The voltage Supply applied is determined by the liquid crystal cell, and is changed through the use of a resistive voltage divided or through changing the impedance using an op. amp. Voltage levels are determined based on VDD, and must maintain the relative magnitudes shown below. VDD (= V0) ≧V1 ≧V2 ≧V3 ≧V4 ≧V5 When the power supply turns ON, the internal power supply circuits produce the V1 to V4 voltages shown below. The voltagesettings are selected using the LCD bias set command.
26	V2	
27	V3	
28	V4	
29	V5	

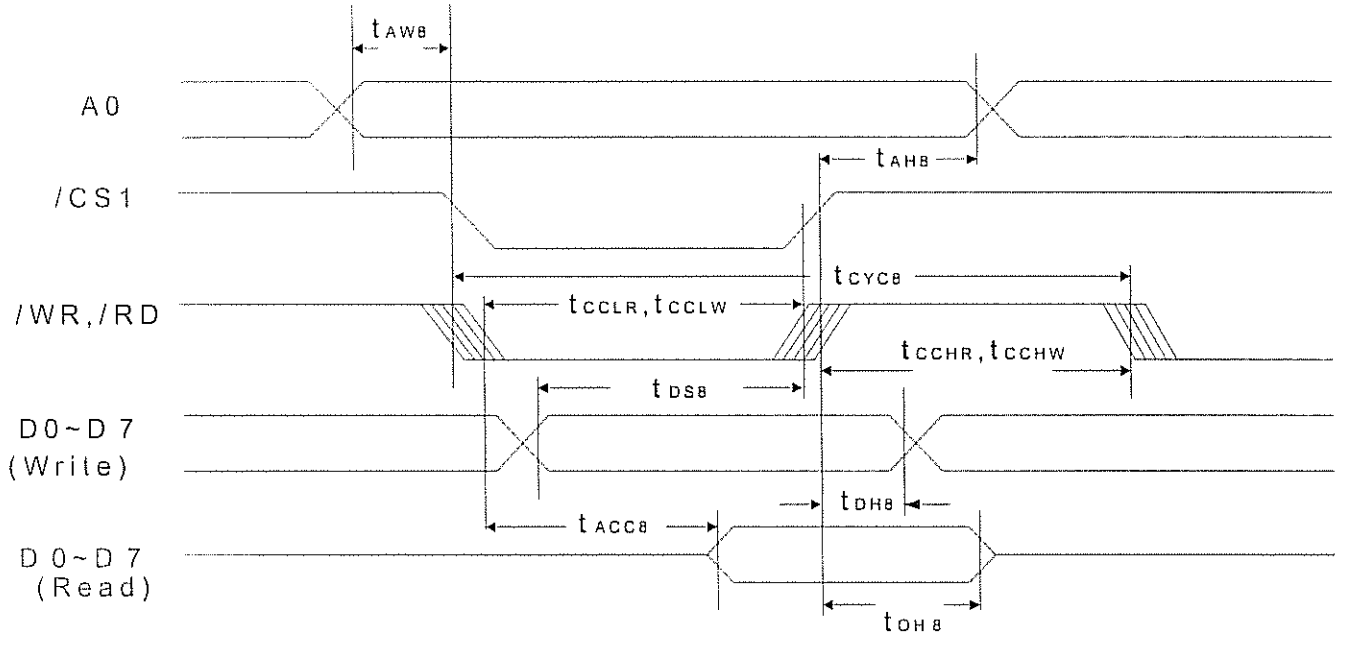
	1/65 DUTY
V1	1/9 * V5 , 1/7 * V5
V2	2/9 * V5 , 2/7 * V5
V3	7/9 * V5 , 5/7 * V5
V4	8/9 * V5 , 6/7 * V5

<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Function</th></tr>
<tr><td>30</td><td>VR</td><td>Output voltage regulator terminal. Provides the voltage between VDD and V5 through a resistive voltage divider.
IRS = "L" : the V5 voltage regulator internal resistors are not used .
IRS = "H" : the V5 voltage regulator internal resistors are used .</td></tr>
<tr><td>31</td><td>C86</td><td>This is the MPU interface switch terminal.
C86 = "H": 6800 Series MPU interface.
C86 = "L": 8080 MPU interface.</td></tr>
<tr><td>32</td><td>P/S</td><td>This is the parallel data input/serial data input switch terminal.
P/S = "H": Parallel data input.
P/S = "L": Serial data input.
The following applies depending on the P/S status:
<table>
<tr><th>P/S</th><th>Data/Command</th><th>Data</th><th>Read/Write</th><th>Serial Clock</th></tr>
<tr><td>"H"</td><td>A0</td><td>D0 to D7</td><td>$\overline{RD}$, $\overline{WR}$</td><td>X</td></tr>
<tr><td>"L"</td><td>A0</td><td>SI (D7)</td><td>Write only</td><td>SCL (D6)</td></tr>
</table>
When P/S = "L", D0 to D5 may be "H", "L" or Open.
RD (E) and WR (R/W) are fixed to either "H" or "L".
With serial data input, It is impossible read data from RAM .</td></tr>
<tr><td>33</td><td>/HPM</td><td>This is the power control terminal for the power supply circuit for liquid crystal drive.
HPM = "H": Normal mode
HPM = "L": High power mode</td></tr>
<tr><td>34</td><td>IRS</td><td>This terminal selects the resistors for the V5 voltage level adjustment.
IRS = "H": Use the internal resistors
IRS = "L": Do not use the internal resistors. The V5 voltage level is regulated by an external resistive voltage divider attached to the VR terminal</td></tr>
</table>

BL Pin No.	Symbol	Function
	A	Power supply for LED Backlight Anode input （VF=2.2V , IF=100 mA)
	K	Power supply for LED Backlight Cathode input （ 0 V ）

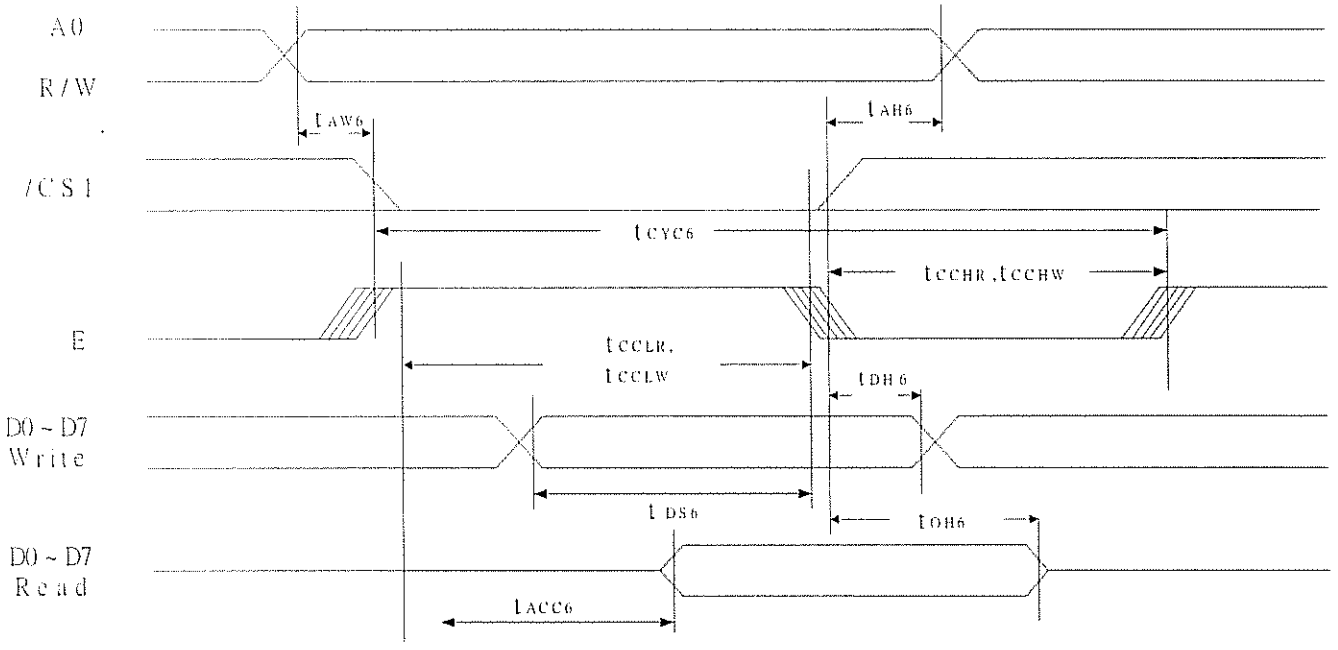
2.3 Timing Characteristics

FOR 8080 Series MPU



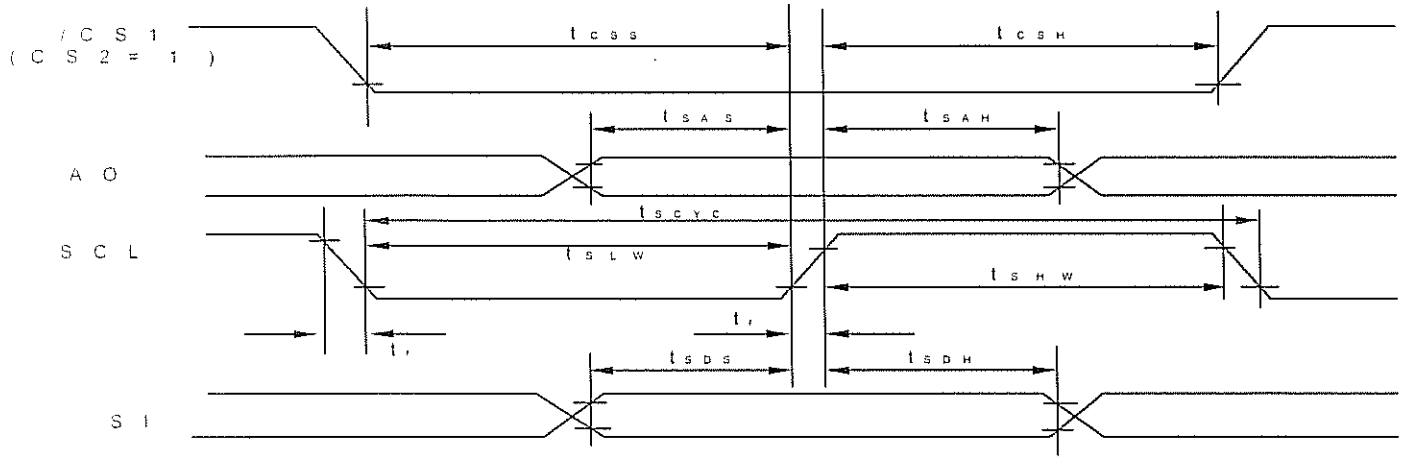
Item	Signal	Symbol	Condition	Rating		Units
				Min.	Max.	
Address hold time	A0	t_{AH8}		0	-	ns
Address setup time		t_{AW8}		0	-	
System cycle time		t_{CYC8}		240	-	
Enable L pulse width (WRITE)	WR	t_{CCLW8}		80	-	
Enable H pulse width (WRITE)		t_{CCHW8}		80	-	
Enable L pulse width (READ)	RD	t_{CCLR8}		140	-	
Enable H pulse width (READ)		t_{CCHR8}		80		
WRITE Data setup time	D0 to D7	t_{DS8}		40	-	
WRITE Address hold time		t_{DH8}		0	-	
READ access time		t_{ACC8}	C_L=100pF	-	70	
READ Output disable time		t_{OH8}	C_L=100pF	5	50	

FOR 6800Series MPU



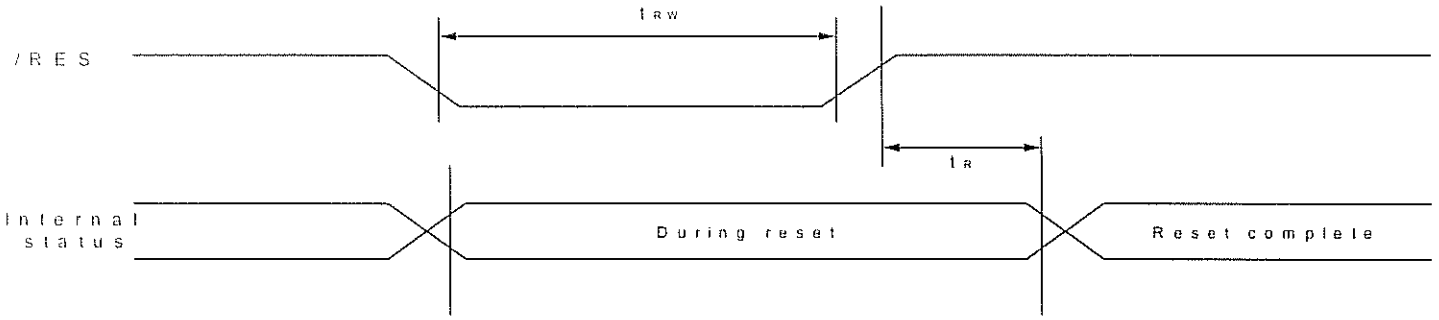
Item	Signal	Symbol	Condition	Rating		Units
				Min.	Max.	
Address hold time	A0	t_{AH6}		0	-	ns
Address setup time		t_{AW6}		0	-	
System cycle time		t_{CYC6}		240	-	
Enable L pulse width (WRITE)	WR	t_{EWLW}		80	-	
Enable H pulse width (WRITE)		t_{EWHW8}		80	-	
Enable L pulse width (READ)	RD	t_{EWLR8}		80	-	
Enable H pulse width (READ)		t_{EWHR}		140		
WRITE Data setup time	D0 to D7	t_{DS6}		40	-	
WRITE Address hold time		t_{DH6}		0	-	
READ access time		t_{ACC6}	C_L=100pF	-	70	
READ Output disable time		t_{OH6}	C_L=100pF	5	50	

Serial Interface



Item	Signal	Symbol	Condition	Rating		Units
				Min	Max	
Serial Clock Period	SCL	T_{SCYC}	-	100	-	ns
SCL"H" pulse with		T_{SHW}	-	50	-	
SCL"L" pulse with		T_{SLW}	-	50	-	
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}	-	40	-	
CS-SCL time		T_{CSH}	-	40	-	

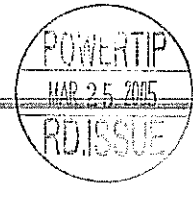
Reset Timing



Item	Signal	Symbol	Condition	Rating			Units
				Min	Typ	Max	
Reset time	-	t_R	-	-	-	1.0	μs
Reset "L" pulse width	RES	t_{RW}		1.0	-	-	μs

2.4 Display Command

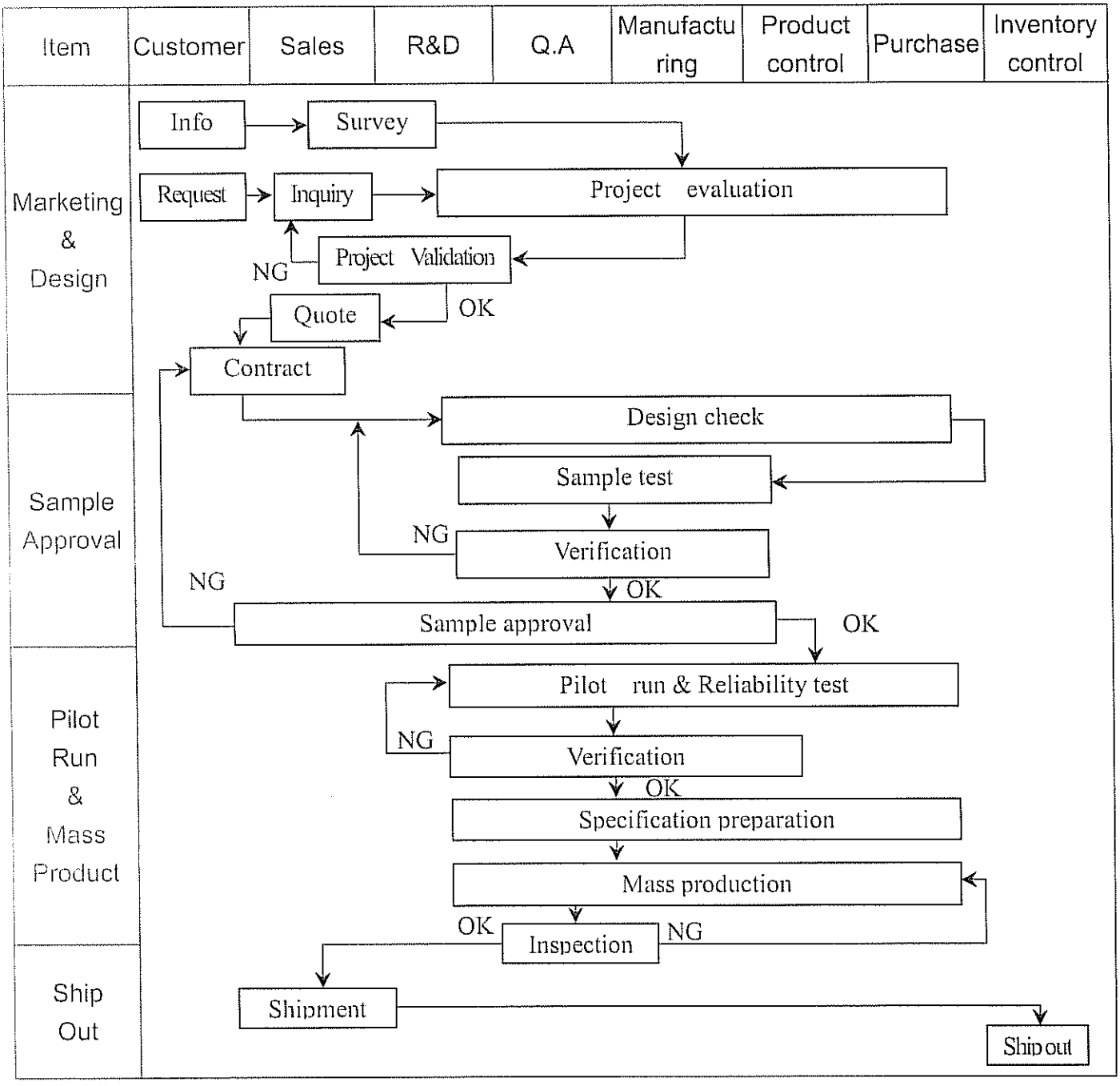
Instruction	RS	RW	D7	D6	D5	D4	D3	D2	D1	D0	Description
Display ON/OFF	0	0	1	0	1	0	1	1	1	0/1	Turn on/off LCD panel.
Display start line set	0	0	0	1	Display start address						Specify DDRAM line for COM0
Page address set	0	0	1	0	1	1	Page address				Set page address
Set column address MSB	0	0	0	0	0	1	Y7	Y6	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

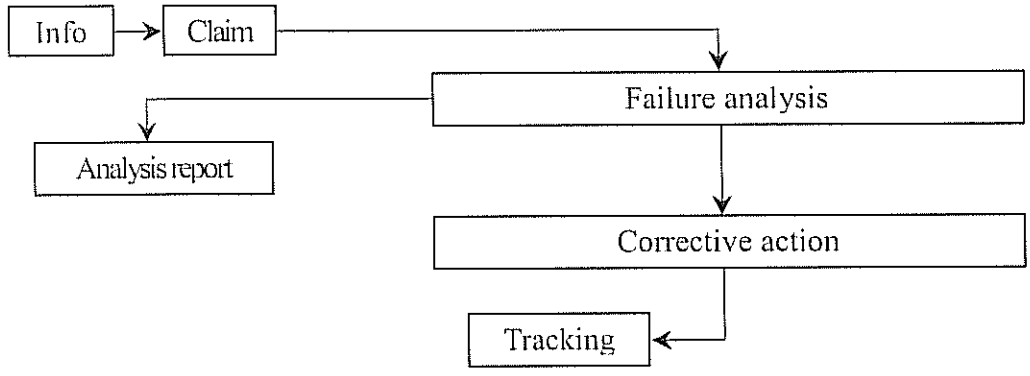


Instruction	RS	RW	D7	D6	D5	D4	D3	D2	D1	D0	Description
Electronic volume mode set	0	0	1	0	0	0	0	0	0	1	Set reference voltage mode
Electronic volume regulator set	0	0	x	x	Electronic volume value						Set reference voltage register
Static indicator ON/OFF	0	0	1	0	1	0	1	1	0	0/1	Set static indicator mode
Static indicator register set	0	0	x	x	x	x	x	x	Mode		Set the flashing mode
Boosting ratio set	0	0	1	1	1	1	1	0	0	0	Select boosting ratio
	0	0	*	*	*	*	*	*	Mode		
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

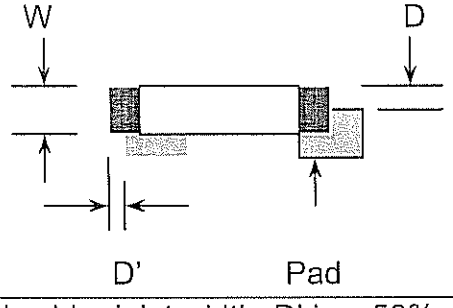


Item	Customer	Sales	R&D	Q.A	Manufacturing	Product control	Purchase	Inventory control
Sales Service								
Q.A Activity	1. ISO 9001 Maintenance Activities 3. Equipment calibration 5. Standardization Management				2. Process improvement proposal 4. Education And Training Activities			

3.2 Inspection Specification

Inspection Standard : MIL-STD-105E Table Normal Inspection Single Sampling Level II
Equipment : Gauge , MIL-STD , Powertip Tester , Sample
IQC Defect Level : Major Defect AQL 0.4; Minor Defect AQL 1.5
FQC Defect Level : 100% Inspection
OUT Going Defect Level : Sampling
Specification :

NO	Item	Specification	Judge	Level
1	Part Number	The part number is inconsistent with work order of production	N.G.	Major
2	Quantity	The quantity is inconsistent with work order of production	N.G.	Major
3	Electronic characteristics of LCM A=(L + W) 2	The display lacks of some patterns.	N.G.	Major
		Missing line.	N.G.	Major
		The size of missing dot, A is > 1/2 Dot size	N.G.	Major
		There is no function.	N.G.	Major
		Output data is error	N.G.	Major
4	Appearance of LCD A=(L + W) 2 Dirty particle (Including scratch 、bubble)	Material is different with work order of production	N.G.	Major
		LCD is assembled in inverse direction	N.G.	Major
		Bezel is assembled in inverse direction	N.G.	Major
		Shadow is within LCD viewing area + 0.5 mm	N.G.	Major
		The diameter of dirty particle, A is > 0.4 mm	N.G.	Minor
		Dirty particle length is > 3.0mm, and 0.01mm < width 0.05mm	N.G.	Minor
		Display is without protective film	N.G.	Minor
		Conductive rubber is over bezel 1mm	N.G.	Minor
		Polarizer exceeds over viewing area of LCD	N.G.	Minor
		Area of bubble in polarizer, A > 1.0mm, the number of bubble is > 1 piece.	N.G.	Minor
		0.4mm < Area of bubble in polarizer, A < 1.0mm, the number of bubble is > 4 pieces.	N.G.	Minor
5	Appearance of PCB A=(L + W) 2	Burned area or wrong part number is on PCB	N.G.	Major
		The symbol, character, and mark of PCB are unidentifiable.	N.G	Minor
		The stripped solder mask , A is > 1.0mm	N.G.	Minor
		0.3mm < stripped solder mask or visible circuit, A < 1.0mm, and the number is 4 pieces	N.G.	Minor
		There is particle between the circuits in solder mask	N.G	Minor
		The circuit is peeled off or cracked	N.G	Minor
		There is any circuits risen or exposed.	N.G	Minor
		0.2mm < Area of solder ball, A is 0.4mm The number of solder ball is 3 pieces	N.G	Minor
		The magnitude of solder ball, A is > 0.4mm.	N.G	Minor

NO	Item	Specification	Judge	Level
6	Appearance of molding A=(L + W) 2	The shape of modeling is deformed by touching.	N.G.	Major
		Insufficient epoxy: Circuit or pad of IC is visible	N.G.	Minor
		Excessive epoxy: Diameter of modeling is > 20mm or height is > 2.5mm	N.G.	Minor
		The diameter of pinhole in modeling, A is > 0.2mm.	N.G.	Minor
7	Appearance of frame A=(L + W) 2	The folding angle of frame must be > 45°+ 10°	N.G.	Minor
		The area of stripped electroplate in top-view of frame, A is > 1.0mm.	N.G.	Minor
		Rust or crack is (Top view only)	N.G.	Minor
		The scratched width of frame is > 0.06mm. (Top view only)	N.G.	Minor
8	Electrical characteristic of backlight A=(L + W) 2	The color of backlight is nonconforming	N.G.	Major
		Backlight can't work normally.	N.G.	Major
		The LED lamp can't work normally	N.G.	Major
		The unsoldering area of pin for backlight, A is > 1/2 solder joint area.	N.G.	Minor
		The height of solder pin for backlight is > 2.0mm	N.G.	Minor
10	Assembly parts A=(L + W) 2	The mark or polarity of component is unidentifiable.	N.G.	Minor
		The height between bottom of component and surface of the PCB is floating > 0.7mm	N.G.	Minor
		D > 1/4W 	N.G.	Minor
		End solder joint width, D' is > 50% width of component termination or width of pad	N.G.	Minor
		Side overhang, D is > 25% width of component termination.	N.G.	Minor
		Component is cracked, deformed, and burned, etc.	N.G.	Minor
		The polarity of component is placed in inverse direction.	N.G.	Minor
		Maximum fillet height of solder extends onto the component body or minimum fillet height is < 0.5mm.	N.G.	Minor

4. RELIABILITY TEST

4.1 Reliability Test Condition

NO	Item	Test Condition	
1	High Temperature Storage	Storage at 80 ± 2°C 96~100 hrs Surrounding temperature, then storage at normal condition 4hrs	
2	Low Temperature Storage	Storage at -30 ± 2°C 96~100 hrs Surrounding temperature, then storage at normal condition 4hrs	
3	High Temperature /Humidity Storage	1.Storage 96~100 hrs 60 ± 2°C, 90~95%RH surrounding temperature, then storage at normal condition 4hrs. (Excluding the polarizer).or 2.Storage 96~100 hrs 40 ± 2°C, 90~95%RH surrounding temperature, then storage at normal condition 4 hrs.	
4	Temperature Cycling	-20°C 25°C 70°C 25°C (30mins) (5mins) (30mins) (5mins) 10 Cycle	
5	Vibration	10~55Hz (1 minute) 1.5mm X,Y and Z direction * (each 2hrs)	
6	ESD Test	Air Discharge: Apply 6 KV with 5 times discharge for each polarity +/-	Contact Discharge: Apply 250V with 5 times discharge for each polarity +/-
		Testing location: Around the face of LCD	Testing location: 1.Apply to bezel. 2.Apply to Vdd, Vss.
7	Drop Test	Packing Weight (Kg)	Drop Height (cm)
		0 ~ 45.4	122
		45.4 ~ 90.8	76
		90.8 ~ 454	61
		Over 454	46

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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.

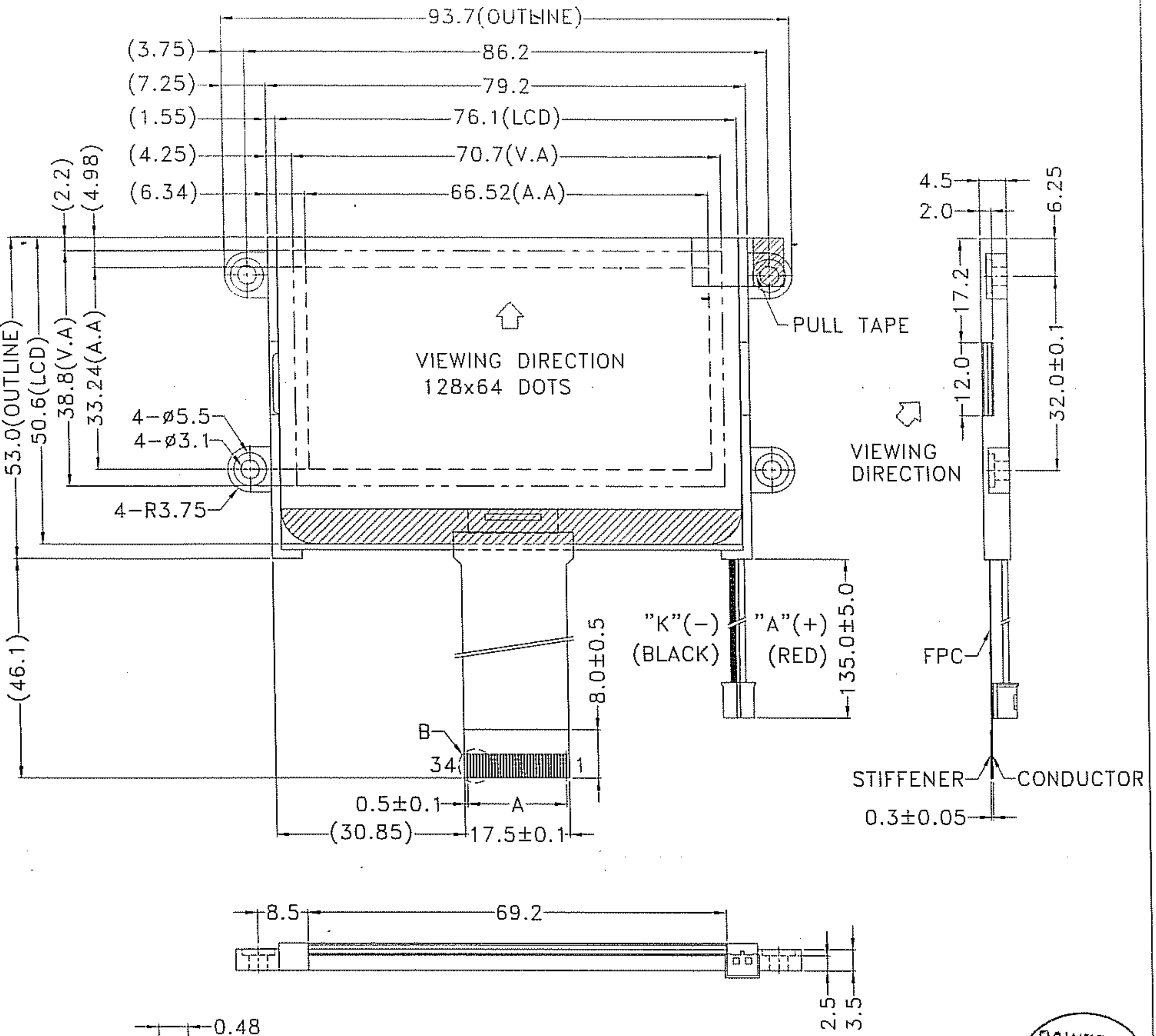
5.4 TERMS OF WARRANTY

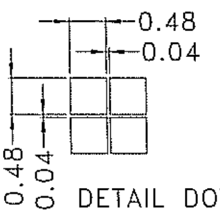
5.4.1 Applicable warrant period

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

5.4.2 Unaccepted responsibility

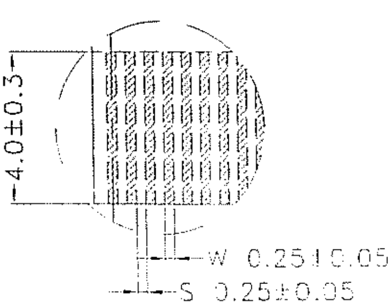
This product has been manufactured to your company's specification as a part for use in your company's general electronic products. It is guaranteed to perform according to delivery specifications. For any other use apart from general electronic equipment, we cannot take responsibility if the product 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 DOTS
SCALE: 10/1

NOTE:
1.THE TOLERANCE UNLESS CLASSIFIED ±0.2mm
2.LCD TYPE : STN (YELLOW GREEN)
3.VIEWING DIRECTION : 6 O'CLOCK
4.DISPLAY MODE : POSITIVE / TRANSFLECTIVE
5.Top: -20°~70° , Tst: -30°~80°
6.A=P0.5x33=16.5±0.05
7.IC=ST7565S-G



DETAIL B
SCALE: 5/1

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REV	DESCRIPTION	DATE

台灣 光電股份有限公司 POWERTIP TECHNOLOGY CORPORATION						
	SCALE:1/1	UNIT:mm	PAGE:1/1	APPROVED	CHECKER	DRAWN
圖面名稱	PG12864LRU-022-H01				研發 2005-3-15 黃証凱	研發 2005-3-15 李美倫
圖面編號	PT-05003-001		EDI 0			

LCM Model	PS12864LRU-022-H01

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

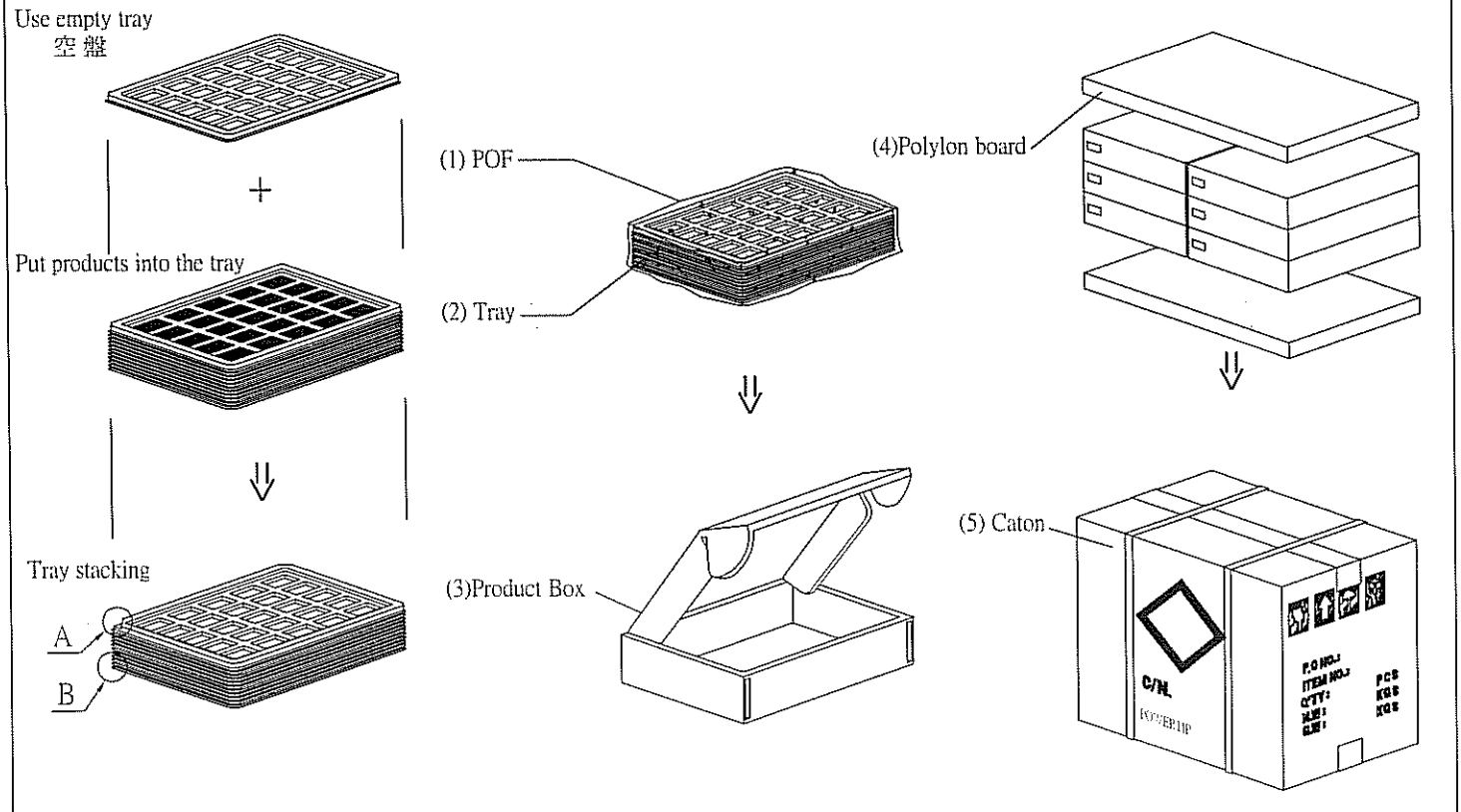
Approve	Check	Contact
04.3.24	04-3-15	04-3-15
DATE	DATE	Ver
05'01.15	05'01.15	0

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

No.	Item	Model	Dimensions (mm)	Quantity
1	成品 (LCD Panel)	PS12864LRU-022-H01	93.7 X 53.0	144
2	多層薄膜(1)POF	BA03	. 19"X350X0.015	6
3	TRAY 盤 (2)	TYTE050304001A	352 X 260 X 16.8	24
4	內盒(3)Product Box	BP01	393 X 274 X 68	6
5	保力龍板(4)Polylon board	PL08	550 X 393 X 20	2
6	外紙箱(5)Carton	BC10	570 X 410 X 265	1
7				
8				
9				

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

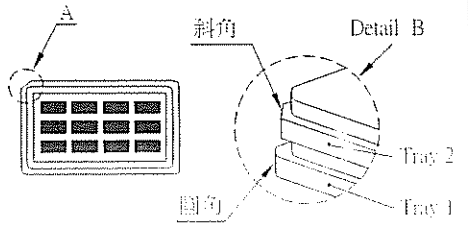
(1)LCD quantity per box : no per row	8	x no per column	3	=	24
(2)Total LCD quantity in carton : quantity per box	24	x no of boxes	6	=	144



特 記 事 項 (REMARK)

1. Label Specifications :

MODEL:
LOT NO:
QUANTITY:
CHECK:



2.Rotate tray 180 degrees and place on top of stack. Check the tray stack using Fig. B.
TRAY盤相對時,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)

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