

EXAMINED BY :	EMERGING DISPLAY TECHNOLOGIES CORPORATION	FILE NO . CAS-51460
<i>Vincent Wn</i>		ISSUE : SEP.04, 2006
APPROVED BY:		TOTAL PAGE : 8
<i>David Chang</i>		VERSION : 1

CUSTOMER	ACCEPTANCE	SPECIFICATIONS
----------	------------	----------------

MODEL NO. :

EW 50801FLW

(RoHS)

FOR MESSRS :

CUSTOMER'S APPROVAL

DATE :

BY :

EMERGING DISPLAY
TECHNOLOGIES CORPORATION

MODEL NO . E W 5 0 8 0 1 F L W(RoHS)	VERSION 1	PAGE 0-1
---	--------------	-------------

RECORDS OF REVISION	DOC . FIRST ISSUE SEP.04, 2006
---------------------	-----------------------------------

DATE	REVISED PAGE NO.	SUMMARY

MODEL NO . E W 5 0 8 0 1 F L W(RoHS)	VERSION 1	PAGE 0-2
---	--------------	-------------

TABLE OF CONTENTS

NO.	ITEM	PAGE
1.	GENERAL SPECIFICATIONS -----	1
2.	MECHANICAL SPECIFICATIONS -----	1
3.	ABSOLUTE MAXIMUM RATINGS -----	2
4.	ELECTRICAL CHARACTERISTICS -----	3
5.	OPTICAL CHARACTERISTICS -----	4
6.	OUTLINE DIMENSIONS -----	5
7.	BLOCK DIAGRAM -----	6
8.	DETAIL DRAWING OF DOT MATRIX -----	7
9.	INTERFACE SIGNALS -----	7
10.	POWER SUPPLY -----	8

1. GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

E U - 0 0 2 B

1.2 APPLICATION NOTES FOR CONTROLLER / DRIVER :

PLEASE REFER TO :

E P S O N - S 1 D 1 3 7 0 0

1.3 THIS INDIVIDUAL SPECIFICATION IS PRIOR TO GENERAL SPECIFICATIONS .

1.4 MATERIAL SAFETY DESCRIPTION

ASSEMBLIES SHALL COMPLY WITH EUROPEAN ROHS REQUIREMENTS, INCLUDING PROHIBITED MATERIALS/COMPONENTS CONTAINING LEAD, MERCURY, CADMIUM, HEXAVALENT CHROMIUM, POLYBROMINATED BIPHENYLS (PBB) AND POLYBROMINATED DIPHENYL ETHERS (PBDE)

2. MECHANICAL SPECIFICATIONS

- | | | |
|--------------------|-------|--|
| (1) NUMBER OF DOTS | ----- | 320W * 240H DOTS |
| (2) MODULE SIZE | ----- | 160W * 109H * 11D(max.) mm |
| (3) EFFECTIVE AREA | ----- | 120W * 90H mm |
| (4) ACTIVE AREA | ----- | 115.17W * 86.37H mm |
| (5) DOT SIZE | ----- | 0.33W * 0.33H mm |
| (6) DOT PITCH | ----- | 0.36W * 0.36H mm |
| (7) LCD TYPE | ----- | FSTN , POSITIVE , WHITE ,
TRANSFLECTIVE |
| (8) DRIVING METHOD | ----- | 1 / 242 DUTY MULTIPLEX DRIVE |
| (9) BACKLIGHT | ----- | LED , COLOR : WHITE |

3. ABSOLUTE MAXIMUM RATINGS

3.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS.

PARAMETER	SYMBOL	MIN.	MAX.	UNIT	REMARK
POWER SUPPLY FOR LOGIC	VDD – VSS	0	6.0	V	
INPUT VOLTAGE	VI	VSS	VDD	V	
STATIC ELECTRICITY	—	—	100	V	NOTE (1)
POWER SUPPLY FOR LED BACKLIGHT	VLED – VLSS	—	6	V	

NOTE (1) : TEST METHOD AND CONDITIONS :
AFTER CHARGING UP 200 pF CAPACITOR BY STATED VOLTAGE ,
THE CAPACITOR IS CONNECTED WITH INTERFACE PINS OF THE
MODULE .

3.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS .

I T E M	OPERATING		STORAGE		REMARK
	MIN.	MAX.	MIN.	MAX.	
AMBIENT TEMPERATURE	- 2 0 °C	7 0 °C	- 3 0 °C	8 0 °C	NOTE (1),(3)
HUMIDITY	NOTE (2)		NOTE (2)		WITHOUT CONDENSATION
VIBRATION	—	2.45m /s ² (0.25G)	—	11.76m /s ² (1.2G)	10~100 Hz XYZ DIRECTIONS 1 Hr . EACH
SHOCK	—	29.4m /s ² (3G)	—	490.0m /s ² (50G)	10 mSECONDS XYZ DIRECTIONS 1 TIME EACH
CORROSIVE GAS	NOT ACCEPTABLE		NOT ACCEPTABLE		

NOTE (1) : BACKGROUND COLOR CHANGES SLIGHTLY DEPENDING ON AMBIENT
TEMPERATURE THIS PHENOMENON IS REVERSIBLE .

NOTE (2) : Ta ≤ 60°C , 90%RH MAX.(96HRS MAX.)

Ta > 60°C ABSOLUTE HUMIDITY MUST BE

LOWER THAN THE HUMIDITY OF 90%RH AT 60°C.(96HRS MAX.)

NOTE (3) : Ta AT -30°C : WILL BE < 48 HRS

80°C : WILL BE < 168 HRS

4. ELECTRICAL CHARACTERISTICS

Ta = 25°C VDD-VSS = 5.0V

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY VOLTAGE FOR LOGIC	VDD - VSS	—	4.75	5.0	5.25	V
INPUT VOLTAGE NOTE (1)	VIH	CMOS LEVEL VDD=MAX.	3.5	—	—	V
	VIL	CMOS LEVEL VDD=MIN.	—	—	1.0	V
OUTPUT VOLTAGE NOTE (1)	VOH	VDD=MIN. IOH=-8mA	VDD-0.4	—	—	V
	VOL	VDD=MIN. IOH=8mA	—	—	0.4	V
POWER SUPPLY CURRENT FOR LOGIC NOTE (2)	IDD	VDD - VSS = 5.0V	—	(72.0)	(90.0)	mA
CLOCK OSCILLATION FREQUENCY	fOSC	—	—	32	—	MHz
LED BACKLIGHT FORWARD VOLTAGE	VLED - VLSS	—	—	5.0	—	V
LED BACKLIGHT FORWARD CURRENT	IF	VLED-VLSS=5.0V	—	240	—	mA

NOTE (1): APPLIED TO TERMINALS FLM, CL1, CL2, D0~D3, $\overline{\text{DISPOFF}}$.

NOTE (2): THE DISPLAY PATTERN IS ALL "OFF"/"ON".

5. OPTICAL CHARACTERISTICS

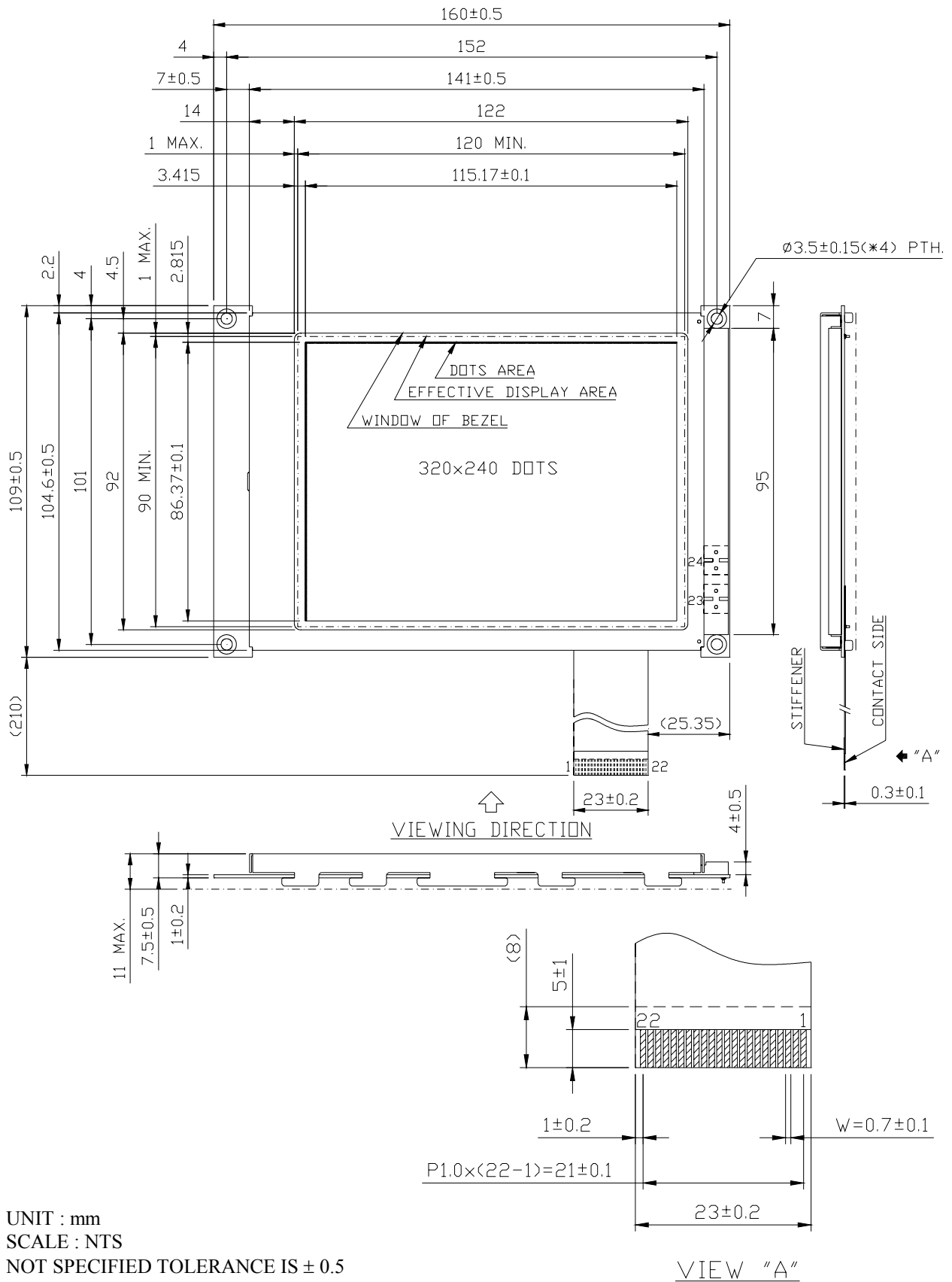
Ta = 25 °C

VDD-VSS = 5.0V

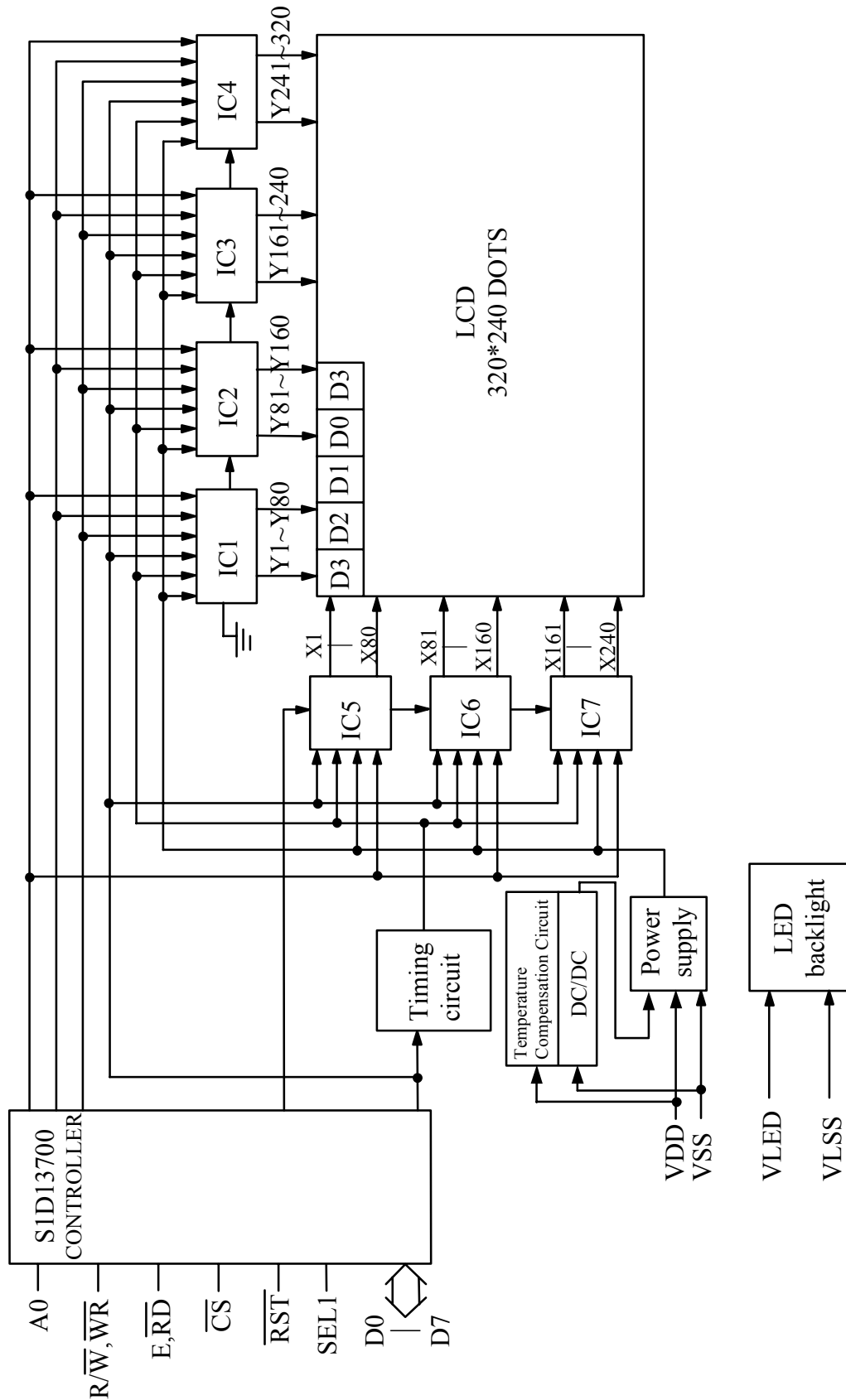
I T E M	SYMBOL	CONDITION		MIN.	TYP.	MAX.	UNIT	NOTE
VIEWING ANGLE	θ_{y+}	K \geq 2	$\theta_x=0^\circ$	(35)	(40)	—	deg.	1
	θ_{y-}			(35)	(40)	—		
	θ_{x+}		$\theta_y=0^\circ$	(30)	(35)	—		
	θ_{x-}			(40)	(45)	—		
CONTRAST RATIO	K	$\theta_y=-10^\circ, \theta_x=0^\circ$		5	10	—	—	1
RESPONSE TIME	tr (rise)	$\theta_y=-10^\circ$ $\theta_x=0^\circ$	Ta = -20 °C	—	4200	5460	ms	1
			Ta = 25 °C	—	300	390		
			Ta = 70 °C	—	150	195		
	tf (fall)		Ta = -20 °C	—	2900	3770		
			Ta = 25 °C	—	190	247		
			Ta = 70 °C	—	80	104		
BRIGHTNESS OF MODULE	L	VLED – VLSS = 5.0 V ALL “OFF”		40	50	—	cd / m ²	—

NOTE (1) : PLEASE REFER TO :
CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS. (EU – 002B)

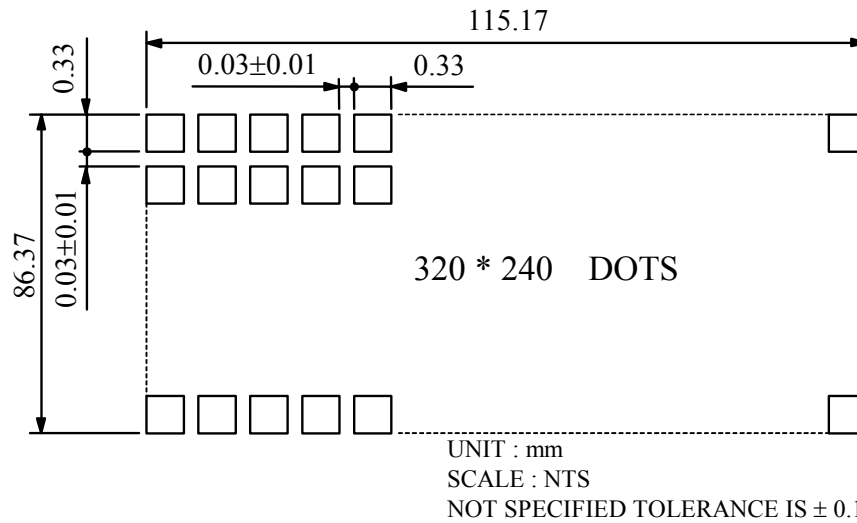
6. OUTLINE DIMENSIONS



7. BLOCK DIAGRAM



8. DETAIL DRAWING OF DOT MATRIX

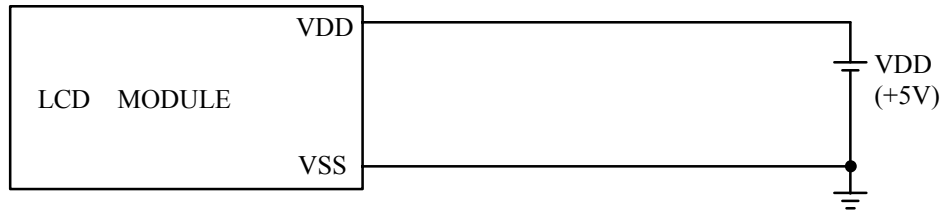


9. INTERFACE SIGNALS

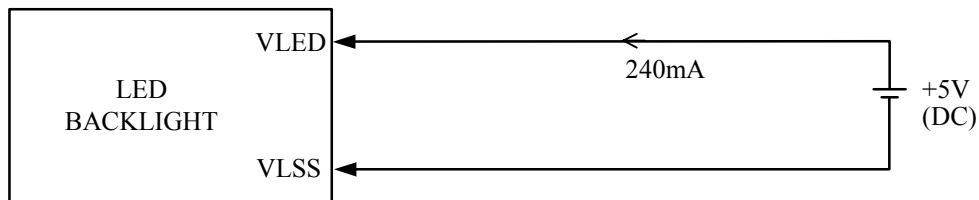
PIN NO	SYMBOL	LEVEL	FUNCTION																				
1	VSS	—	GROUND																				
2	VDD	—	POWER SUPPLY FOR LOGIC CIRCUIT																				
3	NC	—	NOT USE																				
4	A0	—	8080 FAMILY INTERFACE																				
			<table border="1" style="width: 100%;"> <thead> <tr> <th>AO</th> <th>\overline{RD}</th> <th>\overline{WR}</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>1</td> <td>STATUS FLAG READ</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>DISPLAY DATA AND CURSOR ADDRESS READ</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>DISPLAY DATA AND PARAMETER WRITE</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>COMMAND WRITE</td> </tr> </tbody> </table>	AO	\overline{RD}	\overline{WR}	FUNCTION	0	0	1	STATUS FLAG READ	1	0	1	DISPLAY DATA AND CURSOR ADDRESS READ	0	1	0	DISPLAY DATA AND PARAMETER WRITE	1	1	0	COMMAND WRITE
			AO	\overline{RD}	\overline{WR}	FUNCTION																	
			0	0	1	STATUS FLAG READ																	
			1	0	1	DISPLAY DATA AND CURSOR ADDRESS READ																	
			0	1	0	DISPLAY DATA AND PARAMETER WRITE																	
			1	1	0	COMMAND WRITE																	
			6800 FAMILY INTERFACE																				
			<table border="1" style="width: 100%;"> <thead> <tr> <th>AO</th> <th>R / \overline{W}</th> <th>E</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td>1</td> <td>STATUS FLAG READ</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>DISPLAY DATA AND CURSOR ADDRESS READ</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>DISPLAY DATA AND PARAMETER WRITE</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>COMMAND WRITE</td> </tr> </tbody> </table>	AO	R / \overline{W}	E	FUNCTION	0	1	1	STATUS FLAG READ	1	1	1	DISPLAY DATA AND CURSOR ADDRESS READ	0	0	1	DISPLAY DATA AND PARAMETER WRITE	1	0	1	COMMAND WRITE
			AO	R / \overline{W}	E	FUNCTION																	
0	1	1	STATUS FLAG READ																				
1	1	1	DISPLAY DATA AND CURSOR ADDRESS READ																				
0	0	1	DISPLAY DATA AND PARAMETER WRITE																				
1	0	1	COMMAND WRITE																				
5	$\overline{WR}, R / \overline{W}$	H/L	8080 FAMILY INTERFACE ACTS AS THE ACTIVE-LOW WRITE STROBE . 6800 FAMILY INTERFACE ACTS AS THE READ/ WRITE CONTROL SIGNAL .																				
6	\overline{RD}, E	H/L	8080 FAMILY INTERFACE ACTS AS THE ACTIVE-LOW READ STROBE . 6800 FAMILY INTERFACE ACTS AS THE ACTIVE-HIGH ENABLE CLOCK .																				
7 ∧ 14	D0 ∧ D7	H/L	DISPLAY DATA																				
15	\overline{CS}	H/L	CHIP SELECT																				
16	\overline{RST}	H/L	RESET																				
17	NC	—	NOT USE																				
18	SEL1	H/L	8080 OR 6800 FAMILY INTERFACE SELECT , H:6800 , L:8080																				
19 20	NC	—	NOT USE																				
21,23	VLED	—	POWER SUPPLY FOR LED BACKLIGHT (A)																				
22,24	VLSS	—	POWER SUPPLY FOR LED BACKLIGHT (K)																				

10. POWER SUPPLY

10.1 POWER SUPPLY FOR LCM



10.2 POWER SUPPLY FOR LED BACK - LIGHT



10.3 TIMING OF POWER SUPPLY AND INTERFACE SIGNAL

