

EXAMINED BY :  <i>Bob Hu</i>	EMERGING DISPLAY  TECHNOLOGIES CORPORATION	FILE NO . CAS-51611
APPROVED BY:  <i>David Chang</i>		ISSUE : JUN.04, 2007
		TOTAL PAGE : 8
		VERSION : 1

CUSTOMER	ACCEPTANCE	SPECIFICATIONS
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MODEL NO. :  
  
EW 5 0 8 5 5 F L W  
(RoHS)  
FOR MESSRS :  
  
\_\_\_\_\_

CUSTOMER'S APPROVAL

DATE :  
\_\_\_\_\_

BY :  
\_\_\_\_\_

EMERGING DISPLAY  
TECHNOLOGIES CORPORATION

MODEL NO . EW50855FLW(RoHS)	VERSION 1	PAGE 0-1
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RECORDS OF REVISION	DOC . FIRST ISSUE JUN.04, 2007
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1. GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

E U - 0 0 2 B

1.2 APPLICATION NOTE FOR CONTROLLER/DRIVER

PLEASE REFER TO:

CUSTOMER ACCEPTANCE STANDAR SPECIFICATIONS:

A M T 3 3 5 A

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       | ----- | 139.0W * 102.5H * 13.2D mm   |
| (3) EFFECTIVE AREA    | ----- | 103.0W * 79.0H mm            |
| (4) ACTIVE AREA       | ----- | 95.98W * 71.98H mm           |
| (5) DOT SIZE          | ----- | 0.28W * 0.28H mm             |
| (6) DOT PITCH         | ----- | 0.30W * 0.30 mm              |
| (7) LCD TYPE          | ----- | FSTN , TRANSFLECTIVE         |
| (8) DRIVING METHOD    | ----- | 1 / 240 DUTY MULTIPLEX DRIVE |
| (9) VIEWING DIRECTION | ----- | 6 O'CLOCK                    |
| (10) 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	
POWER SUPPLY FOR LCD DRIVING	VDD – VEE	0	30.0	V	
INPUT VOLTAGE	VI	VSS	VDD	V	
STATIC ELECTRICITY	—	—	100	V	NOTE (1)

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	-20°C	70°C	30°C	80°C	NOTE (1) , (3)
HUMIDITY	NOTE (2)		NOTE (2)		WITHOUT CONDENSATION
VIBRATION	—	2.45m /s <sup>2</sup> ( 0.25G )	—	11.76m /s <sup>2</sup> ( 1.2G )	10~100 Hz XYZ DIRECTIONS 1 Hr . EACH
SHOCK	—	29.4m /s <sup>2</sup> ( 3G )	—	490.0m /s <sup>2</sup> ( 50G )	10 m SECONDS 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 < 48hrs

80°C : WILL BE < 168hrs

4. ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	CONDITION	Ta=25°C			UNIT
			MIN.	TYP.	MAX.	
POWER SUPPLY VOLTAGE FOR LOGIC	VDD – VSS	—	4.75	5.0	5.25	V
INPUT VOLTAGE NOTE (1)	VIH	H LEVEL	0.5*VDD	—	—	V
	VIL	L LEVEL	—	—	0.2*VDD	V
OUTPUT VOLTAGE NOTE (1)	VOH	H LEVEL	2.4	—	—	V
	VOL	L LEVEL	—	—	VSS+0.4	V
POWER SUPPLY CURRENT FOR LOGIC NOTE (2)	IDD	VDD – VSS = 5.0 V VDD – VO = 23.5 V	—	40	70	mA
RECOMMENDED LCD DRIVING VOLTAGE	VDD – VO θy = -10°, θx = 0° DUTY = 1/240	Ta = -20 °C	24.6	25.6	26.6	V
		Ta = 25 °C	21.5	22.5	23.5	V
		Ta = 70 °C	16.4	17.4	18.4	V
CLOCK OSCILLATION FREQUENCY	fOSC	—	—	8	—	MHz
LED FORWARD VOLTAGE	VLED – VLSS	—	—	5.0	—	V
LED FORWARD CURRENT	IF	VLED-VLSS=5.0V	—	160	—	mA

NOTE (1): APPLIED TO TERMINALS DO TO D7, AO,  $\overline{CS}$ , R/ $\overline{W}$ ( $\overline{WR}$ ), E( $\overline{RD}$ ),  $\overline{RST}$ , SEL1 .

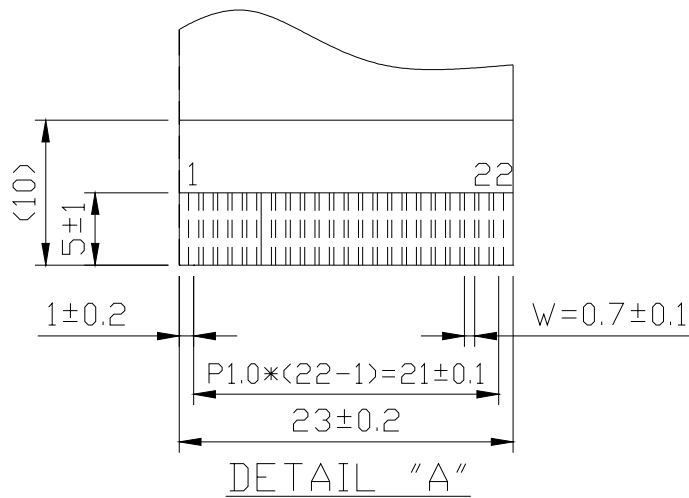
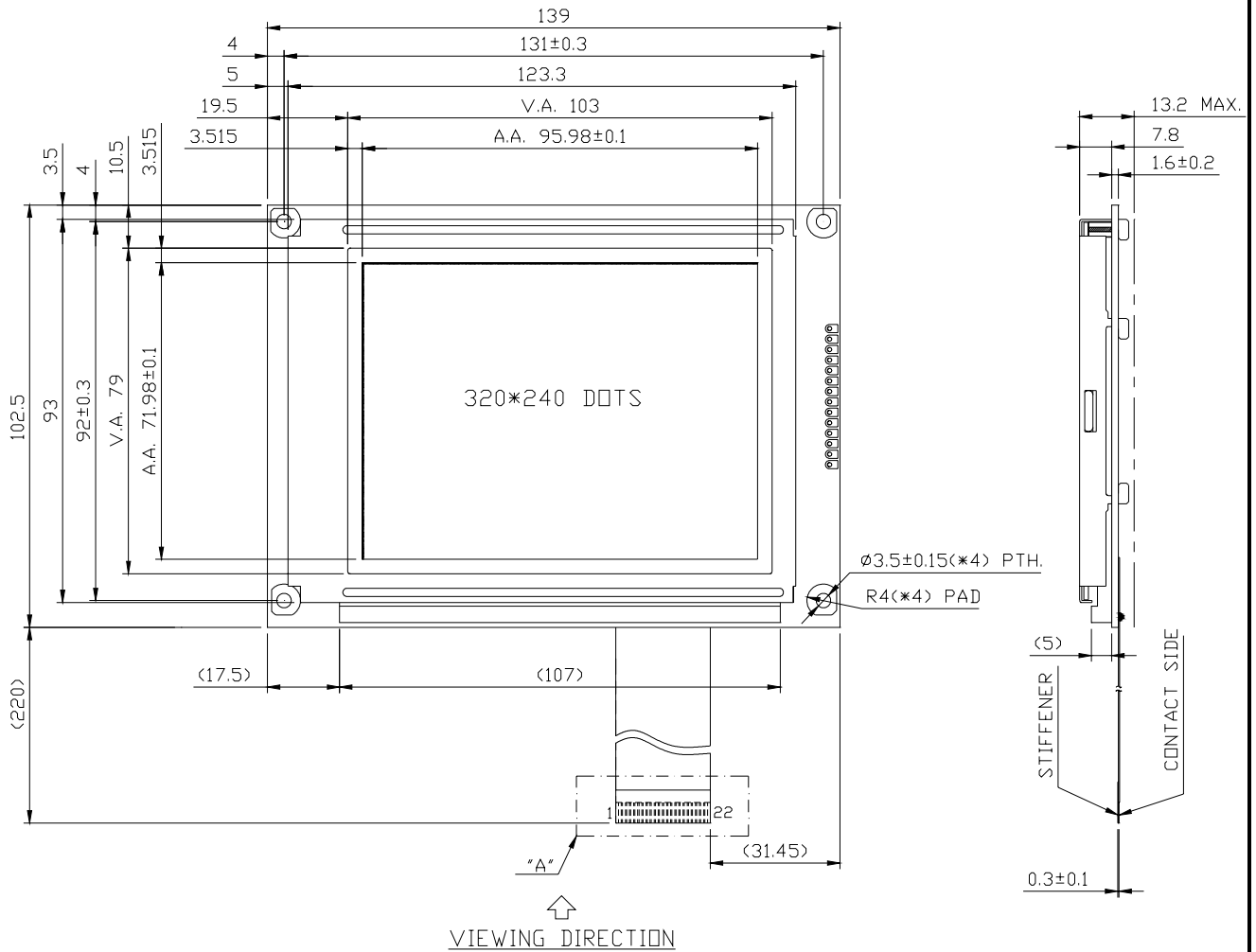
NOTE (2): THE DISPLAY PATTERN IS ALL “ON” OR “OFF”.

5. OPTICAL CHARACTERISTICS

I T E M	SYMBOL	CONDITION		MIN.	TYP.	MAX.
VIEWING AREA	$\theta_{y+}$	$K \geq 2.0$	$\theta_x=0^\circ$	36	43	—
	$\theta_{y-}$			41	48	—
	$\theta_{x+}$		$\theta_y=0^\circ$	26	33	—
	$\theta_{x-}$			26	33	—
CONTRAST RATIO	K	$\theta_{y-}=0, \theta_x=0$		2.7	4.1	—
RESPONSE TIME	tr(rise)	$\theta_{y-}=0$ $\theta_x=0$	Ta=-10°C	—	7230	9400
			Ta=25°C	—	280	360
			Ta=60°C	—	140	180
	tf(fall)		Ta=-10°C	—	4060	5280
			Ta=25°C	—	190	250
			Ta=60°C	—	100	130

NOTE (1) : PLEASE REFER TO :  
CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS.  
E U - 0 0 2 B

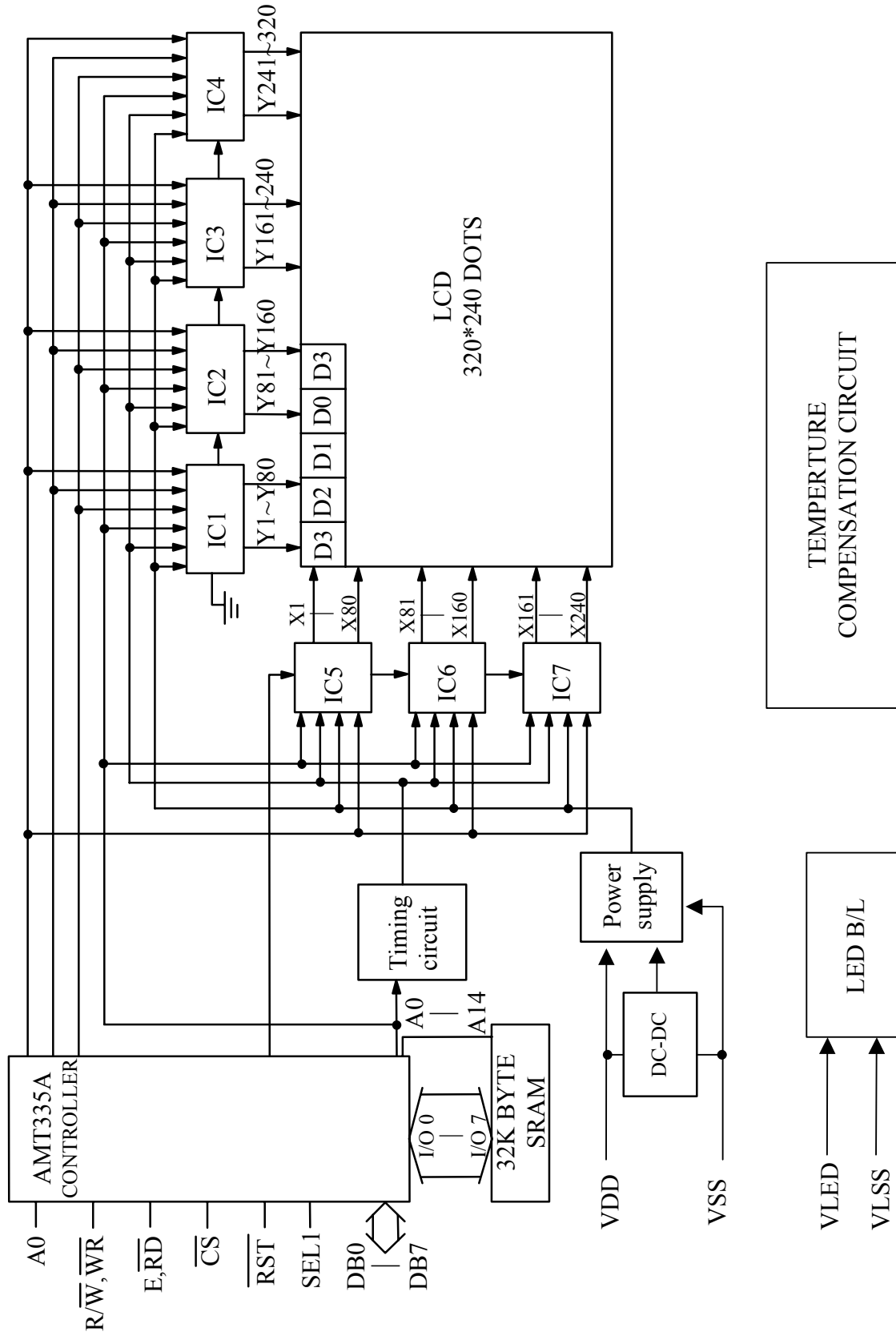
6. OUTLINE DIMENSIONS



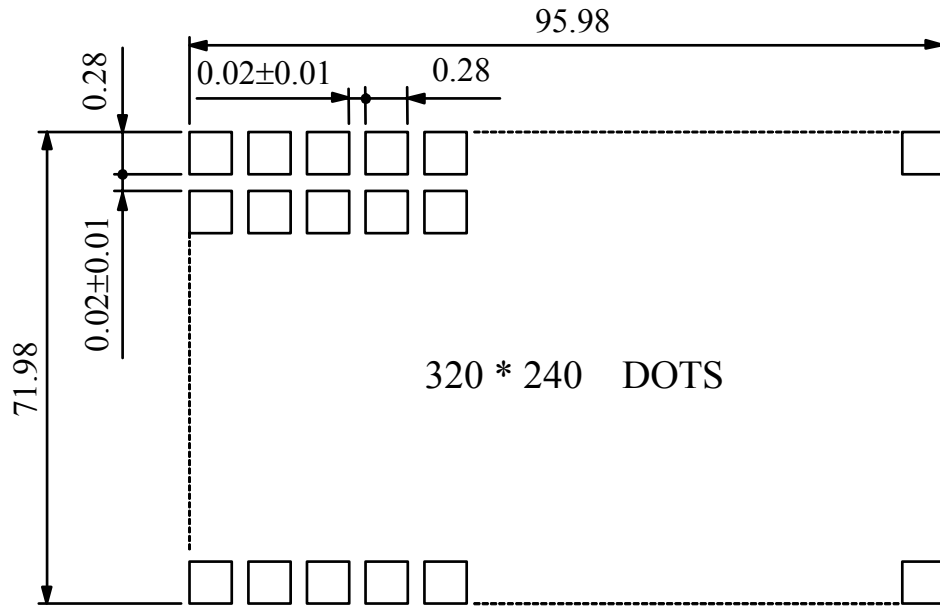
UNIT : mm  
SCALE : NTS  
NOT SPECIFIED TOLERANCE IS ± 0.5



7. BLOCK DIAGRAM



8. DETAIL DRAWING OF DOT MATRIX



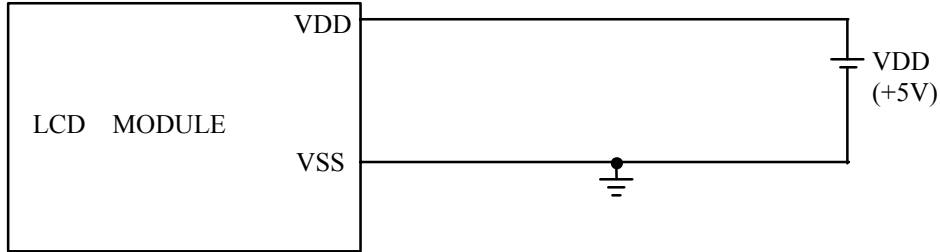
UNIT: mm  
SCALE : NTS  
NOT SPECIFIED TOLERANCE IS ± 0.1

9. INTERFACE SIGNALS

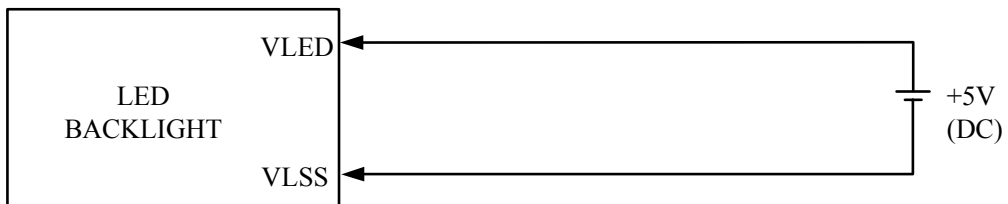
PIN NO.	SYMBOL	LEVEL	FUNCTION																				
1	VSS	—	GROUND																				
2	VDD	—	POWER SUPPLY FOR LOGIC CIRCUIT																				
3	NC	—	NOT USE.																				
4	A0	—	8080 FAMILY INTERFACE																				
			<table border="1"> <thead> <tr> <th>AO</th> <th><math>\overline{RD}</math></th> <th><math>\overline{WR}</math></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
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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	VLED	—	POWER SUPPLY FOR LED BACKLIGHT ( A )																				
22	VLSS	—	POWER SUPPLY FOR LED BACKLIGHT ( K )																				
23	A	—	BACKLIGHT (A)																				
24	K	—	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

