EXAMINED BY : Vincent Wu	EMERGING DISPLAY TECHNOLOGIES CORPORATION	FILE NO . CAS-51456
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		VERSION : 4

CUSTOMER ACCEPTANCE SPECIFICATIONS

MODEL NO . :

EW50793FLWP

(RoHS)

FOR MESSRS :

CUSTOMER'S APPROVAL

DATE :

BY :

RECORDS OF REVISION

DOC . FIRST ISSUE

AUG.18, 2006

DATE	REVISED PAGE NO.	SUMMARY
SEP.21, 2006	2	3.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS . PARAMETER / SYMBOL / MIN. / MAX. / UNIT / REMARK POWER SUPPLY FOR LOGIC / VDD – VSS / 0 / 4.0 / V / ↓ PARAMETER / SYMBOL / MIN. / MAX. / UNIT / REMARK POWER SUPPLY FOR LOGIC / VDD – VSS / 0 / 6.0 / V /
APR.19,2007	4	5 .OPTICAL CHARACTERISTICS ITEM / SYMBOL / CONDITION / MIN. / TYP. / MAX. / UNIT / NOTE THE BRIGHTNESS OF MODULE / L / VLED-VSS=5.0V / 8 / 10 / — / cd / m^2 / 1,2 ↓ ITEM / SYMBOL / CONDITION / MIN. / TYP. / MAX. / UNIT / NOTE THE BRIGHTNESS OF MODULE / L / VLED-VSS=5.0V / 14 / 16 / — / cd / m^2 / 1,2
JUL.21,2008	4	5 .OPTICAL CHARACTERISTICS THE BRIGHTNESS OF MODULE / L / VLED-VSS=5.0V / 14 / 16 / — / cd / m^2 / 1,2 ↓ THE BRIGHTNESS OF MODULE / L / VLED-VLSS=5.0V DISPLAY ALL "OFF" / 20 / 25 / — / cd / m^2 / 1,2

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1. GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS
PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

EU-002B

1.2 APPLICATION NOTES FOR CONTROLLER / DRIVER :
PLEASE REFER TO :

EPSON - S1D13700

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	96.3W * 66.6H * 9.2D (max.) mm
(3)	EFFECTIVE AREA	78.8W * 59.6H mm
(4)	ACTIVE AREA	76.79W * 57.59H mm
(5)	DOT SIZE	0.23W * 0.23H mm
(6)	DOT PITCH	0.24W * 0.24H mm
(7)	LCD TYPE	FSTN , POSITIVE , WHITE , TRANSFLECTIVE , PG POLARIZER FRONT POLOARIZER：ANTIGLARE
(8)	DRIVING METHOD	1 / 242 DUTY MULTIPLEX DRIVE
(9)	BACKLIGHT	LED , COLOR : WHITE
(10)	VIEWING DIRECTION	6 O'CLOCK

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 BACK-LIGHT	VLED – VLSS	—	5	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) , (2)
HUMIDITY	NOTE (3)		NOTE (3)		WITHOUT CONDENSATION
VIBRATION	—	2.45m /s^2 (0.25G)	—	11.76m /s^2 (1.2G)	10~100 Hz XYZ DIRECTIONS 1 Hr. EACH
SHOCK	—	29.4 m /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 AT -30°C : WILL BE < 48HRS.
80°C : WILL BE < 168HRS.

NOTE (3) : Ta ≤ 60°C : 85%RH MAX. (96HRS MAX.)
Ta < 60°C : ABSOLUTE HUMIDITY MUST BE LOWER THAN THE HUMIDITY OF 85% AT 60°C(96HRS MAX.)

4. ELECTRICAL CHARACTERISTICS

Ta = 25 °C VDD–VSS = 5.0 V

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY VOLTAGE FOR LOGIC	VDD – VSS	—	3.3	5.0	5.5	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. I_{OH}=-8mA	VDD–0.4	—	—	V
	VOL	VDD=MIN. I_{OL}=8mA	—	—	0.4	V
POWER SUPPLY CURRENT FOR LOGIC NOTE (2)	IDD	VDD – VSS = 5.0 V VLCD – VSS = 21.7 V	—	60.0	80.0	mA
RECOMMENDED LCD DRIVING VOLTAGE	VOP θy- = 10° , θx = 0° DUTY = 1 / 242	Ta = -20 °C NOTE(3)	21.5	22.5	23.5	V
		Ta = 25 °C NOTE(4)	20.7	21.7	22.7	V
		Ta = 70 °C NOTE(4)	19.9	20.9	21.9	V
CLOCK OSCILLATION FREQUENCY	f OSC	—	—	32	—	MHz
POWER SUPPLY FOR LED BACK - LIGHT	VLED – VLSS	IF = 75 mA	—	5.0	—	V

NOTE (1) : APPLIED TO TERMINALS D0 TO D7 , A0 , $\overline{CS}$, $\overline{WR}$(R / $\overline{W}$), $\overline{RD}$(E) , SEL1 .

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

NOTE (3) : THIS DISPLAY PATTERN IS BAR (ONLY , Ta=-20°C)

NOTE (4) : THIS DISPLAY PATTERN IS ALL "Q".

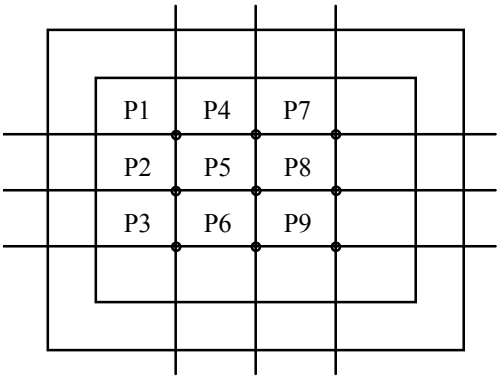
5 . OPTICAL CHARACTERISTICS

Ta = 25 °C VDD–VSS = 5.0 V

I T E M	SYMBOL	CONDITION		MIN.	TYP.	MAX.	UNIT	NOTE
VIEWING ANGLE	θy+	K ≥ 2.0	θx = 0°	45	50	—	deg.	1
	θy-			45	50	—		
	θx+		θy = 0°	40	45	—	deg.	1
	θx-			30	35	—		
CONTRAST RATIO	K	θy- = 10° θx = 0°		1.5	5.9	—	—	1
RESPONSE TIME	t r (rise)	θy- = 10° θx = 0°	Ta=-20°C	—	4500	5850	msec	1
			Ta=25°C		300	390		
			Ta=70°C		70	91		
	t f (fall)	θy- = 10° θx = 0°	Ta=-20°C	—	3000	3900	msec	1
			Ta=25°C		190	247		
			Ta=70°C		90	117		
THE BRIGHTNESS OF MODULE	L	VLED-VLSS=5.0V DISPLAY ALL " OFF"		20	25	—	cd / m^2	1,2
THE UNIFORMITY OF MODULE	—			—	—	30	%	2,3

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

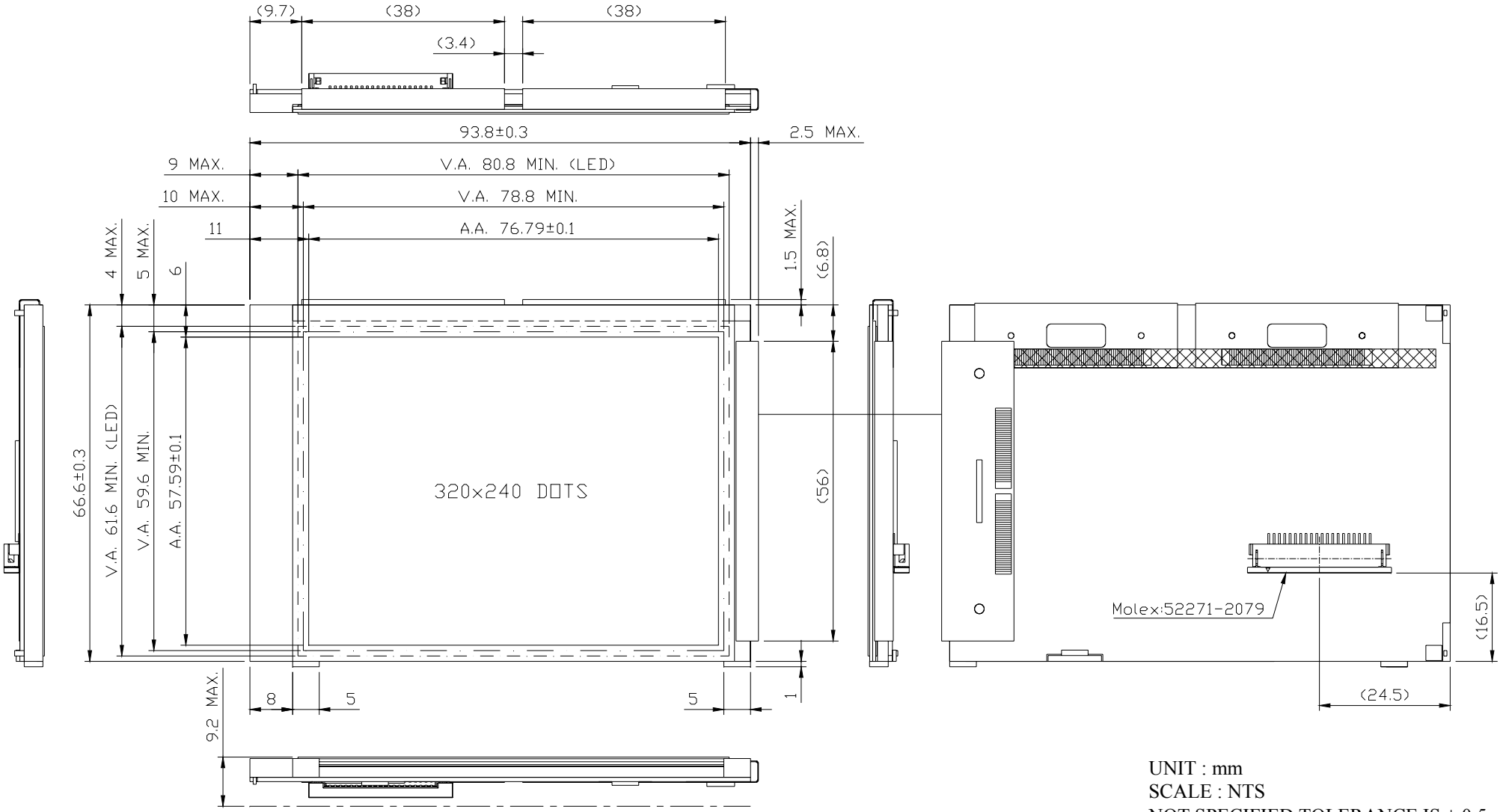
NOTE (2) : MEASUREMENT OF THE FOLLOWING 9 PLACES ON THE DISPLAY.
DEFINITION OF THE BRIGHTNESS TOLERANCE .



NOTE (3) : BRIGHTNESS UNIFORMITY IS DEFINED AS FOLLOWING

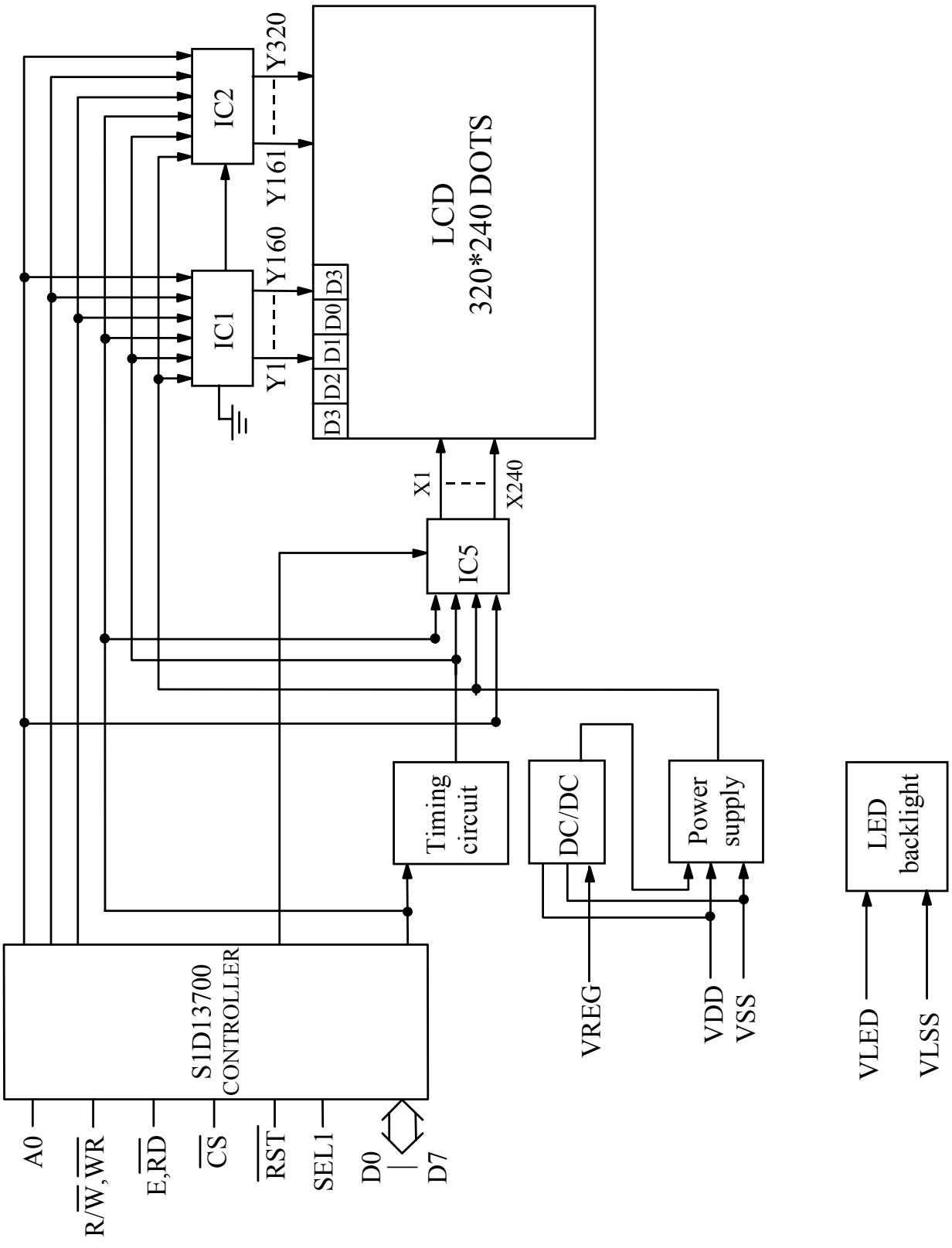
$$\Sigma_X = \left[\frac{\text{(MAXIMUN BRIGHTNESS - MINIMUN BRIGHTNESS)}}{\text{AVERAGE BRIGHTNESS}} \right] \times 100\%$$

6 . OUTLINE DIMENSIONS

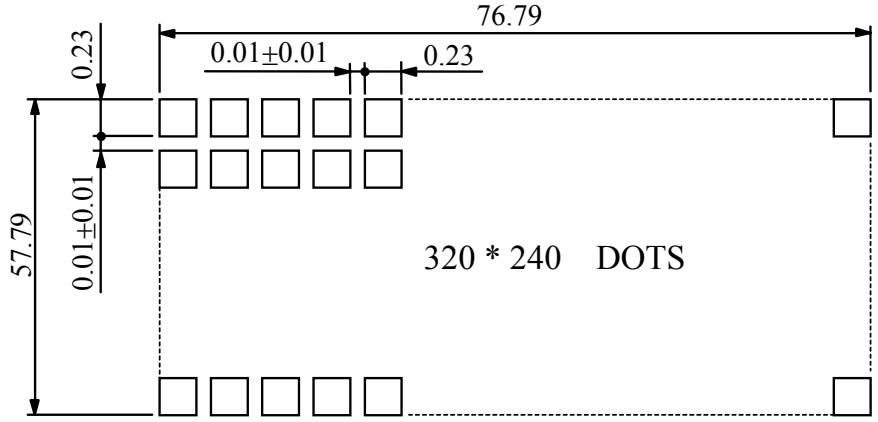


UNIT : mm
SCALE : NTS
NOT SPECIFIED TOLERANCE IS ± 0.5

7. BLOCK DIAGRAM



8 . DETAIL DRAWING OF DOT MATRIX



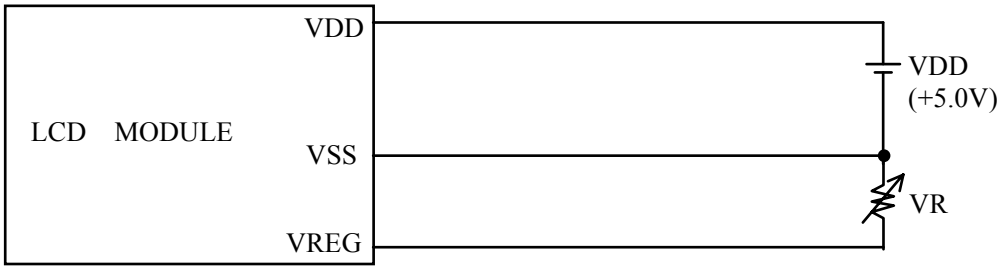
UNIT : mm
SCALE : NTS
NOT SPECIFIED TOLERANCE IS ± 0.1

9 . INTERFACE SIGNALS

PIN NO	SYMBOL	LEVEL	FUNCTION
1	VSS	—	GROUND
2	VDD	—	POWER SUPPLY FOR LOGIC CIRCUIT
3	N.C	—	N.C.
4	A0	—	8080 FAMILY INTERFACE 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 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	VREG	—	CONNECTION RESISTOR TO GND (FOR CONTRAST ADJUST)
18	SEL1	H/L	8080 OR 6800 FAMILY INTERFACE SELECT , H:6800 , L:8080
19	VLED	—	POWER SUPPLY FOR LED BACK – LIGHT
20	VLSS	—	POWER SUPPLY FOR LED BACK – LIGHT

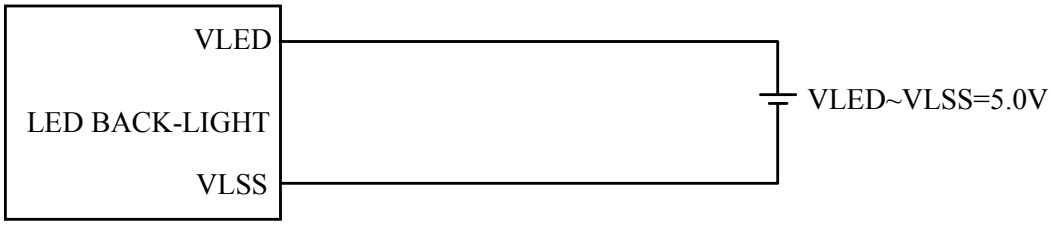
10. POWER SUPPLY

10.1 POWER SUPPLY FOR LCM



VR: 20KΩ

10.2 POWER SUPPLY FOR LED BACK - LIGHT



10.3 TIMING OF POWER SUPPLY AND INTERFACE SIGNAL