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The LCD(M) Specialist

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PART NO.: PMC1602J-SYL

FOR MESSRS.: _____

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ACCEPTED BY: PROPOSED BY :

RECORD OF REVISION

DATE	PAGE	SUMMARY
2002/01/24	6/7	ADD THE PIN.17 AND PIN.18
	7/7	MODIFY 10.POWER SUPPLY FOR LCM

3. General specifications

3.1 General specifications

PLEASE REFER TO:

“CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS (MS-10-12780)”.

3.2 This individual specification is prior to general specifications

4. Mechanical data

- (1) NUMBER OF CHARACTER ----- 16 CH * 2 LINE
- (2) MODULE SIZE ----- 122.0 W * 44.0 H * 15.0 T (max) mm
- (3) EFFECTIVE AREA ----- 99.0 W * 24.0 H mm
- (4) CHARACTER PATTERN ----- 5 * 7 DOTS + CURSOR
- (5) CHARACTER SIZE ----- 4.84 W * 8.06 H mm
- (6) CHARACTER PITCH ----- 6.0 mm
- (7) DOT SIZE ----- 0.92 W * 1.10 H mm
- (8) DOT PITCH ----- 0.98 W * 1.16 H mm
- (9) VIEWING DIRECTION ----- 6 O’CLOCK
- (10) LCD TYPE ----- STN. YELLOW-GREEN.TRANSFLECTIVE.
- (11) LED COLOR ----- YELLOW-GREEN

5. Absolute maximum ratings

5.1 Electrical absolute maximum ratings

<i>I T E M</i>	<i>SYMBOL</i>	<i>MIN.</i>	<i>MAX.</i>	<i>UNIT</i>	<i>COMMENT</i>
POWER SUPPLY FOR LOGIC	V _{DD} -V _{SS}	0	6.0	V	-----
INPUT VOLTAGE	V _I	V _{SS}	V _{DD}	V	-----
STATIC ELECTRICITY	-----	-----	100	V	NOTE (1)
POWER SUPPLY FOR LED	V _{LED}	-----	6.0	V	-----

NOTE (1): ELECTRO-STATIC DISCHARGE RESISTANCE IS TESTED BY CHARGING A 200PF CAPACITOR AND DISCHARGING IT BY CONTACT WITH A INTERFACE CONNECTOR PIN.

5.2 Environmental absolute maximum ratings

<i>I T E M</i>	<i>OPERATING</i>		<i>STORAGE</i>		<i>COMMENT</i>
	<i>MIN.</i>	<i>MAX.</i>	<i>MIN.</i>	<i>MAX.</i>	
AMBIENT TEMPERATURE	0	50	-20	70	-----
HUMIDITY	NOTE (2)		NOTE (2)		NO CONDENSATION
VIBRATION NOTE (3)	-----	0.5G	-----	2G	10~300Hz XYZ DIRECTIONS 1 Hr EACH
SHOCK NOTE (3)	-----	3G	-----	50G	10 msec XYZ DIRECTIONS 1 TIME EACH
CORROSIVE GAS	NOT ACCEPTABLE		NOT ACCEPTABLE		-----

NOTE (2): Ta 50 : 90% RH MAX.

Ta > 50 : ABSOLUTE HUMIDITY MUST BE LOWER THAN THE HUMIDITY OF 90% RH AT 50 . (80% RH AT 60)

NOTE (3): 1G = 9.8 m/s²

6. Electrical characteristics

Ta = 25

V_{DD} = 5.0 ± 0.25 V

<i>I T E M</i>	<i>SYMBOL</i>	<i>CONDITION</i>	<i>MIN.</i>	<i>TYP.</i>	<i>MAX.</i>	<i>UNIT</i>	
INPUT VOLTAGE	V _{IH}	-----	2.2	-----	V _{DD}	V	
	V _{IL}		V _{SS}	-----	0.6	V	
OUTPUT VOLTAGE (H LEVEL)	V _{OH}	-I _{OH} = 0.2 mA	2.4	-----	-----	V	
	V _{OL}	I _{OL} = 1.2 mA	-----	-----	0.4	V	
POWER SUPPLY CURRENT	I _{DD}	V _{DD} = 5.0 V	-----	1.0	2.0	mA	
RECOMMENDED LCD DRIVING VOLTAGE , NOTE (1)	V _{DD-Vo}	DUTY =1/16 =10° =0°	Ta = 0	-----	4.7	-----	V
			Ta = 25	-----	4.5	-----	V
			Ta = 50	-----	4.3	-----	V
POWER SUPPLY CURRENT FOR LED	I _{LED}	V _{LED} = 5.0V	-----	170	270	mA	

NOTE (1): RECOMMENDED LCD DRIVING VOLTAGE MAY FLUCTUATE ABOUT ± 0.5V BY EACH MODULE.

7. Optical characteristics

Ta = 25

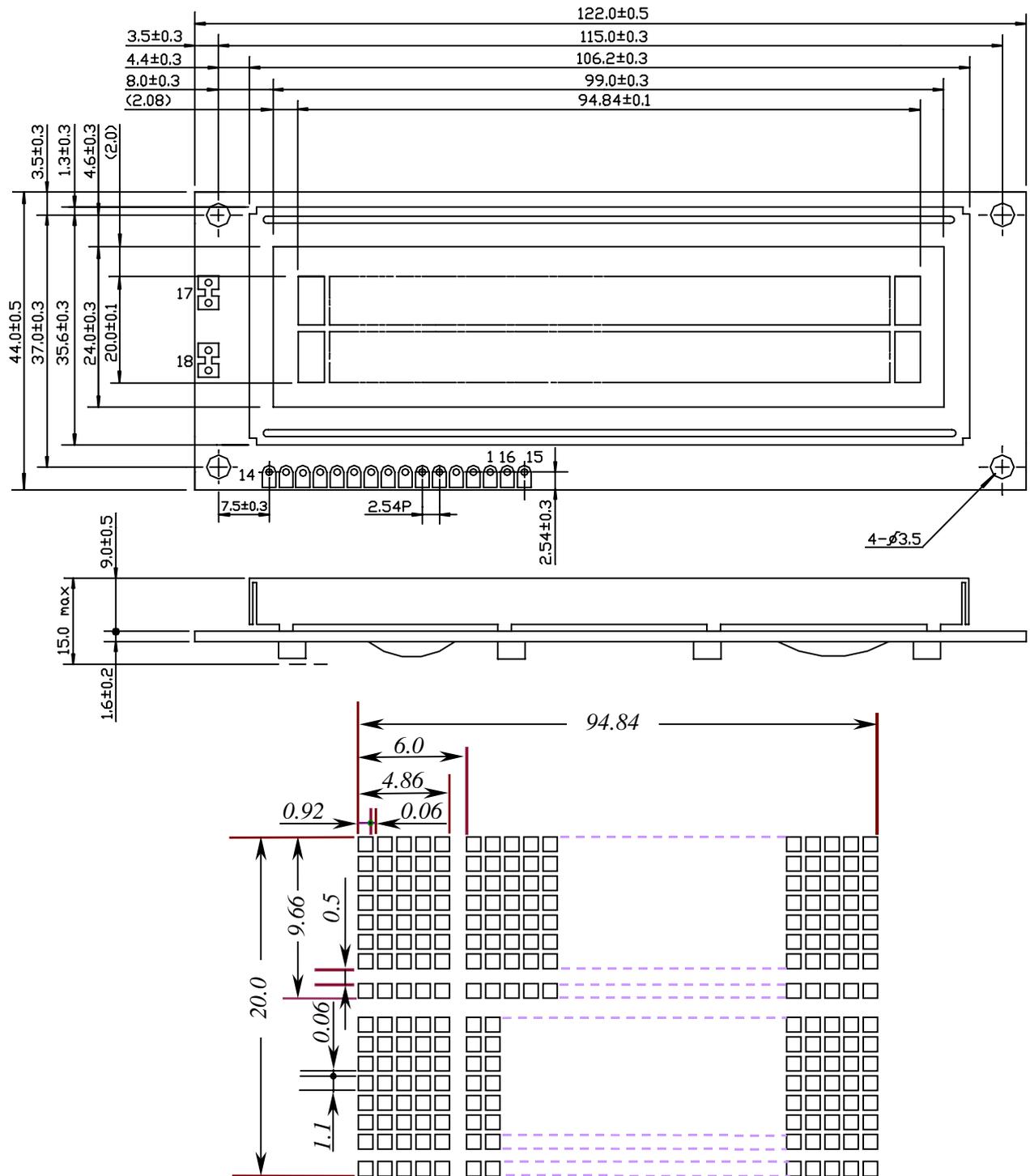
V_{DD} = 5.0V

<i>I T E M</i>	<i>SYMBOL</i>	<i>CONDITION</i>	<i>MIN.</i>	<i>TYP.</i>	<i>MAX.</i>	<i>UNIT</i>	<i>NOTE</i>
VIEWING ANGLE	2- 1	K = 2.0	30	40	-----	deg.	1
CONTRAST RATIO	K	= 10° = 0°	3.0	4.0	-----	-----	1
RESPONSE TIME	tr (rise)	= 10° = 0°	-----	200	350	ms	1
	tf (fall)	= 10° = 0°	-----	300	400	ms	1
BRIGHTNESS FOR LED BACKLIGHT	B	= 0° = 0°	5.0	-----	-----	cd/m ²	1,2

NOTE (1): SEE CUSTOMER ACCEPTANCE STANDARD SPECIFICATION FOR DEFINITION OF OPTICAL CHARACTERISTICS.

NOTE (2): UNDER NORMAL TEMPERATURE AND HUMIDITY IN A DARK ROOM.

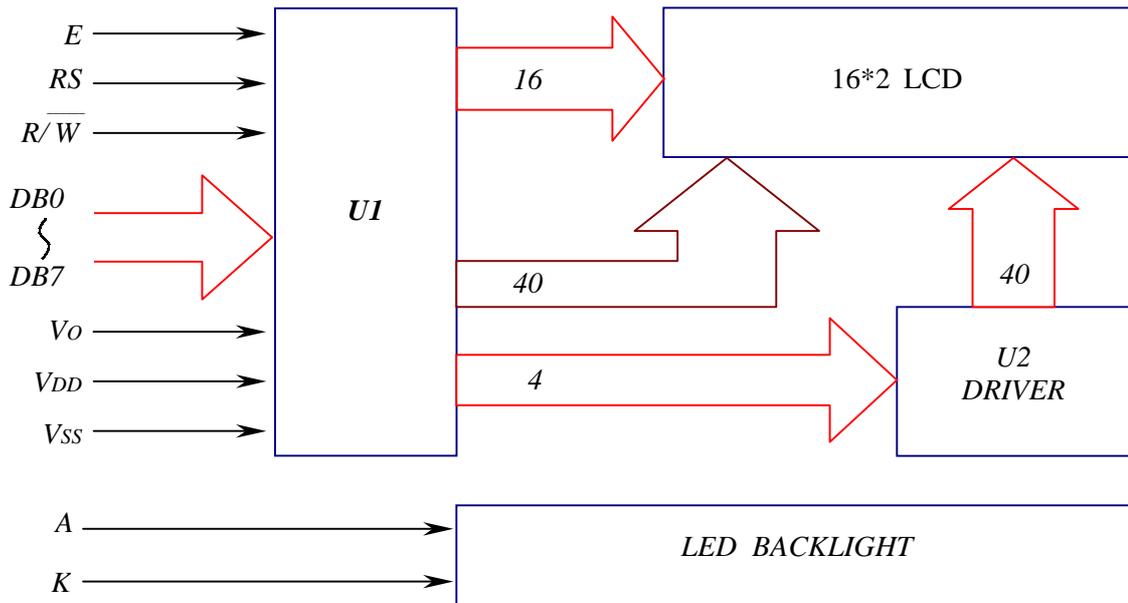
8. Outline dimension



Interface pin connection

PIN NO.	1	2	3	4	5	6	7	8	9
SYMBOL	V _{SS}	V _{DD}	V _O	RS	R/ \bar{W}	E	DB0	DB1	DB2
PIN NO.	10	11	12	13	14	15	16	\triangle 17	\triangle 18
SYMBOL	DB3	DB4	DB5	DB6	DB7	LED(+)	LED(-)	A(+)	K(-)

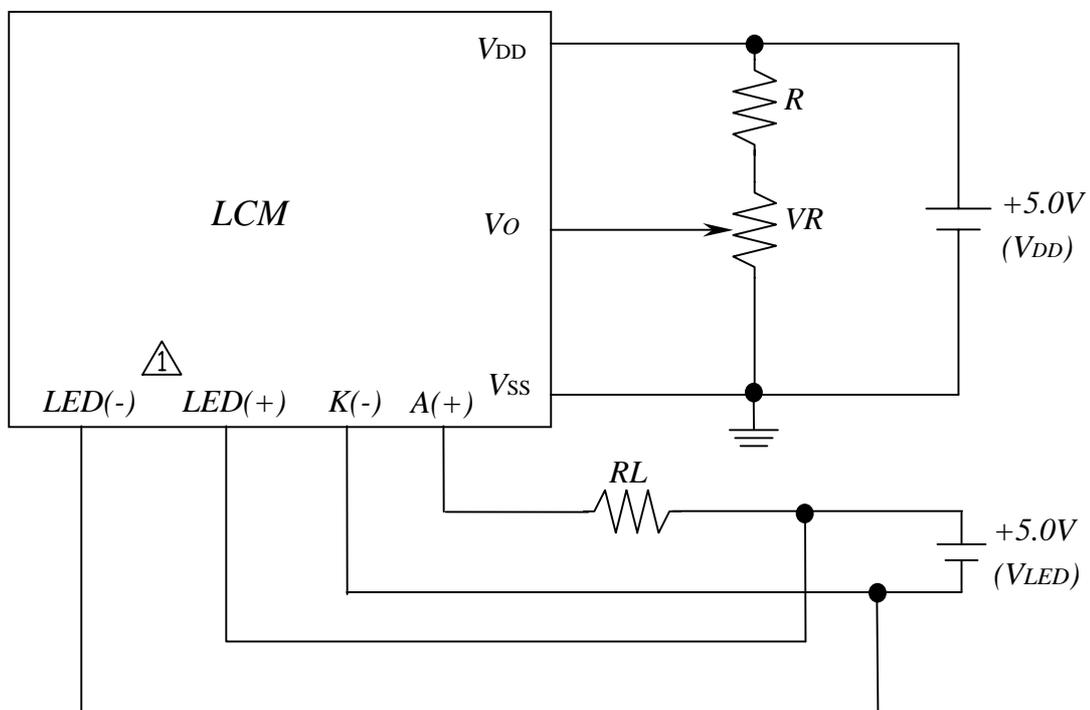
9. Block diagram



Display data address charts

Character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LINE 1	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
LINE 2	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F

10. Power supply for LCM



RECOMMENDED RESISTOR R: $V_{DD}-V_O \geq 1.5V$
 $V_{DD}-V_O$: LCD DRIVING VOLTAGE
 VR : 10K Ω ~20K Ω , RL 3.7 Ω