



PALM TECHNOLOGY CO., LTD.

The LCD(M) Specialist

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PART NO. : PMC1601A-SYL

FOR MESSRS. : _____

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ACCEPTED BY : _____ PROPOSED BY : _____

RECORD OF REVISION

DATE	PAGE	SUMMARY

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 CHARACTERS -----16 CH * 1 LINE
- (2) MODULE SIZE-----80.0 W * 36.0 H * 15.0 T (max) mm
- (3) EFFECTIVE AREA -----64.5 W * 16.0 H mm
- (4) CHARACTER PATTERN-----5 * 7 DOTS + CURSOR
- (5) CHARACTER SIZE -----3.07 W * 5.73 H mm
- (6) CHARACTER PITCH -----3.77 mm
- (7) DOT SIZE-----0.55 W * 0.75 H mm
- (8) DOT PITCH -----0.63 W * 0.83 H mm
- (9) VIEWING DIRECTION-----6 O’CLOCK
- (10) LCD TYPE-----STN.YELLOW-GREEN.TRANSFLECTIV.
- (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)

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°C	50°C	-20°C	70°C	-----
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°C: 90% RH MAX.

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

NOTE (3): 1G = 9.8 m/s²

6. Electrical characteristics

$T_a = 25^\circ\text{C}$ $V_{DD} = 5.0 \pm 0.25 \text{ V}$

<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	V_{OH}	$I_{OH} = -0.2 \text{ mA}$	2.4	-----	-----	V	
	V_{OL}	$I_{OL} = 1.2 \text{ mA}$	-----	-----	0.4	V	
POWER SUPPLY CURRENT	I_{DD}	$V_{DD} = 5.0\text{V}$	-----	1.0	1.5	mA	
RECOMMENDED LCD DRIVING VOLTAGE	$V_{DD}-V_O$	DUTY= 1/16. $\Phi=10^\circ$ $\theta=0^\circ$	$T_a = 0^\circ\text{C}$	-----	4.9	-----	V
			$T_a = 25^\circ\text{C}$	-----	4.5	-----	V
			$T_a = 50^\circ\text{C}$	-----	4.1	-----	V
POWER SUPPLY CURRENT FOR LED	I_{LED}	$V_{DD} = 5.0\text{V}$	-----	120	150	mA	

NOTE (1): RECOMMENDED LCD DRIVING VOLTAGE MAY FLUCTUATE ABOUT $\pm 0.5\text{V}$ BY EACH MODULE.

7. Optical characteristics

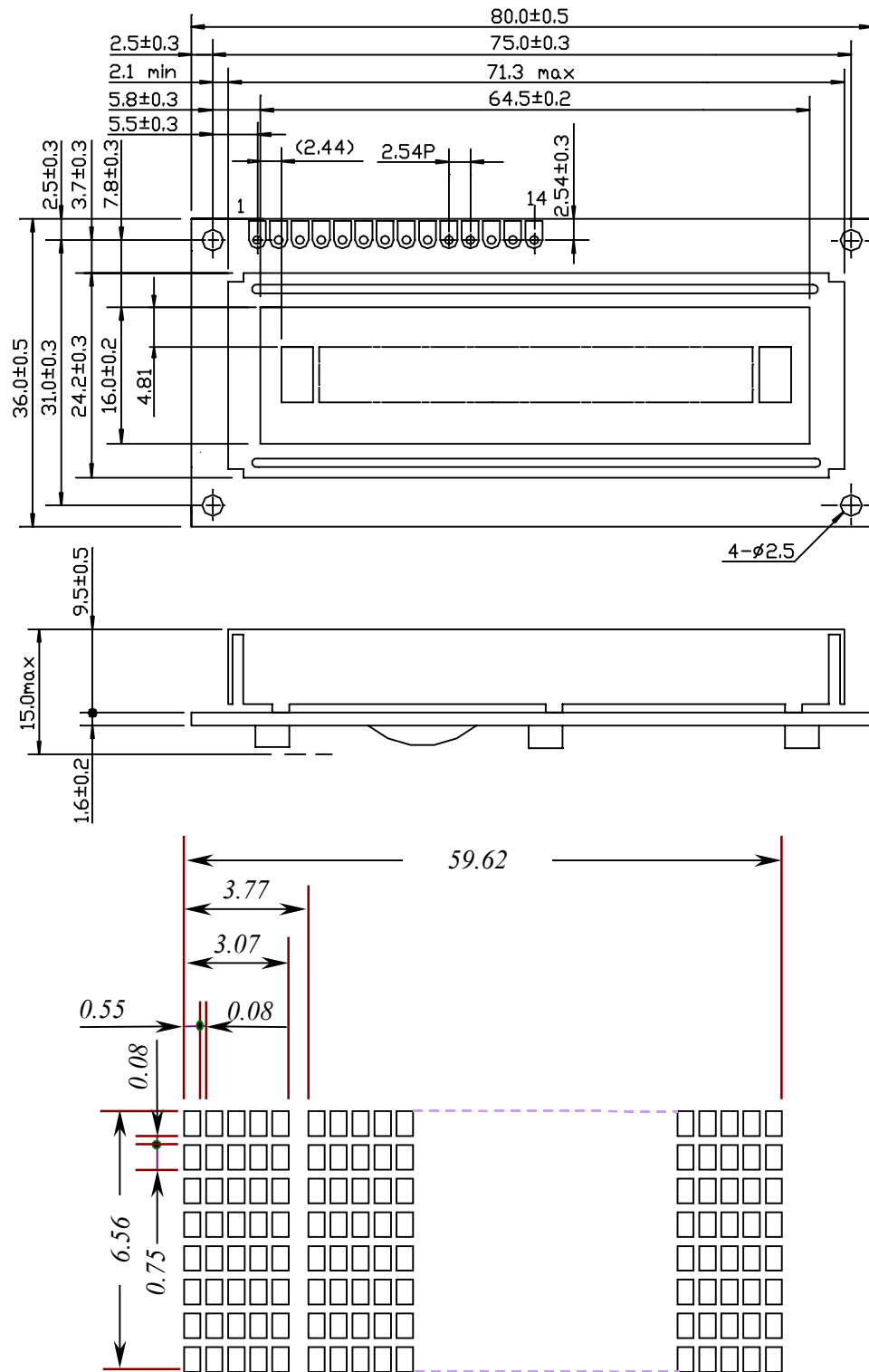
$T_a = 25^\circ\text{C}$ $V_{DD} = 5.0\text{V}$

<i>I T E M</i>	<i>SYMBOL</i>	<i>CONDITION</i>	<i>MIN.</i>	<i>TYP.</i>	<i>MAX.</i>	<i>UNIT</i>	<i>NOTE</i>
VIEWING ANGLE	$\Phi_2-\Phi_1$	$K = 2.0$	30	40	-----	deg.	1
CONTRAST RATIO	K	$\Phi = 10^\circ$ $\theta = 0^\circ$	3	4	-----	-----	1
RESPONSE TIME	tr (rise)	$\Phi = 10^\circ$ $\theta = 0^\circ$	-----	200	350	ms	1
	tf (fall)	$\Phi = 10^\circ$ $\theta = 0^\circ$	-----	300	400	ms	1
BRIGHTNESS FOR LED BACKLIGHT	B	$\Phi = 0^\circ$ $\theta = 0^\circ$	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.

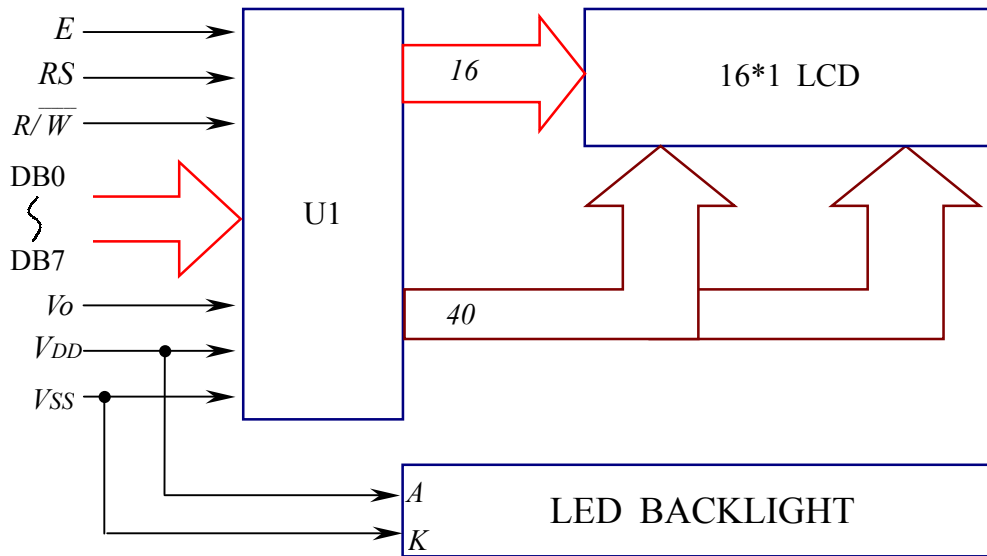
8. Outline dimension



Interface pin connection

PIN NO.	1	2	3	4	5	6	7
SYMBOL	V _{SS}	V _{DD}	V _O	RS	R/ \bar{W}	E	DB0
PIN NO.	8	9	10	11	12	13	14
SYMBOL	DB1	DB2	DB3	DB4	DB5	DB6	DB7

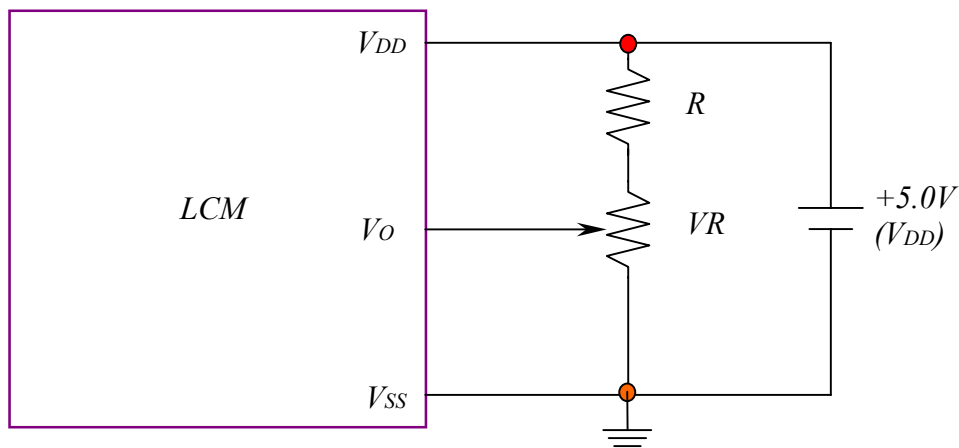
9. Block diagram



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

10. Power supply for LCM



RECOMMENDED RESISTOR R: $V_{DD}-V_{O} \geq 1.5V$

$V_{DD}-V_{O}$: LCD DRIVING VOLTAGE

VR: $10K\Omega \sim 20K\Omega$