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PART NO. : MG2406B-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-10-79810)”.

3.2 This individual specification is prior to general specifications

4. Mechanical data

- (1) NUMBER OF DOT ----- 240 W* 64 H DOTS
- (2) MODULE SIZE----- 140.0 W * 62.0 H * 15.0 T (Max) mm
- (3) EFFECTIVE AREA ----- 116.0 W * 37.0 H mm
- (4) ACTIVE AREA----- 105.57 W * 31.97 H mm
- (5) DOT SIZE ----- 0.41 W * 0.47 H mm
- (6) DOT PITCH----- 0.44 W * 0.50 H mm
- (7) VIEWING DIRECTION ----- 6 O' CLOCK
- (8) LCD TYPE ----- STN.YELLOW-GREEN.TRANSFLECTIVE
- (9) 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°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>	
POWER SUPPLY VOLTAGE FOR CIRCUIT	$V_{DD}-V_{SS}$	-----	4.75	5.0	5.25	V	
INPUT VOLTAGE1	V_{IH}	H LEVEL	2.2	-----	V_{DD}	V	
	V_{IL}	L LEVEL	0	-----	0.8	V	
OUTPUT VOLTAGE	V_{OH}	$I_{OH} = -0.6\text{ mA}$	2.4	-----	V_{DD}	V	
	V_{OL}	$I_{OL} = 0.6\text{ mA}$	0	-----	0.4	V	
POWER SUPPLY CURRENT	I_{DD}	$V_{DD}-V_{SS} = 5.0\text{ V}$	-----	30.0	35.0	mA	
LCD DISPLAY DUTY RATIO	DUTY	-----	-----	1/64	-----	-----	
RECOMMENDED LCD DRIVING VOLTAGE NOTE(1)	$V_{DD}-V_O$	$=10^\circ$ $=0^\circ$	$T_a=0^\circ\text{C}$	-----	9.2	-----	V
			$T_a=25^\circ\text{C}$	-----	8.8	-----	V
			$T_a=50^\circ\text{C}$	-----	8.4	-----	V
THE BRIGHTNESS OF BACKLIGHTING SOURCE	I_{LED}	$V_{LED} = 5.0\text{ V}$	-----	230	350	mA	

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

7. Optical characteristics

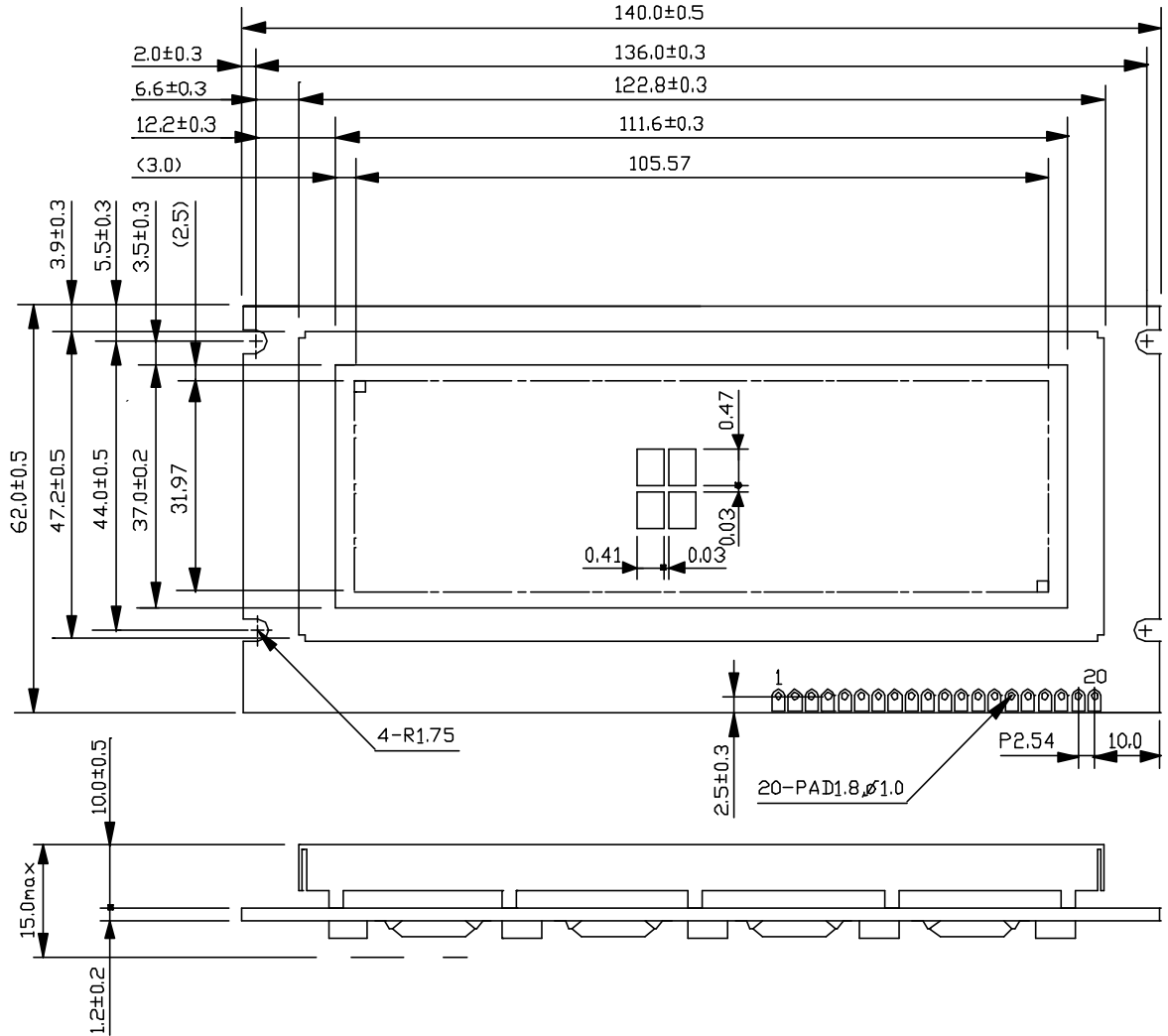
$T_a = 25^\circ\text{C}$ $V_{DD} = 5.0\text{V}$

<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 ANGEL	$\Phi_2-\Phi_1$	$K = 2.0$	30	40	-----	deg.	1
CONTRAST RATIO	K	$\Phi = 10^\circ$ $\theta = 0^\circ$	3.0	4.0	-----	-----	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	2,3

NOTE (2): SEE CUSTOMER ACCEPTANCE STANDARD SPECIFICATION FOR DEFINITION OF OPTICAL CHARACTERISTICS.

NOTE (3): UNDER NORMAL TEMPERATURE AND HUMIDITY IN A DARK ROOM.

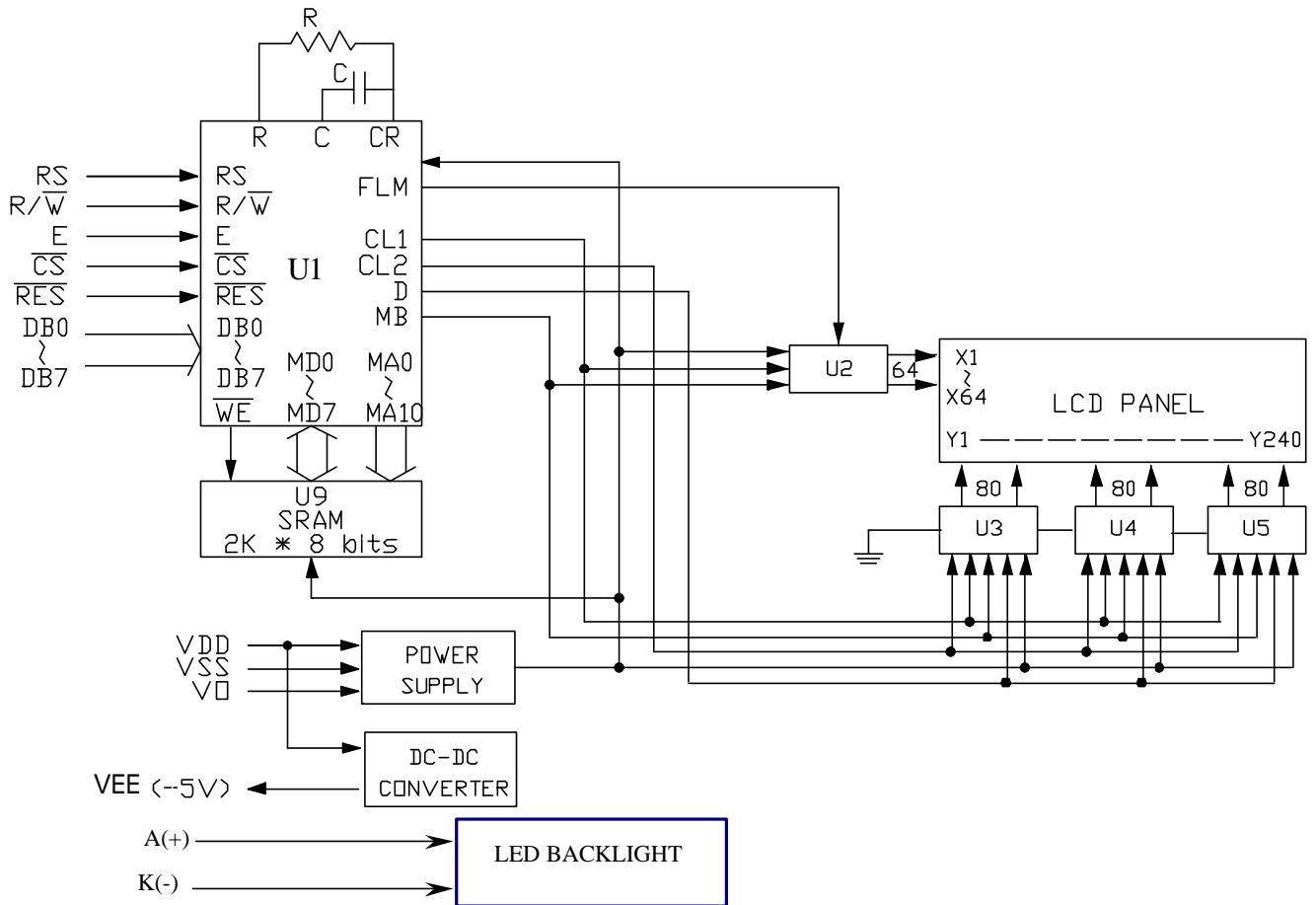
8. Outline dimension



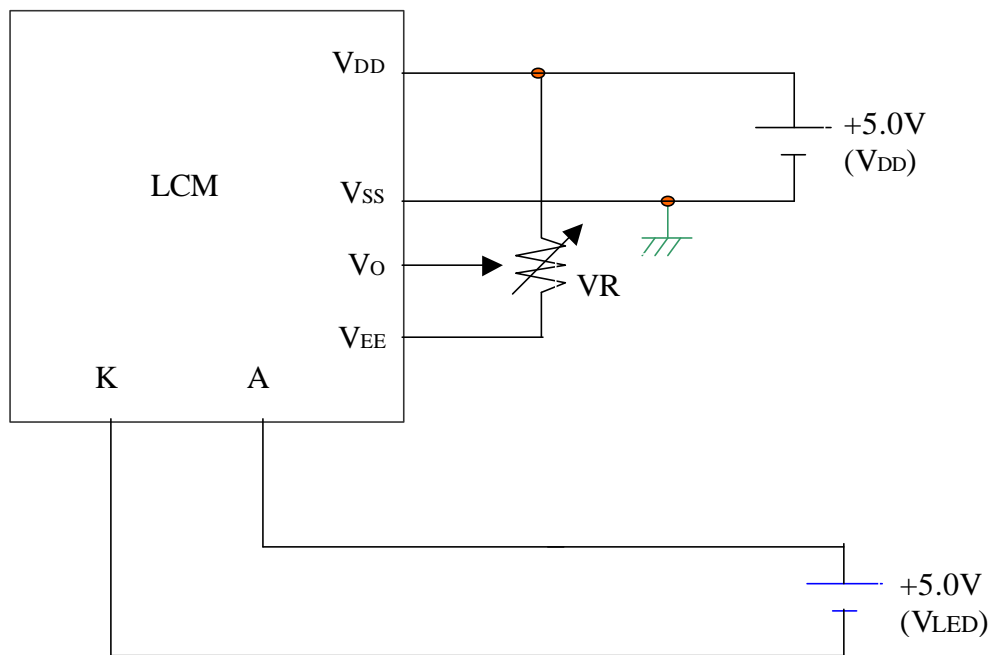
8.1 Interface pin connection

<i>PIN NO.</i>	<i>SYMBOL</i>	<i>FUNCTION</i>
1	V _{SS}	POWER SUPPLY (GND)
2	V _{DD}	POWER SUPPLY (+5V)
3	V _O	OPERATING VOLTAGE FOR LCD DRIVING
4	RS	L : DATA INPUT H : INSTRUCTION CODE INPUT
5	$\overline{R/W}$	H: DATA READ (LCD MODULE MPU) L: DATA WRITE (LCD MODULE MPU)
6	E	ENABLE SINGAL
7	DB0	DATA INPUT/OUTPUT (LSB)
8	DB1	DATA INPUT/OUTPUT
9	DB2	DATA INPUT/OUTPUT
10	DB3	DATA INPUT/OUTPUT
11	DB4	DATA INPUT/OUTPUT
12	DB5	DATA INPUT/OUTPUT
13	DB6	DATA INPUT/OUTPUT
14	DB7	DATA INPUT/OUTPUT (LSB)
15	\overline{CS}	L: CHIP ENABLE
16	\overline{RES}	L: RESET
17	V _{EE}	POWER SUPPLY FOR LCD DRIVING OUTPUT
18	N.C	NO CONNECTION
19	A(+)	POWER SUPPLY FOR LED BACKLIGHT (+)
20	K(-)	POWER SUPPLY FOR LED BACKLIGHT (-)

9. Block diagram



10. Power supply for LCM



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

VR: 200K Ω