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PART NO. : MG1060A-SGL

FOR MESSRS. : _____

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ACCEPTED BY : _____ PROPOSED BY : _____

3. General specifications

3.1 General specifications

PLEASE REFER TO:

“CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS (MS-10-1560S)”.

3.2 This individual specification is prior to general specifications

4. Mechanical data

- (1) NUMBER OF DOT----- 100 * 60 DOTS
- △(2) MODULE SIZE ----- 41.0 W * 40.0 H * 8.0 T (max) mm
- (3) EFFECTIVE AREA----- 34.0 W * 25.0 H mm
- (4) ACTIVE AREA ----- 29.97 W * 20.97 H mm
- (5) DOT SIZE ----- 0.27 W * 0.32 H mm
- (6) DOT PITCH----- 0.30 W * 0.35 H mm
- (7) VIEWING DIRECTION ----- 6 O’CLOCK
- (8) LCD TYPE ----- STN.GRAY.TRANSFLECTIVE
- (9) LED BACKLIGHT COLOR ----- YELLOW-GREEN
- (10) CONTROLLER/DRIVER IC ----- SED 1560D0A

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

$T_a = 25$

$V_{DD} = 3.3 \pm 0.25V$

<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	$V_{DD}-V_{SS}$	-----	3.0	3.3	5.5	V
INPUT VOLTAGE (H LEVEL)	V_{IH}	-----	$0.2V_{DD}$	-----	-----	V
INPUT VOLTAGE (L LEVEL)	V_{IL}	-----	-----	-----	$0.8V_{DD}$	V
OUTPUT VOLTAGE (H LEVEL)	V_{OH}	$I_{OH} = 0.5mA$	$0.2V_{DD}$	-----	-----	V
OUTPUT VOLTAGE (L LEVEL)	V_{OL}	$I_{OH} = -0.5mA$	-----	-----	$0.8V_{DD}$	V
POWER SUPPLY CURRENT	I_{DD}	$V_{DD} = 3.3 V$	-----	0.2	0.4	mA
LCD DISPLAY DUTY RATIO	DUTY	-----	-----	1/64	-----	-----
POWER SUPPLY CURRENT FOR LED BACKLIGHT	I_{LED}	\triangle $V_{LED} = 3.3 V$	-----	50	100	mA

7. Optical characteristics

$T_a = 25$

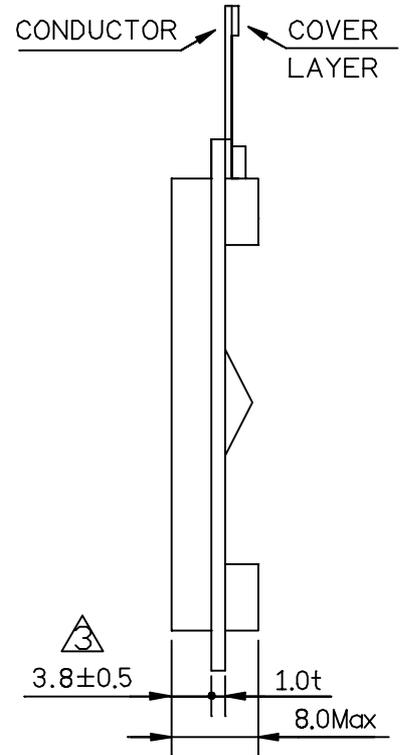
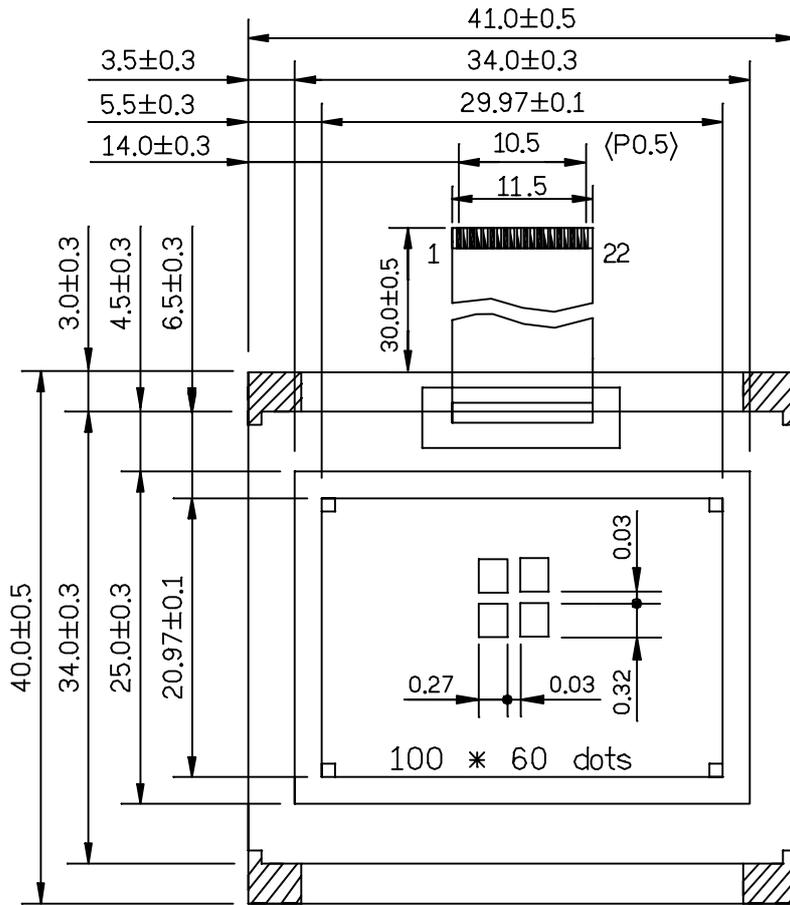
$V_{DD} = 3.3V$

<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	$K = 2.0$ $= 0^\circ$	30	40	-----	deg.	1
CONTRAST RATIO	K	$= 10^\circ$ $= 0^\circ$	3.0	4.0	-----	-----	1
RESPONSE TIME	tr (rise)	$= 10^\circ$ $= 0^\circ$	-----	200	350	ms	1
	tf (fall)	$= 10^\circ$ $= 0^\circ$	-----	300	400	ms	1
BRIGHTNESS FOR LED BACKLIGHT	B	$= 0^\circ$ $= 0^\circ$	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



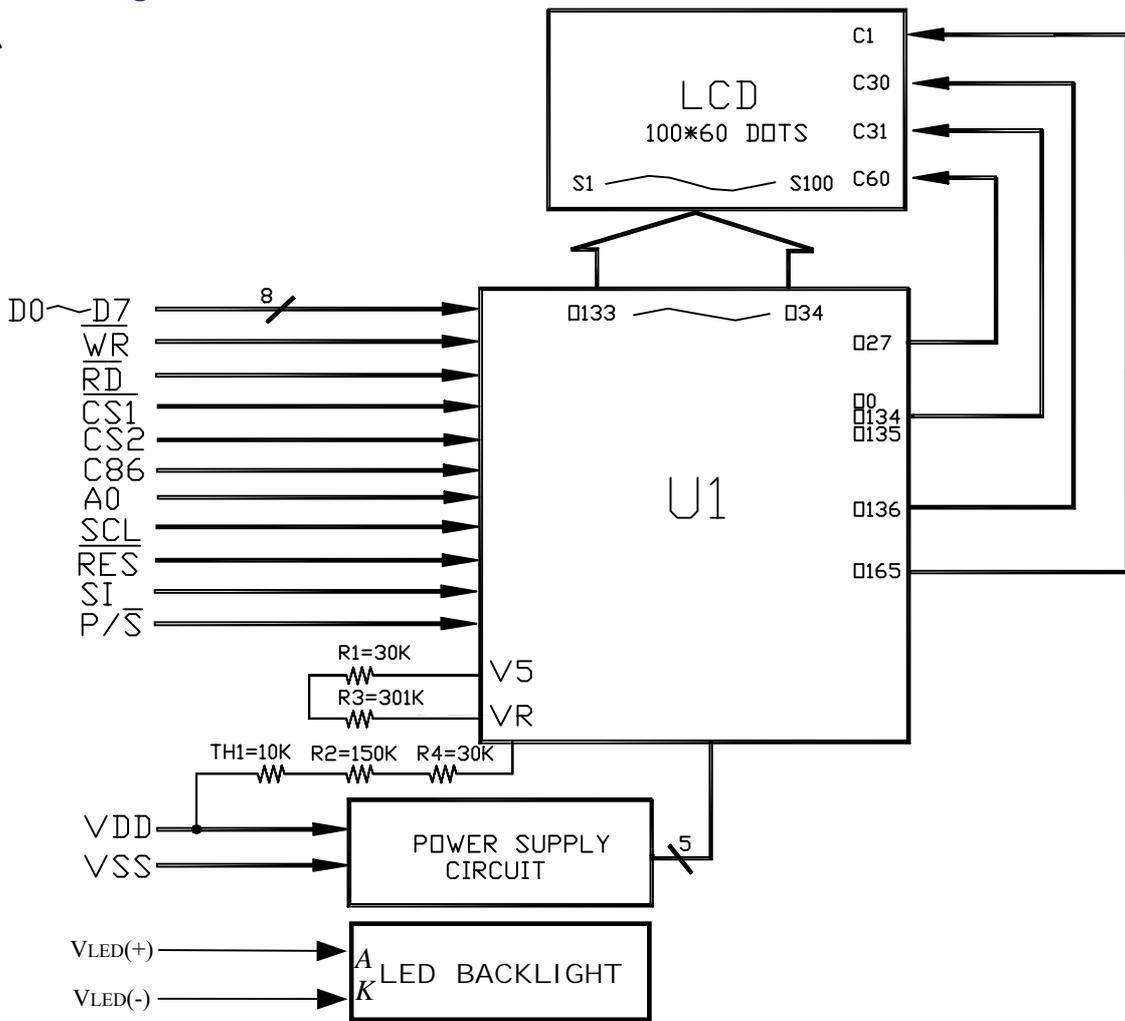
NOTE :
 1.UNIT : mm
 2.SCALE : NTS

8.1 Interface

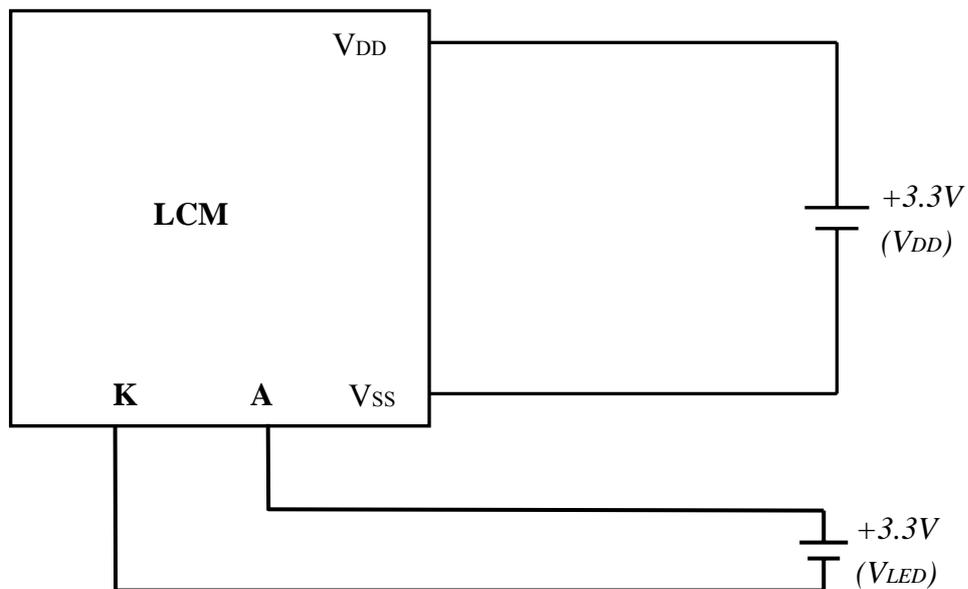
PIN NO.	SYMBOL	FUNCTION
1	V _{DD}	POWER SUPPLY
2	$\overline{\text{RES}}$	L : RESET
3	SCL	SERIAL CLOCK INPUT
4	SI	SETIAL DATA INPUT
5	P/S	H : PARALLEL INPUT L : SERIAL INPUT
6	$\overline{\text{CS1}}$	DATA I/O IS ENABLED WHEN ($\overline{\text{CS1}}=\text{L}$, CS2=H)
7	CS2	DATA I/O IS ENABLED WHEN ($\overline{\text{CS1}}=\text{L}$, CS2=H)
8	C86	H : INTERFACING TO 6800-SERIES L : INTERFACING TO 8080-SERIES
9	AO	H : DO TO D7 IS CONTROL DATA L : DO TO D7 IS DISPLAY DATA
10	$\overline{\text{WR}}$ (R/ $\overline{\text{W}}$)	(When 8080-series) : $\overline{\text{WR}}$ IS (L) (When 6800-series) : Read mode : R/ $\overline{\text{W}}$ IS (H) Write mode : R/ $\overline{\text{W}}$ IS (L)
11	$\overline{\text{RD}}$ (E)	$\overline{\text{RD}}$:(When to 8080-series) E : (When to 6800-series)
12	V _{SS}	GROUND
13	DO	DATA INPUT/OUTPUT
14	D1	DATA INPUT/OUTPUT
15	D2	DATA INPUT/OUTPUT
16	D3	DATA INPUT/OUTPUT
17	D4	DATA INPUT/OUTPUT
18	D5	DATA INPUT/OUTPUT
19	D6	DATA INPUT/OUTPUT
20	D7	DATA INPUT/OUTPUT
21	V _{LED(+)}	POWER SUPPLY FOR LED BACKLIGHT (+)
22	V _{LED(-)}	POWER SUPPLY FOR LED BACKLIGHT (-)



9. Block diagram



10. Power supply for LCM



11. Initialization by instruction

