



ALL SHORE INDUSTRIES, INC.

SPECIFICATION FOR LIQUID CRYSTAL DISPLAY MODULE

MODULE #: ASI-E-201AS-GC-_S/W

(1)	NUMBER OF CHARACTER	-----	20 CH X 1 LINES
(2)	MODULE SIZE	-----	182.0W X 33.5H X 15.0 (max.) mm
(3)	EFFECTIVE AREA	-----	154.0W X 15.3H mm
(4)	CHARACTER FONT	-----	5 X 7 DOTS + CURSOR
(5)	CHARACTER SIZE	-----	6.70W X 9.4H mm
(6)	CHARACTER PITCH	-----	7.4 mm
(7)	DOT SIZE	-----	1.30W X 1.30H mm
(8)	DOT PITCH	-----	1.35W X 1.35H mm
(9)	LCD TYPE	-----	STN YELLOW, GRAY, REFLECTIVE
(10)	DRIVING METHOD	-----	1 / 16 DUTY MULTIPLEX DRIVE
(11)	VIEWING DIRECTION	-----	6 or 12 O ' CLOCK



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RECORDS OF REVISION		DOC . FIRST ISSUE October, 2003
DATE	REVISED DRAWING NO.	SUMMARY



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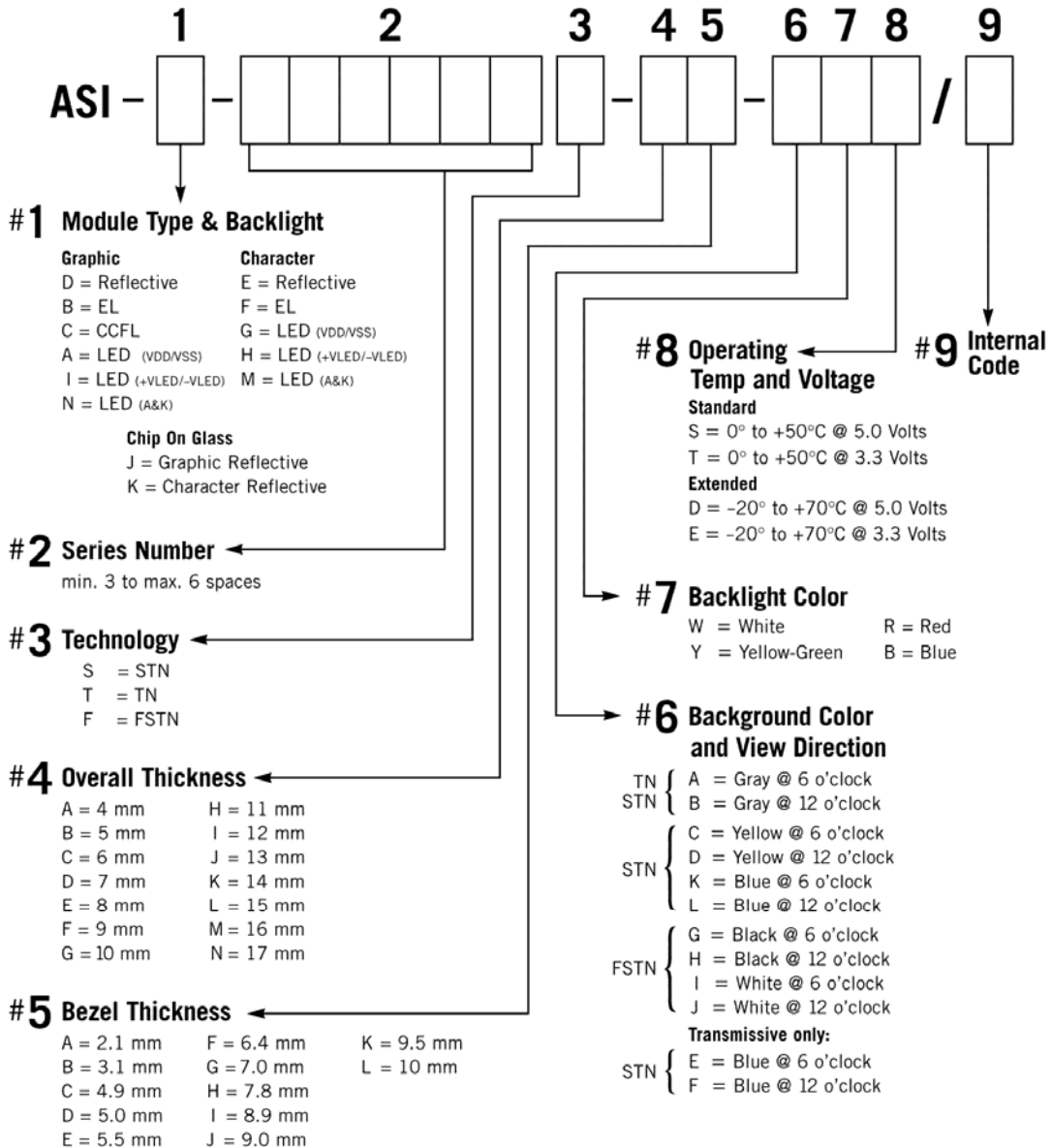
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LCD MODULE PART NUMBERING SYSTEM



NOTE: Some options may not be available in specific modules. Please contact your Sales Representative to check availability.



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1. GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

AS – 002A

1.2 APPLICATION NOTES FOR CONTROLLER / DRIVER : SED1278 OR EQUIVALENT PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

1.3 THIS INDIVIDUAL SPECIFICATIONS IS PRIOR TO GENERAL SPECIFICATIONS .

2. MECHANICAL SPECIFICATIONS

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3. ABSOLUTE MAXIMUM RATINGS

3.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS . (AT Ta = 25°C)

<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.

3.2 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



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4. 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
	V_{IL}		-----	-----	0.6	V
OUTPUT VOLTAGE (H LEVEL)	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}	$V_{DD} = 5.0\text{V}$	-----	2.0	3.0	mA
RECOMMENDED LCD DRIVING VOLTAGE	$V_{DD}-V_O$ DUTY= 1/8 $\Phi=10^\circ$	$T_a = 0^\circ\text{C}$	-----	4.2	-----	V
		$T_a = 25^\circ\text{C}$	-----	3.8	-----	V
		$T_a = 50^\circ\text{C}$	-----	3.4	-----	V

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

5. OPTICAL CHARACTERISTICS. $V_{DD} = 5.0\text{ V}$

<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.	2
CONTRAST RATIO	K	$\Phi = 10^\circ$ $\theta = 0^\circ$	3	4	-----	-----	2
RESPONSE TIME	tr (rise)	$\Phi = 10^\circ$ $\theta = 0^\circ$	-----	200	350	ms	2
	tf (fall)	$\Phi = 10^\circ$ $\theta = 0^\circ$	-----	300	400	ms	2

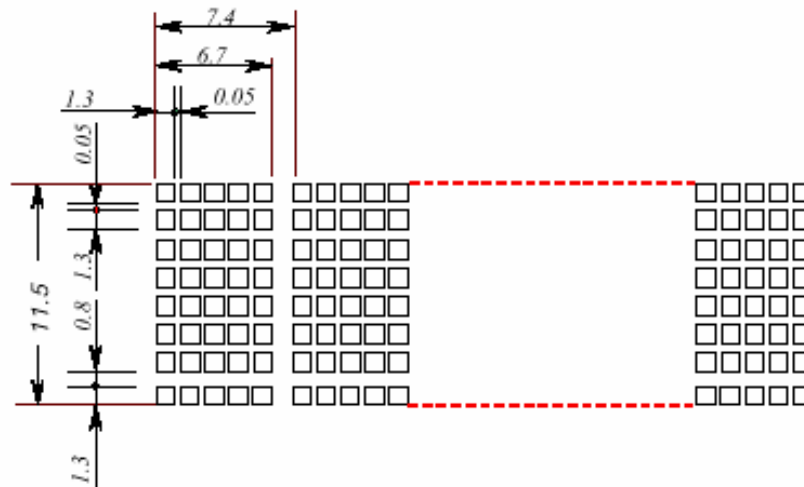
NOTE (2): SEE CUSTOMER ACCEPTANCE STANDARD SPECIFICATION FOR DEFINITION OF OPTICAL CHARACTERISTICS.

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

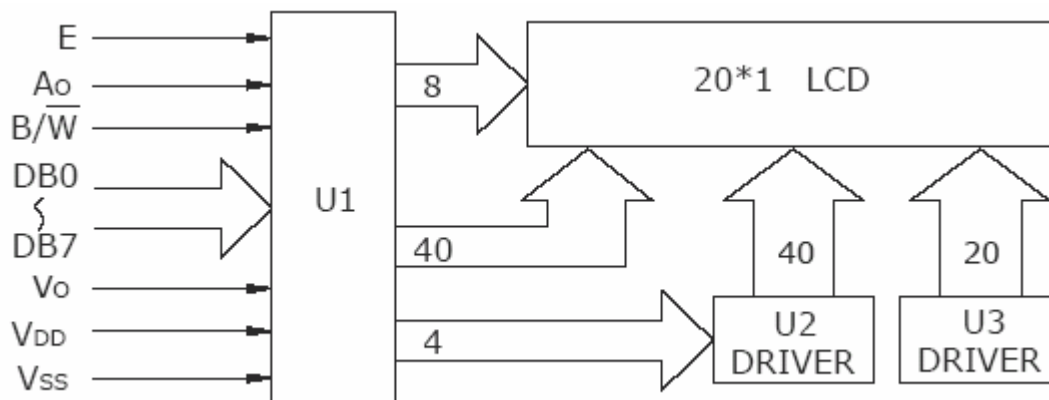


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7. DETAIL DRAWING OF DOT MATRIX



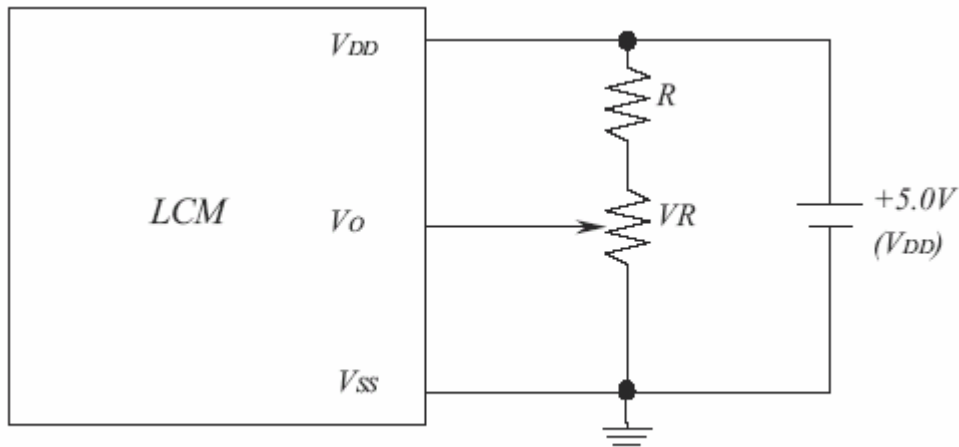
8. BLOCK DIAGRAM





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9. POWER SUPPLY



10 DISPLAY DATA RAM ADDRESS

Display data address charts

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
LINE 1	80	81	82	83	84	85	86	87	88	89	8A	8B	8C	8D	8E	8F	90	91	92	93

The information presented in this datasheet has been carefully checked and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Information contained herein is for selection purposes only, and is subject to change without notice. Please contact ASI for current datasheets prior to designing.