



ALL SHORE INDUSTRIES, INC.

SPECIFICATION FOR LIQUID CRYSTAL DISPLAY MODULE

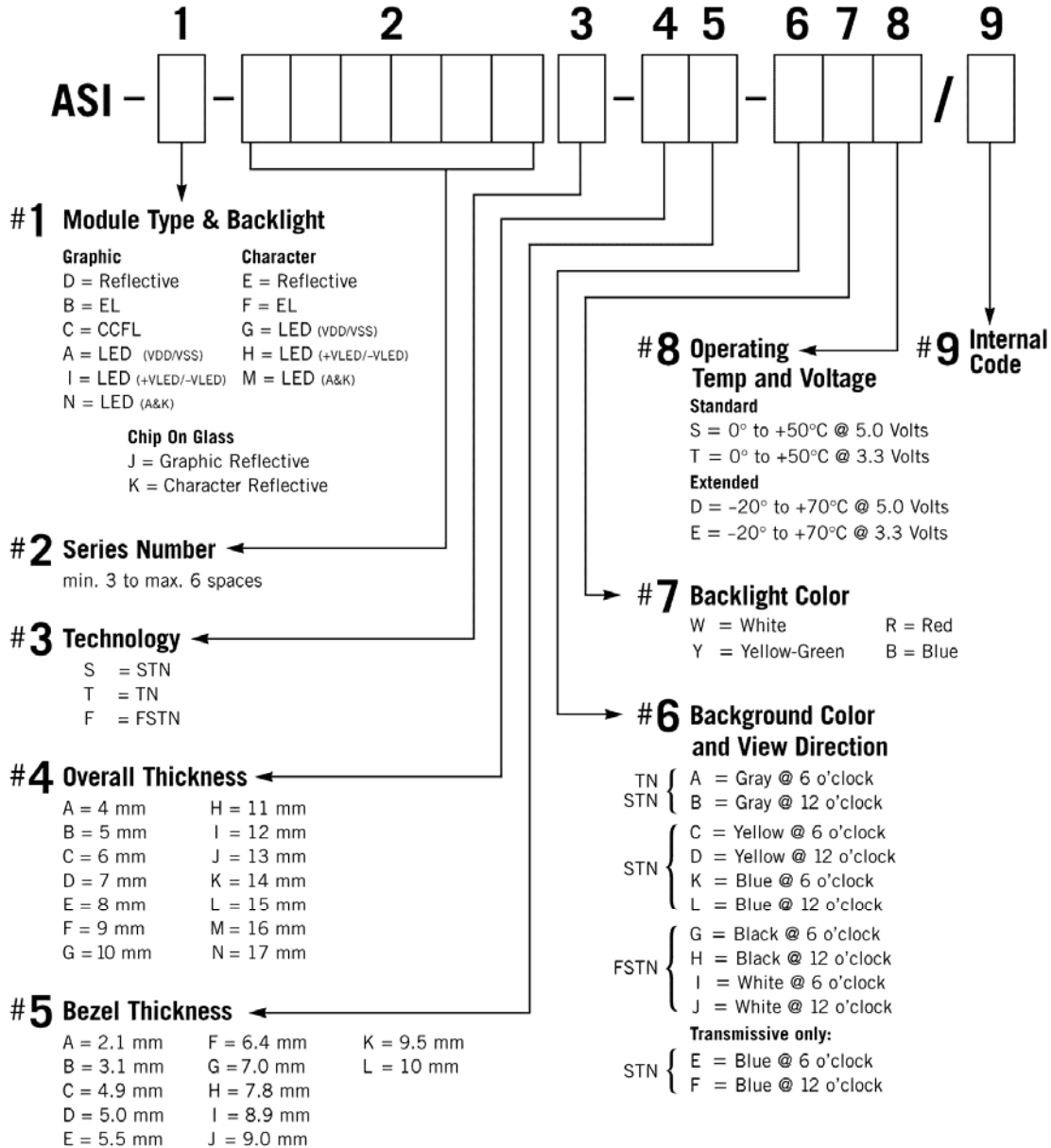
MODULE # : ASI-E-161DS-GC-_S/W

(1)	NUMBER OF CHARACTER	-----	16 CH X 1 LINES
(2)	MODULE SIZE	-----	80.0W X 36.0H X 10.0T (max.) mm
(3)	EFFECTIVE AREA	-----	64.5W X 16.0H mm
(4)	CHARACTER FONT	-----	5 X 7 DOTS + CURSOR
(5)	CHARACTER SIZE	-----	3.07W X 5.73H mm
(6)	CHARACTER PITCH	-----	3.77 mm
(7)	DOT SIZE	-----	0.55W X 0.75H mm
(8)	DOT PITCH	-----	0.63W X 0.83H mm
(9)	LCD TYPE	-----	STN YELLOW, GRAY
(10)	DRIVING METHOD	-----	1 / 16 DUTY MULTIPLEX DRIVE
(11)	VIEWING DIRECTION	-----	6 or 12 O 'CLOCK
(12)	BACK - LIGHT	-----	NONE



MODEL NO : ASI-E-161DS-GC-_S/W

LCD MODULE PART NUMBERING SYSTEM



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



MODEL NO : ASI-E-161DS-GC-_S/W

1. GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

1.2 APPLICATION NOTES FOR CONTROLLER / DRIVER :

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

1.3 THIS INDIVIDUAL SPECIFICATIONS IS PRIOR TO GENERAL SPECIFICATIONS .

2. MECHANICAL SPECIFICATIONS

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MODEL NO : ASI-E-161DS-GC-_S/W

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	VDD-VSS	0	6.0	V	
INPUT VOLTAGE	VI	VSS	VDD	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

MODEL NO : ASI-E-161DS-GC-_S/W4. ELECTRICAL CHARACTERISTICS

Ta = 25°C VDD = 5.0 +|- 0.25 V

<i>I T E M</i>	<i>SYMBOL</i>	<i>CONDITION</i>	<i>MIN.</i>	<i>TYPE</i>	<i>MAX.</i>	<i>UNIT</i>
INPUT VOLTAGE (H LEVEL)	V _{IH}	—————	2.0	—————	—————	V
INPUT VOLTAGE (L LEVEL)	V _{IL}	—————	—————	—————	0.8	V
OUTPUT VOLTAGE (H LEVEL)	V _{OH}	-I _{OH} = 0.2 mA	2.4	—————	—————	V
OUTPUT VOLTAGE (L LEVEL)	V _{OL}	I _{OH} = 1.6 mA	—————	—————	0.4	V
POWER SUPPLY CURRENT	I _{DD}	V _{DD} = 5.0 V	—————	1.0	1.5	mA
RECOMMENDED	V _{DD} -V _O	Ta = 0°C	—————	4.9	—————	V
LCD DRIVING	DUTY =	Ta = 25°C	—————	4.5	—————	V
VOLTAGE	1/8	Ta = 50°C	—————	4.1	—————	V

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

5. OPTICAL CHARACTERISTICS

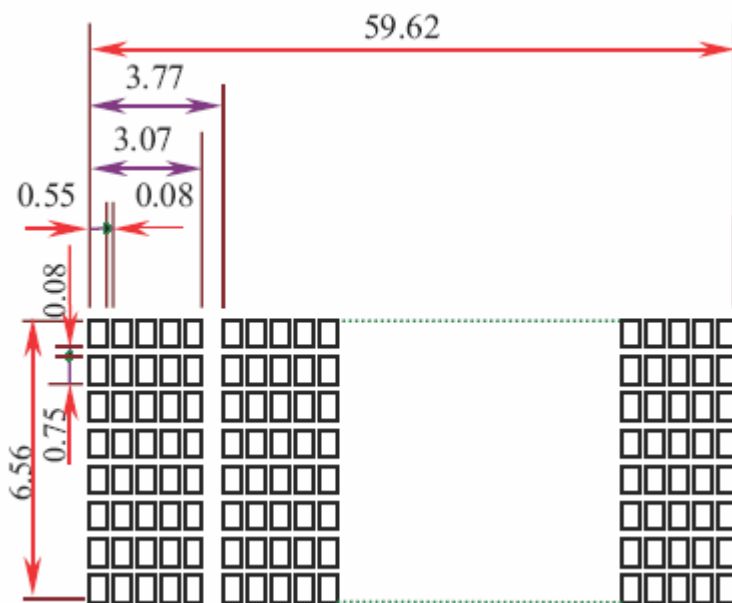
Ta = 25°C VDD = 5.0 V

<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	Φ2-Φ1	K = 2.0	30	40	—————	deg.	2
CONTRAST RATIO	K	Φ = 10° θ = 0°	4	5	—————	—————	2
RESPONSE TIME	tr (rise)	Φ = 10° θ = 0°	—————	200	350	ms	2
	tf (fall)	Φ = 10° θ = 0°	—————	300	400	ms	2

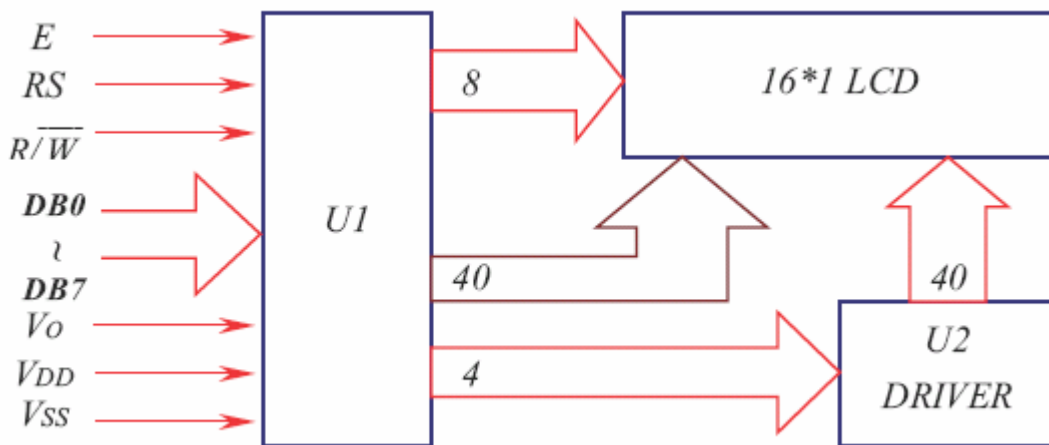
NOTE (2): SEE CUSTOMER ACCEPTANCE STANDARD SPECIFICATION FOR
DEFINITION OF OPTICAL CHARACTERISTICS.

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7. DETAIL DRAWING OF DOT MATRIX



8. BLOCK DIAGRAM



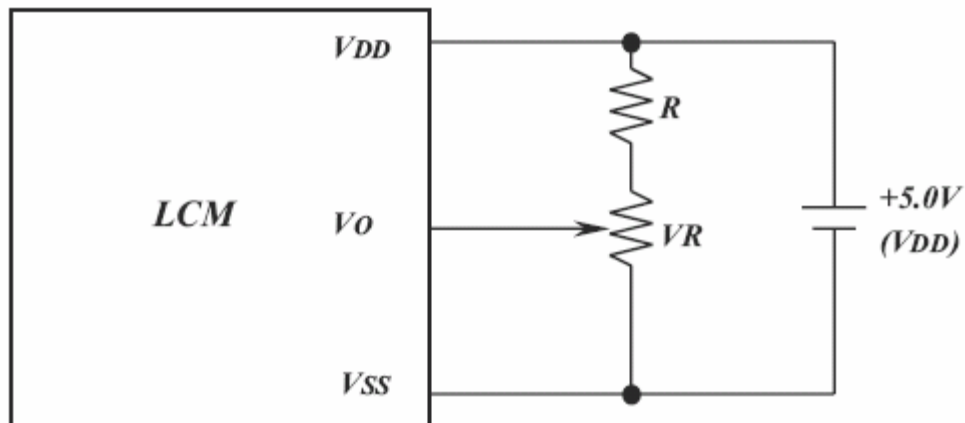
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9. DISPLAY DATA ADDRESS CHARTS

	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	40	41	42	43	44	45	46	47

10. POWER SUPPLY

10.1 POWER SUPPLY FOR LCD MODULE



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

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

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