



# ALL SHORE INDUSTRIES, INC.

## SPECIFICATION FOR LIQUID CRYSTAL DISPLAY MODULE

**MODULE # : ASI-G-404AS-LK-\_WS/W**

- (1) NUMBER OF CHARACTERS -----40 CH \* 4 LINE
- (2) MODULE SIZE-----190.0 W \* 54.0 H \* 15.0 T (Max) mm
- (3) EFFECTIVE AREA -----149.0 W \* 31.0 H mm
- (4) CHARACTER PATTERN-----5 \* 7 DOTS + CURSOR
- (5) CHARACTER SIZE -----2.78 W \* 4.27 H mm
- (6) CHARACTER PITCH -----3.53 W \* 5.49 H mm
- (7) DOT SIZE -----0.50 W \* 0.55 H mm
- (8) DOT PITCH-----0.57 W \* 0.62 H mm
- (9) VIEWING DIRECTION -----6 or 12 O'CLOCK
- (10) LCD TYPE -----STN BLUE TRANSMISSIVE
- (11) LED COLOR -----WHITE



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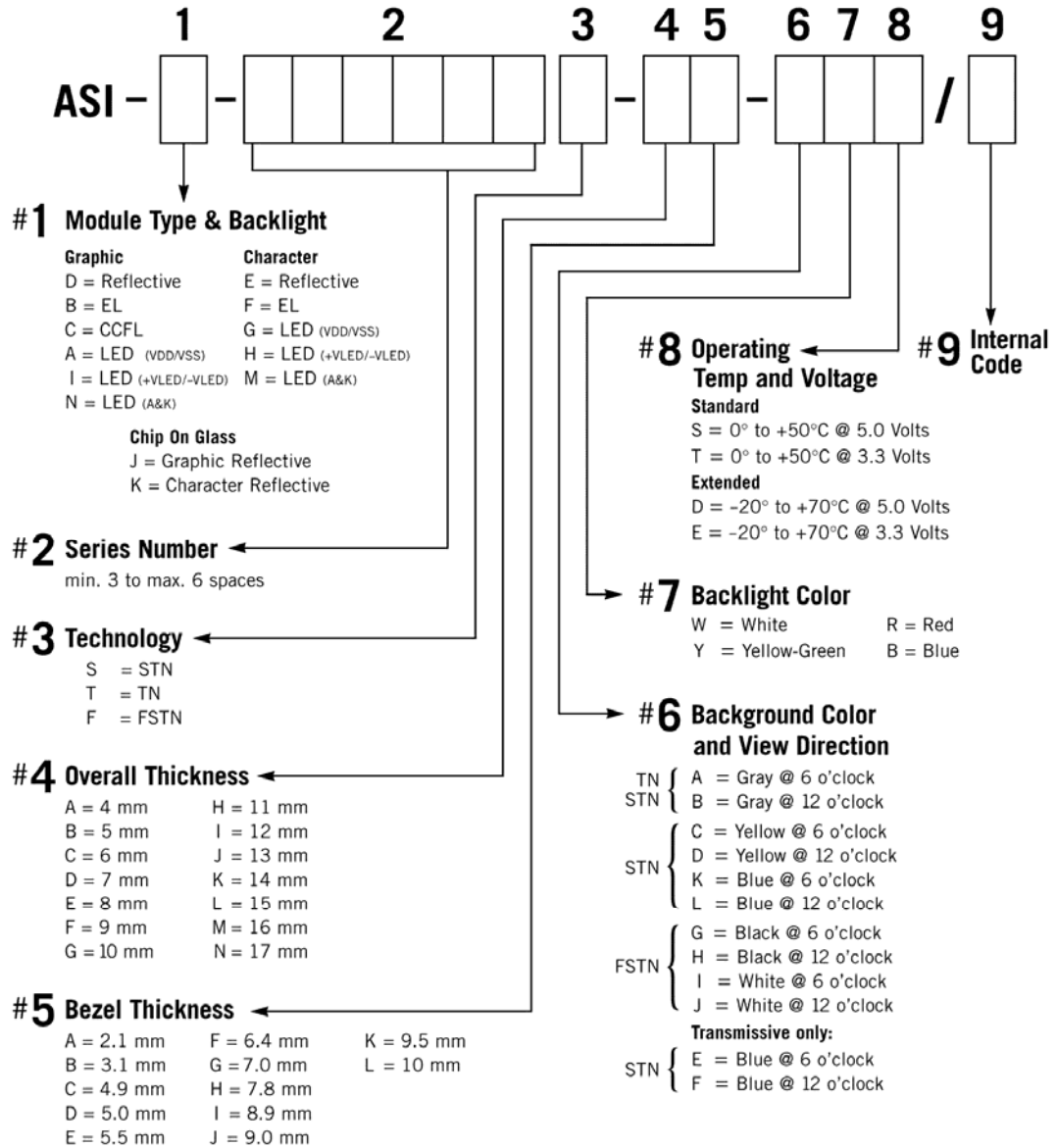
**RECORD OF REVISION**

<b>DATE</b>	<b>PAGE</b>	<b>SUMMARY</b>



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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.



**MODEL NO : ASI-G-404AS-LK-\_WS/W**

**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**

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**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 <sub>DD</sub> -V <sub>SS</sub>	0	6.0	V	
INPUT VOLTAGE	V <sub>I</sub>	V <sub>SS</sub>	V <sub>DD</sub>	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°	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°C)

NOTE (3): 1G = 9.8 m/s<sup>2</sup>


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**6. Electrical characteristics**

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

<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 <sub>IH</sub>	—————	2.0	—————	—————	V
	V <sub>IL</sub>	—————	—————	—————	0.6	V
OUTPUT VOLTAGE	V <sub>OH</sub>	-I <sub>OH</sub> = 0.2 mA	2.4	—————	—————	V
	V <sub>OL</sub>	I <sub>OL</sub> = 1.6 mA	—————	—————	0.4	V
POWER SUPPLY CURRENT	I <sub>DD</sub>	V <sub>DD</sub> = 5.0 V	—————	2.5	3.5	mA
RECOMMENDED LCD DRIVING VOLTAGE	V <sub>DD</sub> -V <sub>O</sub> DUTY= 1/16	T <sub>a</sub> = 0°	—————	4.9	—————	V
		T <sub>a</sub> = 25°	—————	4.5	—————	V
		T <sub>a</sub> = 50°	—————	4.1	—————	V
POWER SUPPLY CURRENT FOR LED	I <sub>LED</sub>	V <sub>DD</sub> = 5.0V	—————	80	120	mA

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

**7. Optical characteristics**

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

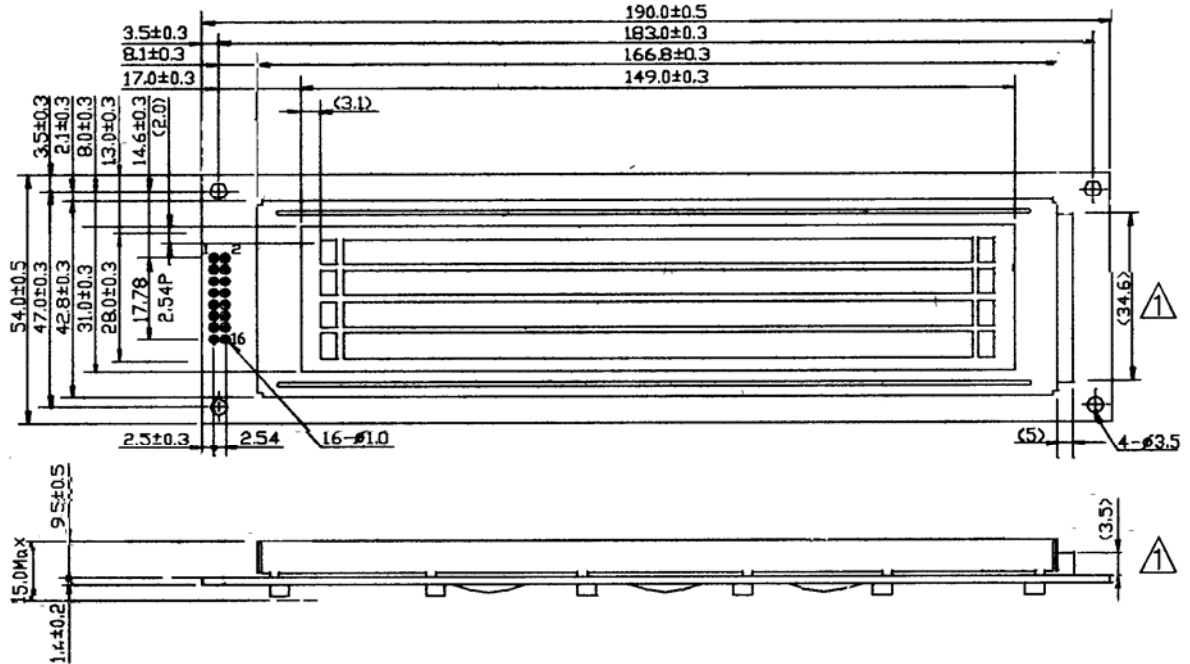
<i>I T E M</i>	<i>SYMBOL</i>	<i>CONDITION</i>	<i>MIN.</i>	<i>TYP.</i>	<i>MAX.</i>	<i>UNIT</i>	<i>NOTE</i>
VIEWING ANGLE	$\phi_2$ - $\phi_1$	K = 2.0	30	40	—————	deg.	2
CONTRAST RATIO	K	$\phi = 10^\circ$ $\theta = 180^\circ$	4.0	5.0	—————	—————	2
RESPONSE TIME	tr (rise)	$\phi = 10^\circ$ $\theta = 180^\circ$	—————	200	350	ms	2
	tf (fall)	$\phi = 10^\circ$ $\theta = 180^\circ$	—————	300	400	ms	2
BRIGHTNESS FOR LED BACKLIGHT	B	$\phi = 10^\circ$ $\theta = 0^\circ$	6.0	—————	—————	cd/m <sup>2</sup>	2,3

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

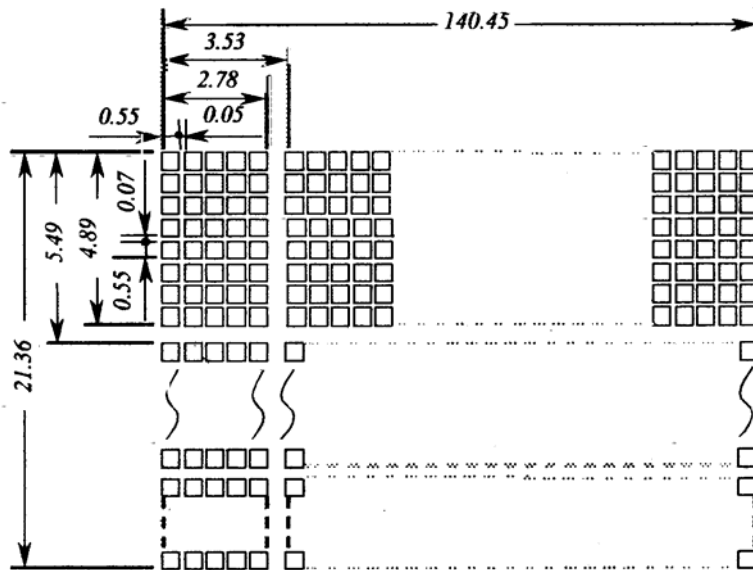


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NOTE (3): UNDER NORMAL TEMPERATURE AND HUMIDITY IN A DARK ROOM.



**8. Outline Dimensions**



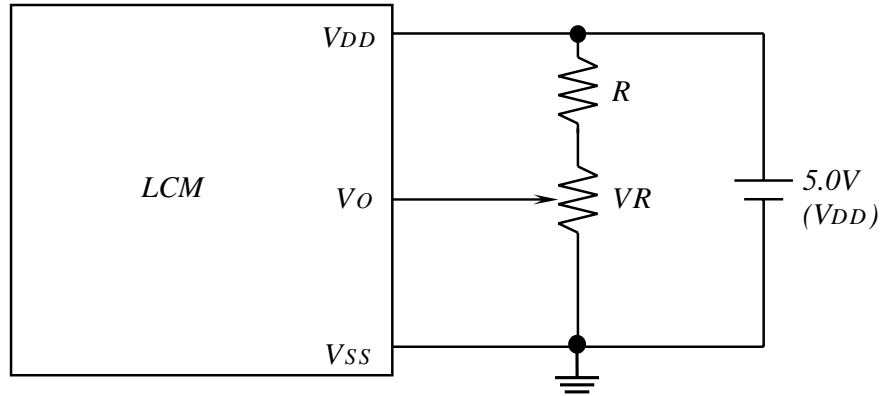






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### 10. Power supply for LCM



RECOMMENDED RESISTOR R:  $V_{DD} - V_{O} \geq 1.5V$   
 $V_{DD} - V_{O}$ : LCD DRIVING VOLTAGE  
 VR: 10K $\Omega$ ~ 20K

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.