

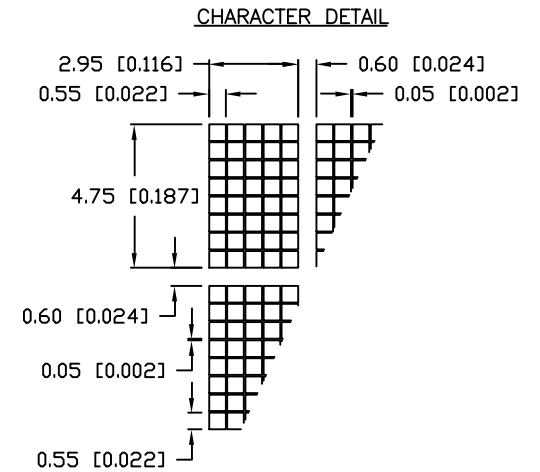
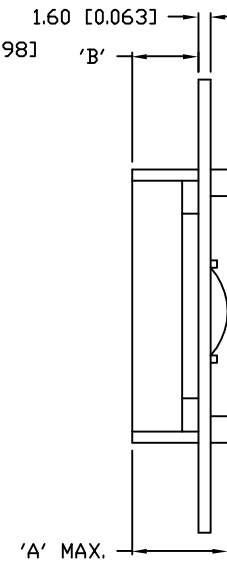
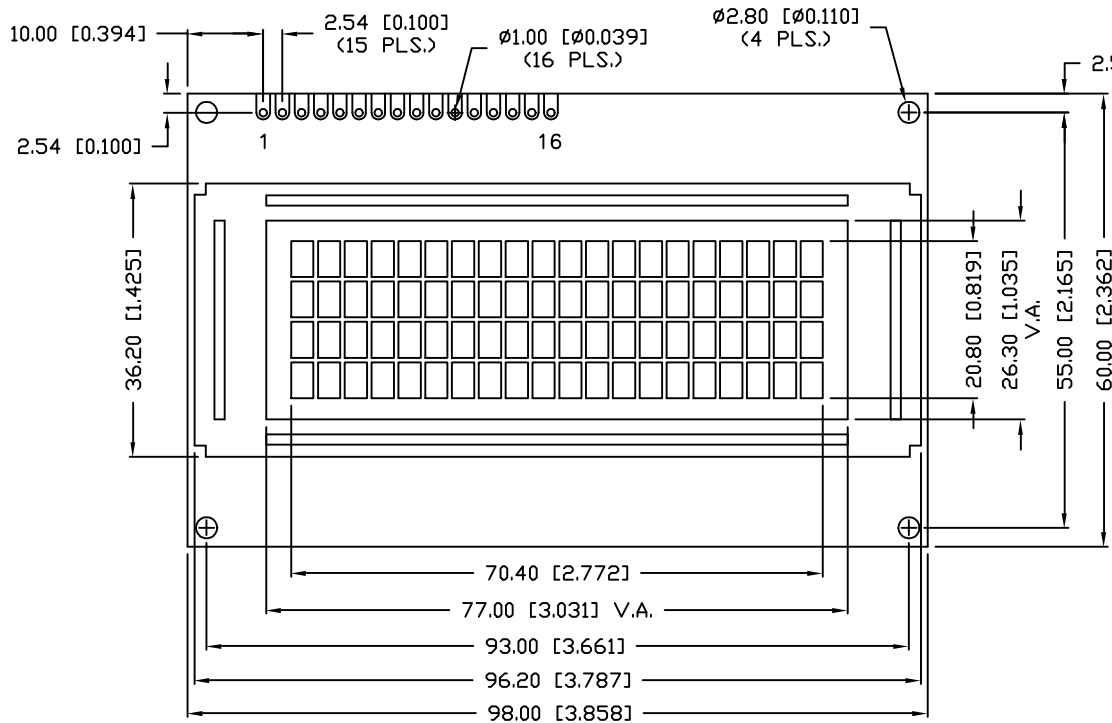
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P/N PREFIX/SUFFIX TABLE		
LCM-X	DXX	DESCRIPTION
STANDARD	S	SR STN, REFLECTIVE
		SF STN, TRANSFLECTIVE(W/ BACKLIGHT)
HIGH TEMP.	H	TR TN, REFLECTIVE
		TF TN, TRANSFLECTIVE(W/ BACKLIGHT)

PART NUMBER		REV.
LCM-X02004DXX		A
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #10BRDR. & REDRAWN.	9-1-98

CAUTION: STATIC SENSITIVE DEVICE  
FOLLOW PROPER E.S.D. HANDLING PROCEDURES  
WHEN WORKING WITH THIS PART.

TYPE	DIM.	A	B
WITH BACKLIGHT		12.7	8.7
NO BACKLIGHT		8.8	4.8



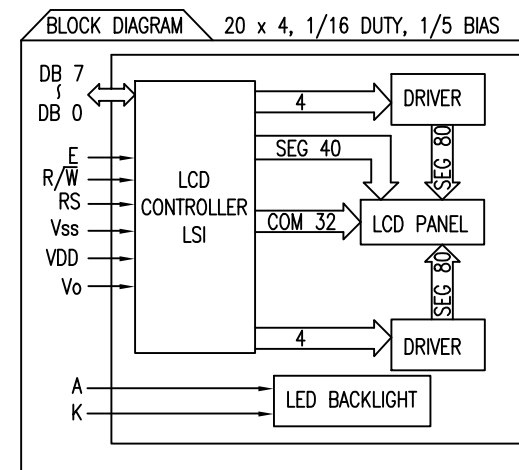
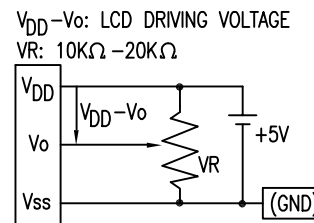
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\*UNLESS OTHERWISE SPECIFIED TOLERANCE IS  $\pm 0.25\text{mm}$  ( $\pm 0.010''$ )

REV. A	PART NUMBER LCM-X02004DXX	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	290 E. HELLEN ROAD PALATINE, ILLINOIS 60067 PHONE: 1-847-359-2790 WEB: HTTP://WWW.LUMEX.COM
4.75mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 4 LCD MODULE, 1/16 DUTY, 1/5 BIAS.		RELIABILITY NOTE OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.	DATE: 6-18-98
		DRAWN BY: SA/DU/BC	CHECKED BY: APPROVED BY: DATE: 6-18-98
			PAGE: 1 OF 2 SCALE: N/A

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
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PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	-	POWER SUPPLY GND (0V)
2	V <sub>DD</sub>	-	
3	V <sub>O</sub>	-	
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)
6	E	H,H->L	ENABLE
7~14	DB0~DB7	H/L	DATA BUS-SOFTWARE SELECTABLE 4 OR 8 BIT MODE.
15	A	-	ANODE LED BACKLIGHT
16	K	-	CATHODE LED BACKLIGHT



ELECTRICAL CHARACTERISTICS		V <sub>DD</sub> =4.7V to 5.3V, T <sub>A</sub> =25°C				
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	-	-	5.0	-	V
SUPPLY CURRENT FOR LOGIC	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	2.0	3.0	mA
INPUT VOLTAGE	HIGH	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub> V
	LOW	V <sub>IL</sub>	-	0	-	0.6 V
OUTPUT VOLTAGE	HIGH	V <sub>OH</sub>	I <sub>OH</sub> =-0.205mA	2.4	-	V
	LOW	V <sub>OL</sub>	I <sub>OL</sub> =1.6ma	-	-	0.4 V
*LED BACKLIGHT	VOLTAGE	V <sub>f</sub>	I <sub>f</sub> =300mA	-	4.2	4.5 V
	CURRENT	I <sub>f</sub>	-	-	300	600 mA
	POWER CONSUMPTION	PD	-	-	1260	- mW
	LUMINOUS	L	I <sub>f</sub> =300mA	70	-	- cd/m <sup>2</sup>
	COLOR	-	-	-	-	-

\*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS					
ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	T <sub>a</sub> =25°C	4.7	5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>O</sub>	-	4.2@50°C	4.8@0°C	V
INPUT VOLTAGE	V <sub>I</sub>	T <sub>a</sub> =25°C	V <sub>SS</sub>	V <sub>DD</sub>	V
OPERATING TEMPERATURE	T <sub>opr</sub>	LCM-S	0	50	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	T <sub>stg</sub>	LCM-S	-20	70	°C
		LCM-H	-30	85	°C

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4.75mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 4 LCD MODULE, 1/16 DUTY, 1/5 BIAS.	

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