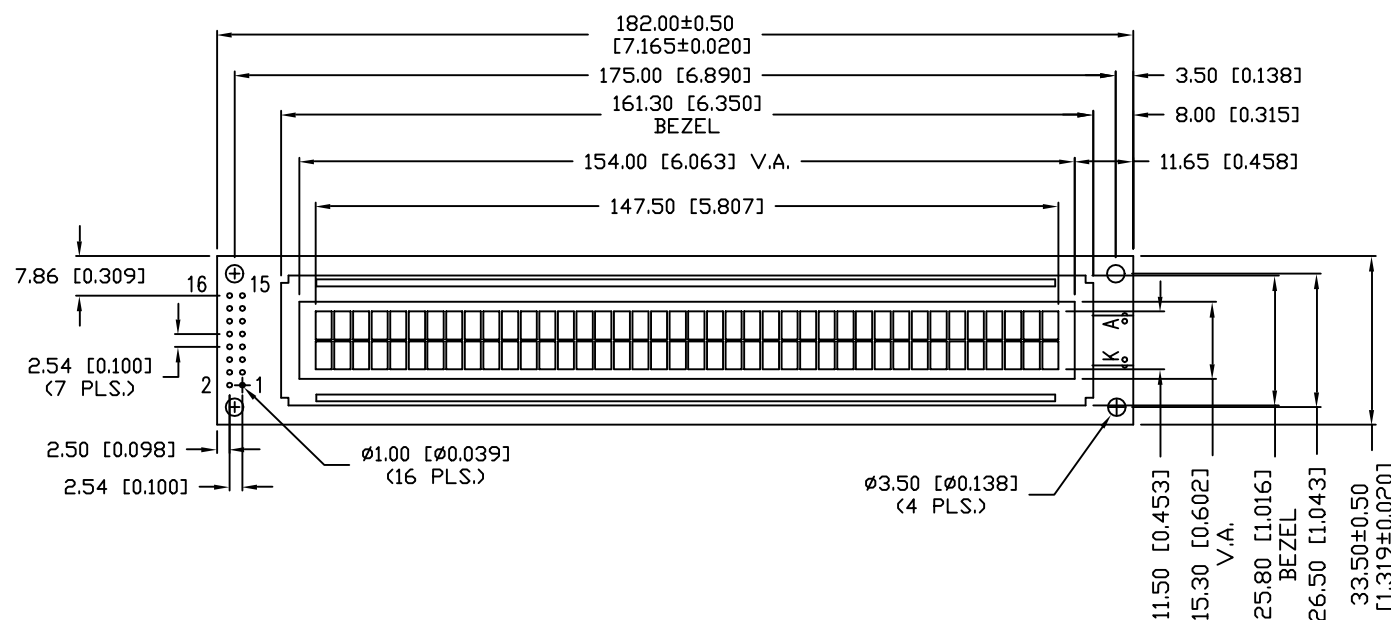
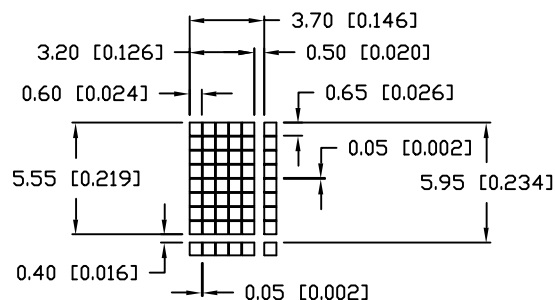


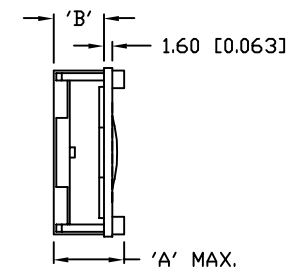
P/N PREFIX/SUFFIX TABLE		
LCM-X	DX	DESCRIPTION
STANDARD	S	SR STN, REFLECTIVE
	SF	STN, TRANSFLECTIVE(W/ BACKLIGHT)
HIGH TEMP.	H	TR TN, REFLECTIVE
	TF	TN, TRANSFLECTIVE(W/ BACKLIGHT)

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

## CHARACTER DETAIL



TYPE	DIM.	A	B
WITH BACKLIGHT		12.7	8.7
NO BACKLIGHT		8.8	4.7



UNCONTROLLED DOCUMENT

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

REV.

PART NUMBER

LCM-X04002DXX

5.55mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 40 x 2 LCD  
CHARACTER MODULE, 1/16 DUTY, 1/5 BIAS.

## CONFIDENTIAL INFORMATION

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## 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.

**LUMEX**  
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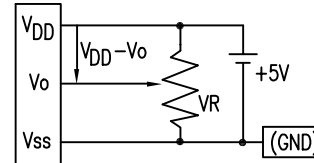
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SA/BC

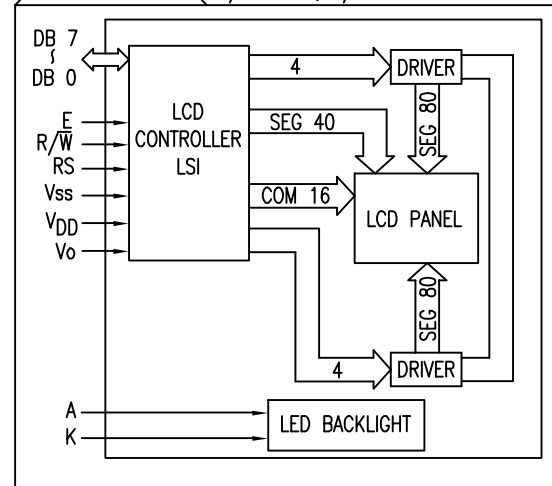
PAGE: 1 OF 2  
SCALE: N/A

## PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION	
1	V <sub>SS</sub>	-	POWER SUPPLY	GND (0V)
2	V <sub>DD</sub>	-		5V
3	V <sub>O</sub>	-		FOR LCD DRIVE
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT	
5	R/ $\bar{W}$	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

V<sub>DD</sub>-V<sub>O</sub>: LCD DRIVING VOLTAGEVR: 10K $\Omega$ -20K $\Omega$ 

## BLOCK DIAGRAM 1/16 DUTY, 1/5 BIAS



## 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>
	LOW	V <sub>IL</sub>	-	0	-	0.6
OUTPUT VOLTAGE	HIGH	V <sub>OH</sub>	-	2.4	-	V
	LOW	V <sub>OL</sub>	-	-	0.4	V
*LED BACKLIGHT	VOLTAGE	V <sub>f</sub>	-	4.2	4.6	V
	CURRENT	I <sub>f</sub>	-	210	-	mA
	POWER CONSUMPTION	PD	-	882	-	mW
	LUMINOUS	L	I <sub>f</sub> =210mA	70	-	cd/m <sup>2</sup>
	COLOR	-	-	-	-	nm

\*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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REV.

PART NUMBER

LCM-X04002DXX

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DRAWN BY: CHECKED BY: APPROVED BY: DATE: 9-30-98

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SCALE: N/A

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