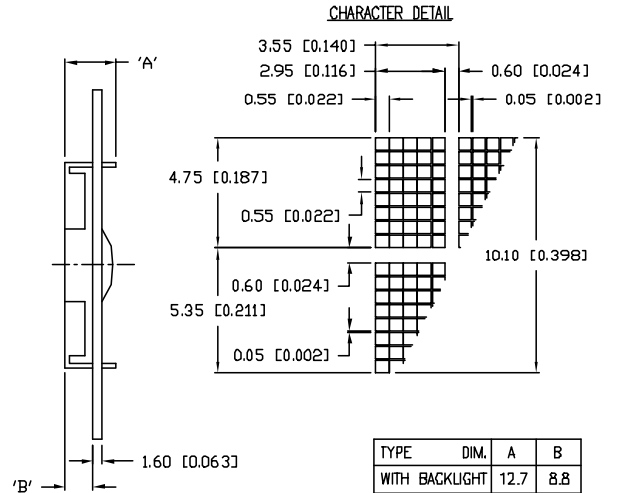
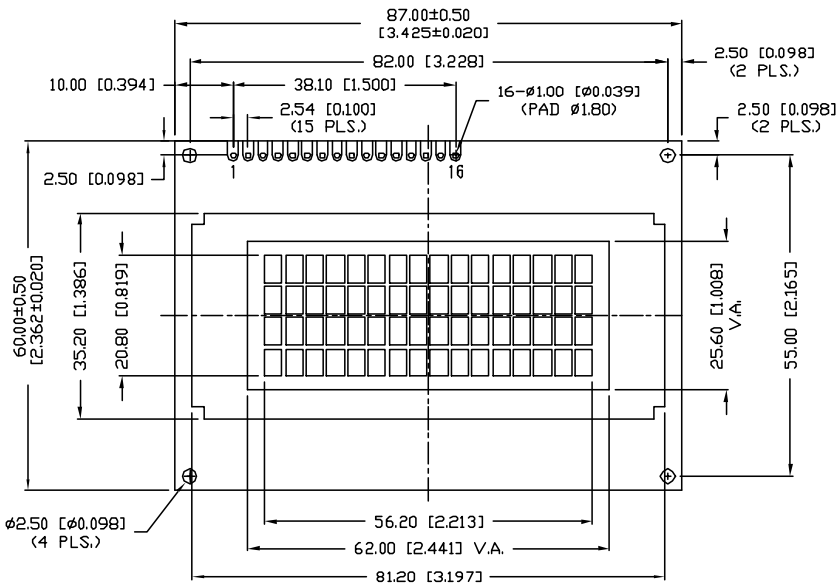


UNCONTROLLED DOCUMENT

PART NUMBER LCM-X01604DXX		REV. A
REV. A	E.C.N. NUMBER AND REVISION COMMENTS E.C.N. #10464./	DATE 10-9-98

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.

UNCONTROLLED DOCUMENT  
 \*UNLESS OTHERWISE SPECIFIED TOLERANCE IS ±0.25mm (±0.010")

REV. A	PART NUMBER LCM-X01604DXX
4.75mm TALL, 5 x 8 DOT MATRIX, 16 x 4 CHARACTER LCD MODULE, 1/16 DUTY, 1/5 BIAS.	

**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.

**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.

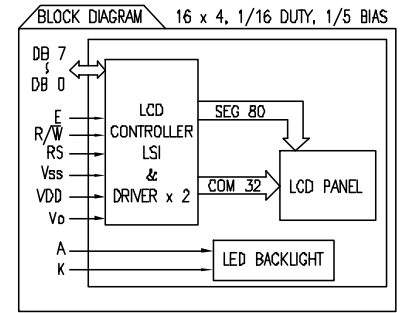
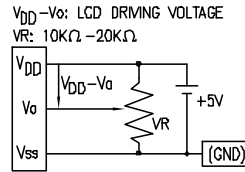
**LUMEX INCORPORATED**  
 290 E. HELLEN ROAD  
 PALATINE, ILLINOIS 60067  
 PHONE: 1-847-359-2790  
 WEB: HTTP://WWW.LUMEX.COM

DRAWN BY: SA/BC	CHECKED BY:	APPROVED BY:	DATE: 8-10-98
			PAGE: 1 OF 2
			SCALE: N/A

UNCONTROLLED DOCUMENT

PART NUMBER		REV.
LCM-X01604DXX		A
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
	SEE PAGE #1./	

PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	-	POWER SUPPLY
2	V <sub>DD</sub>	-	
3	V <sub>0</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		① 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	-	4.7	V
	LOW	V <sub>IL</sub>	-	0	-	0.6	V
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>	I <sub>f</sub> =260mA	-	4.2	4.5	V
	CURRENT	I <sub>f</sub>	-	-	260	400	mA
	POWER CONSUMPTION	PD	-	-	1.092	-	mW
	LUMINOUS	L	I <sub>f</sub> =260mA	70	-	-	cd/m <sup>2</sup>
	COLOR	-	-	-	-	-	nm

ABSOLUTE MAXIMUM RATINGS		②				
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>0</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	

UNCONTROLLED DOCUMENT

REV. A	PART NUMBER LCM-X01604DXX	<p><b>CONFIDENTIAL INFORMATION</b> 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.</p> <p><b>RELIABILITY NOTE</b> 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.</p>	<p><b>LUMEX INCORPORATED</b></p> <p>290 E. HELLEN ROAD PALATINE, ILLINOIS 60067 PHONE: 1-847-359-2790 WEB: HTTP://WWW.LUMEX.COM</p>
4.75mm TALL, 5 x 8 DOT MATRIX, 16 x 4 CHARACTER LCD MODULE, 1/16 DUTY, 1/5 BIAS.			