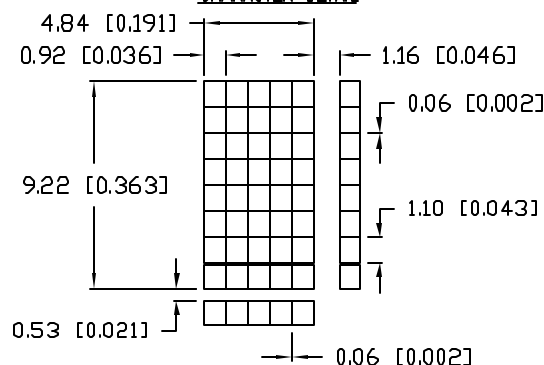


UNCONTROLLED DOCUMENT

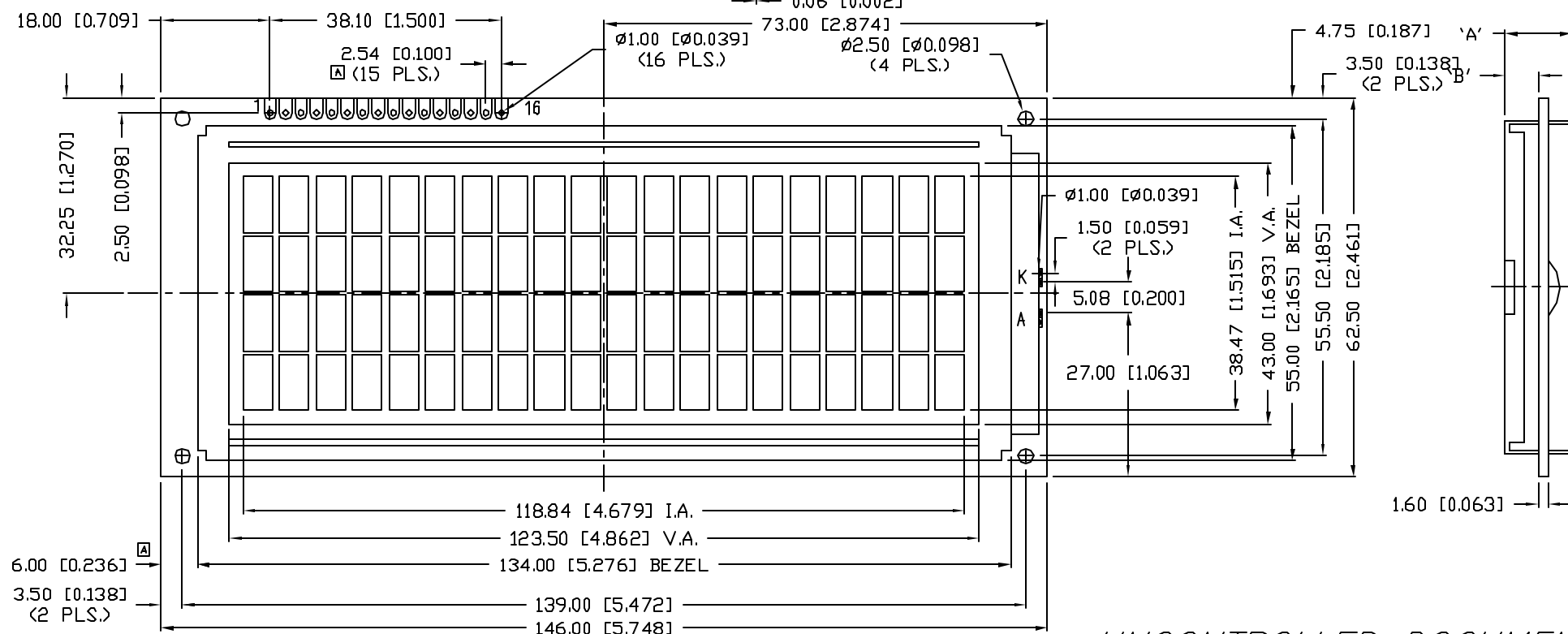
P/N PREFIX/SUFFIX TABLE			
LCM-X		DOX	DESCRIPTION
STANDARD	S	SR	STN, REFLECTIVE
HIGH TEMP.	H	SF	STN, TRANSFLECTIVE(W/ BACKLIGHT)

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

CHARACTER DETAIL



TYPE	DIM.	A	B
WITH BACKLIGHT		13.0	9.0
NO BACKLIGHT		11.0	5.4



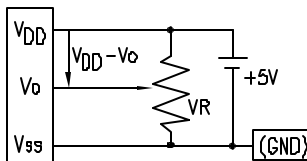
*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN=+DECIMAL PRECISION MAX.=+0.00
-0.00 -DECIMAL PRECISION

REV. C	PART NUMBER LCM-X02004DXX/D-Y	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.	 290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 US WEB: www.lumex.com TW WEB: www.lumex.com.tw
9.22mm CHARACTER HEIGHT, 20 x 4 CHARACTERS, 5 x 8 DOT MATRIX LCD MODULE, STN YELLOW, 1/16 DUTY, 1/5 BIAS.		DRAWN BY: CT	CHECKED BY: APPROVED BY: DATE: 5.15.03 PAGE: 1 OF 2 SCALE: N/A

PIN CONFIGURATION

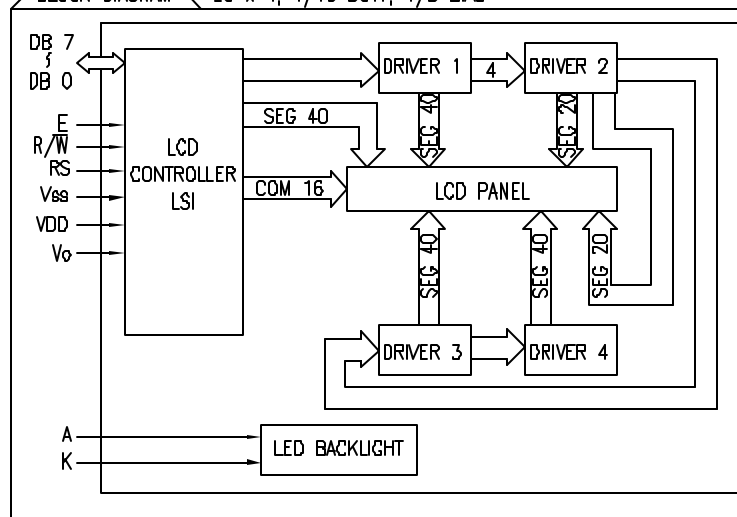
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	—	POWER SUPPLY GND (0V) 5V FOR LCD DRIVE
2	V _{DD}	—	
3	V _O	—	
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)
6	E	H,H->L	ENABLE
7~14	DB0~DB7	H/L	DATA BUS—SOFTWARE SELECTABLE 4 OR 8 BIT MODE.
15	A	—	ANODE LED BACKLIGHT
16	K	—	CATHODE LED BACKLIGHT

V_{DD}-V_O: LCD DRIVING VOLTAGE
V_R: 10KΩ-20KΩ



PART NUMBER		REV.
LCM-X02004DXX/D-Y		C
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
	SEE PAGE 1.	

BLOCK DIAGRAM 20 x 4, 1/16 DUTY, 1/5 BIAS



ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	T _a =25°C	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V _O	—	0	4.9	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	LCM-H	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	LCM-H	-30	80	°C

ELECTRICAL CHARACTERISTICS

V_{DD}=4.75V to 5.25V, T_A=25°C

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	—	—	5.0	—	V
SUPPLY CURRENT FOR LOGIC	I _{DD}	V _{DD} =5V	—	1.0	2.2	mA
INPUT VOLTAGE	HIGH	V _{IH}	—	2.2	—	V _{DD}
		V _{IL}	—	0	—	0.6
OUTPUT VOLTAGE	HIGH	V _{OH}	I _{OH} =-0.205mA	2.4	—	V
		V _{OL}	I _{OL} =1.6mA	—	0.4	V
*LED BACKLIGHT	VOLTAGE	V _f	I _f =550mA	—	4.2	4.5
	CURRENT	I _f	—	—	550	600
	POWER CONSUMPTION	P _D	—	—	2310	—
	LUMINOUS	L	I _f =550mA	70	—	—
	COLOR	—	—	—	—	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

DDRAM ADDRESS

LINE1:	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
LINE2:	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53
LINE3:	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23	24	25	26	27
LINE4:	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F	60	61	62	63	64	65	66	67

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REV.

C

PART NUMBER

LCM-X02004DXX/D-Y

9.22mm CHARACTER HEIGHT, 20 x 4 CHARACTERS,
5 x 8 DOT MATRIX LCD MODULE,
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DATE: 5.15.03

PAGE: 2 OF 2

SCALE: N/A

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