# UNCONTROLLED DOCUMENT

PART NUMBER

LCM-X04002DXX

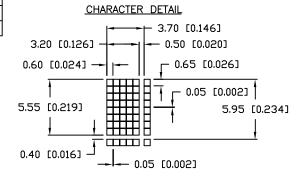
REV. E.C.N. NUMBER AND REVISION COMMENTS

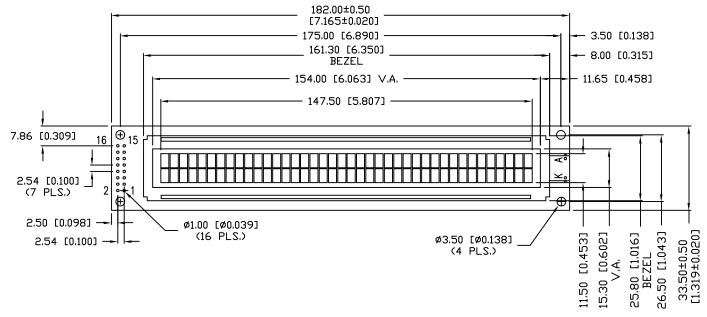
DATE

REV.

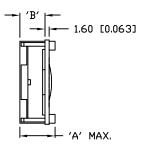
P/N PREFIX/SUFFIX TABLE							
LCM-X		DXX	DESCRIPTION				
STANDARD	S	SR	STN, REFLECTIVE				
STANDARD		SF	STN, TRANSFLECTIVE(W/ BACKLIGHT)				
HIGH TEMP.	Ξ	TR	TN, REFLECTIVE				
HIGH IEMP.		TF	TN, TRANSFLECTIVE(W/ BACKLIGHT)				

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





TYPE	DIM. A	В
WITH BACKLI	GHT 12.7	8.7
NO BACKLIGI	HT 8.8	4.7



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

REV.

PART NUMBER
LCM-X04002DXX

5.55mm CHARACTER HEIGHT, 5  $\times$  8 DOT MATRIX, 40  $\times$  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.



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

DRAWN BY: CI

SA/BC

CHECKED BY: APPROVED E

APPROVED BY: DATE: 9-30-98
PAGE: 1 OF 2

SCALE: N/A

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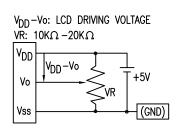
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PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION					
1	Vss	-		GND (OV)				
2	$V_{DD}$	-	POWER SUPPLY	5V				
3	Vo	ı		FOR LCD DRIVE				
			REGISTER SELECT SIGNAL					
4	4 RS	H/L	H: DATA INPUT					
			L: INSTRUCTION INPUT					
5	R/W	11/1	H: DATA READ (MODULE>MPU)					
3   K/W	H/L	L: DATA WRITE (MODULE <mpu)< td=""></mpu)<>						
6	Е	H,H->L	ENABLE					
7~14	DB0~DB7	H/L	DATA BUS-SOFTWARE	SELECTABLE 4 OR 8 BIT MODE.				
15	Α	-	ANODE	LED BACKLIGHT				
16	K	-	CATHODE	LED BACKLIGHT				



BLOCK DIAGRAM \ 1/16 DUTY, 1/5 BIAS DB 7 DRIVER DB 0 LCD SEG 40 SE SE CONTROLLER RS LSI Vss COM 16 LCD PANEL V<sub>DD</sub> Vo: DRIVER LED BACKLIGHT

**ELECTRICAL CHARACTERISTICS** 

 $V_{DD}$ =4.7V to 5.3V,  $T_A$ =25°C

ITEM		SYMBOL	CONDITION	STANDARD VALUE			UNIT	
				MIN.	TYP.	MAX.	UNII	
SUPPLY VOLTAGE FOR LOGIC		V <sub>DD</sub> -Vss	-	-	5.0	-	٧	
SUPPLY CURRENT FOR LOGIC		IDD	V <sub>DD</sub> =5V	1	2.0	3.0	mA	
HIGH		٧ <sub>IH</sub>	ı	2.2	-	$v_{DD}$	٧	
INPUT VOLI	INPUT VOLTAGE LOW		٧ <sub>IL</sub>	1	0	-	0.6	٧
OUTDUT VO	HIGH		V <sub>OH</sub>	ı	2.4	-	_	٧
OUTPUT VOLTAGE		LOW	V <sub>OL</sub>	-	1	_	0.4	٧
VOLTAGE			Vf	ı	ı	4.2	4.6	٧
*LED BACKLIGHT	CURRENT		lf	ı	ı	210	_	mA
	POWER CUNSUMPTION		PD	-	-	882	_	mW
	LUMINOUS		L	lf=210mA	70	-	_	cd/m <sup>2</sup>
	COLOR		-	_	_	-	_	nm

#### ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST	STANDAR	D VALUE	UNIT
IIEM	SIMDUL	CONDITION	MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	VDD-Vss	Ta=25°C	4.7	5.3	٧
SUPPLY VOLTAGE FOR LCD DRIVE	VDD-Vo	_	4.2@50°C	4.8@0°C	٧
INPUT VOLTAGE	٧١	Ta=25°C	Vss	$v_{DD}$	٧
OPERATING TEMPERATURE	Tons	LCM-S	0	50	.c
OPERATING TEMPERATURE	Topr	LCM-H	-20	70	.c
STORAGE TEMPERATURE	Tstg	LCM-S	-20	70	.c
STORAGE TEMPERATURE		LCM-H	-30	85	.c

\*ONLY APPLIES TO MODULES WITH BACKLIGHT

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SA/BC

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**Authorized Distributor** 

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