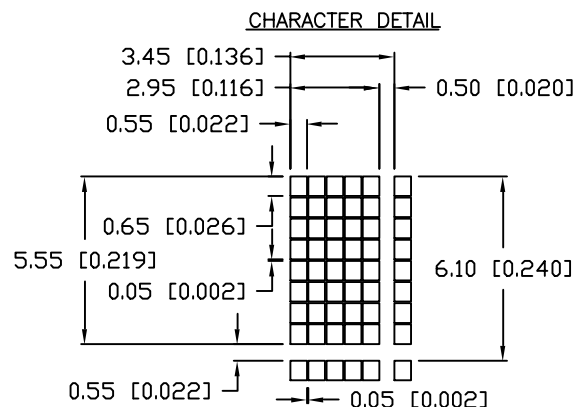


UNCONTROLLED DOCUMENT

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.



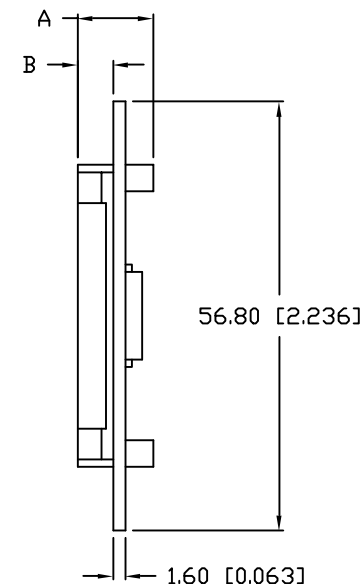
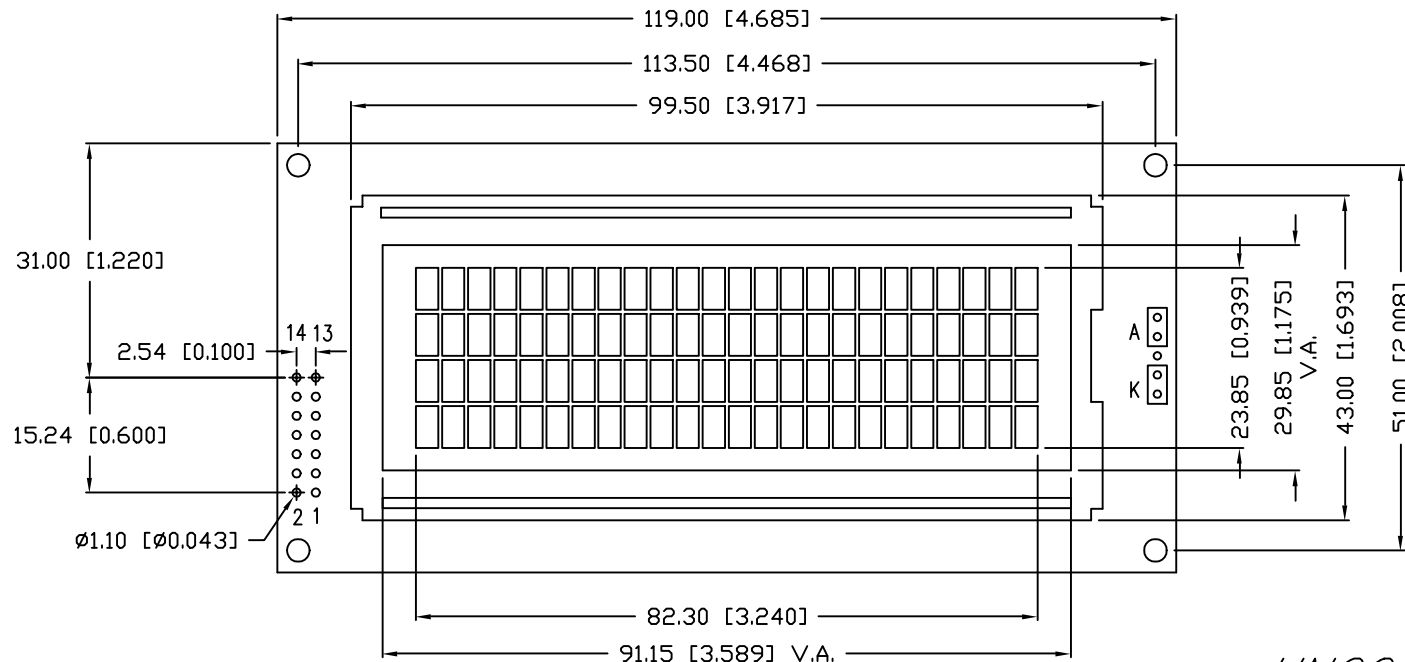
PART NUMBER
LCM-X02404DXX

REV.

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

DATE

TYPE	DIM.	A	B
WITH BACKLIGHT		14.5	9.9
NO BACKLIGHT		10.0	4.7



UNCONTROLLED DOCUMENT

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

REV.

PART NUMBER

LCM-X02404DXX

5.55mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 24 x 4 LCD
CHARACTER MODULE, 1/32 DUTY, 1/5 BIAS.

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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.

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DRAWN BY:

CHECKED BY:

APPROVED BY:

DATE: 10-21-98

SA/BC

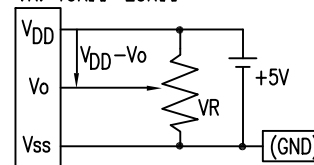
PAGE: 1 OF 2

SCALE: N/A

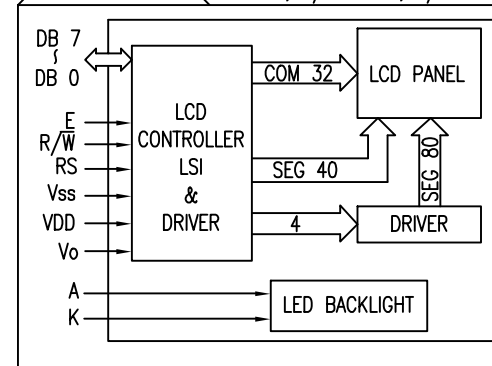
PIN CONFIGURATION

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.
	A		ANODE FOR BACKLIGHT
	K		CATHODE FOR BACKLIGHT

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



BLOCK DIAGRAM 24 x 4, 1/32 DUTY, 1/5 BIAS



ELECTRICAL CHARACTERISTICS

V_{DD}=4.5V to 5.5V, 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	—	2.5	5.0	mA
INPUT VOLTAGE	HIGH	V _{IH}	—	2.2	—	V _{DD} V
	LOW	V _{IL}	—	-0.3	—	0.6 V
OUTPUT VOLTAGE	HIGH	V _{OH}	—	2.4	—	V
	LOW	V _{OL}	—	—	0.4	V
*LED BACKLIGHT	VOLTAGE	V _f	I _f =360mA	—	4.2	4.6 V
	CURRENT	I _f	—	—	220	mA
	POWER CONSUMPTION	PD	—	—	1512	mW
	LUMINOUS	L	I _f =360mA	70	—	cd/m ²
	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 _{DD} -V _{SS}	T _a =25°C	4.5	5.5	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _O	T _a =25°C	V _{DD} -13.5V	V _{DD} +0.3	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	LCM-S	0	50	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	LCM-S	-20	70	°C
		LCM-H	-30	85	°C

REV.

PART NUMBER

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			SCALE: N/A