

UNCONTROLLED DOCUMENT

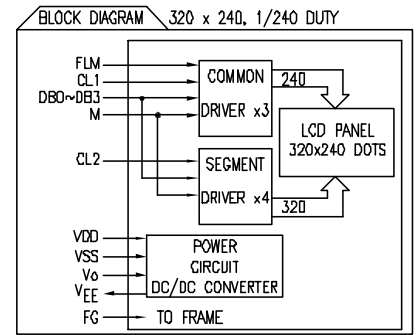
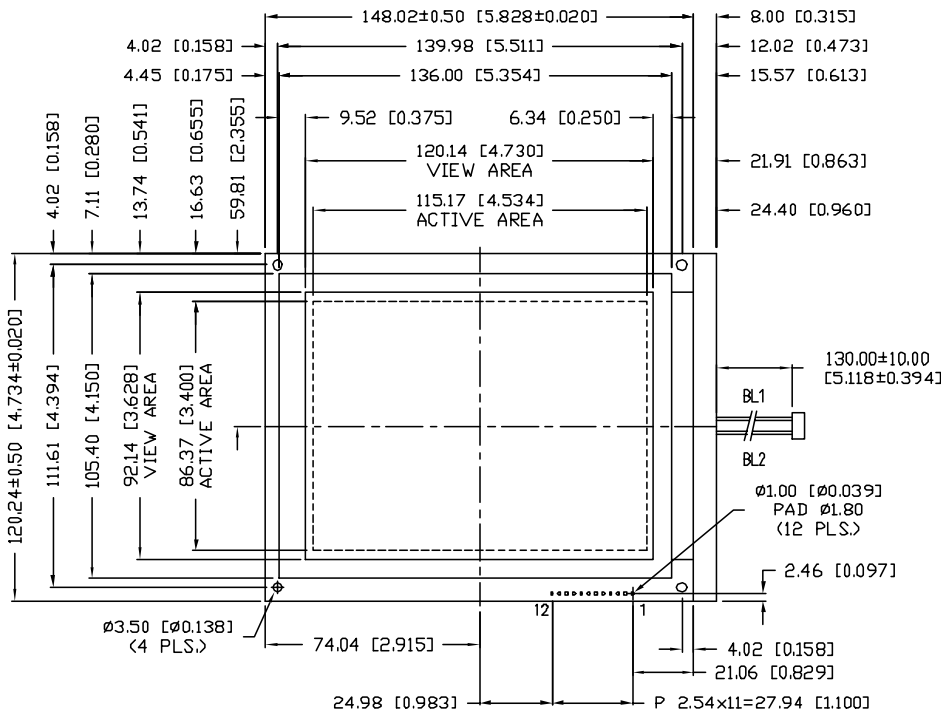
PART NUMBER  
LCM-X320240GXX/C(-X)

REV.

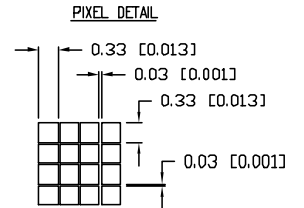
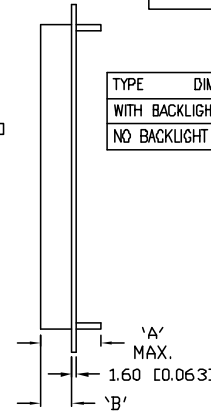
REV. E.C.N. NUMBER AND REVISION COMMENTS DATE

P/N PREFIX/SUFFIX TABLE		
LCM-X	GXX/C	DESCRIPTION
STANDARD	S	SR/C STN, REFLECTIVE
HIGH TEMP.	H	WF/C-C FSTN, TRANSFLECTIVE(W/GCFL BACKLIGHT)

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



TYPE	DIM.	A	B
WITH BACKLIGHT		20.5	10.5
NO BACKLIGHT		10.2	5.2



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

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320 x 240 DOT MATRIX GRAPHIC MODULE, 1/4 VGA,  
WITH NEGATIVE CHARGE PUMP, 1/64 DUTY, MONOCHROME.

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.

DRAWN BY: SA/DU CHECKED BY: APPROVED BY: DATE: 3-31-99  
PAGE: 1 OF 2  
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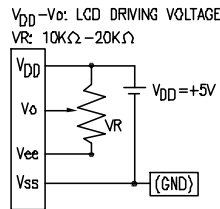
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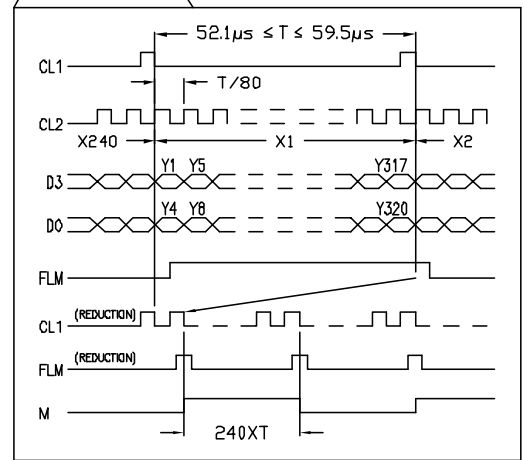
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PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	-	GND
2	V <sub>DD</sub>	-	POWER SUPPLY FOR LOGIC CIRCUIT
3	V <sub>a</sub>	-	LCD CONTRAST VOLTAGE
4	FLM	H/L	THE FLM SIGNAL INDICATES THE BEGINNING OF EACH DISPLAY CYCLE.
5	CL1	H->L	DATA LATCH PULSE
6	CL2	H->L	DATA SHIFT CLOCK PULSE
7	M	H/L	CONTROL SIGNAL FOR AC DRIVING
8~11	D0~D3	H/L	DATA BUS
12	V <sub>EE</sub>	-	POWER SUPPLY FOR LCD DRIVING CIRCUIT



INTERFACE SIGNALS



ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	-	4.5	5.0	5.5	V
SUPPLY CURRENT FOR LOGIC	I <sub>DD</sub>	NOTE 1	-	16.0	-	mA
SUPPLY VOLTAGE FOR LCD DRIVER	V <sub>DD</sub> -V <sub>o</sub>	V <sub>DD</sub> =5V	22.4	23.5	24.3	V
SUPPLY CURRENT FOR LCD	I <sub>EE</sub>	NOTE 1	-	5.0	-	mA
INPUT VOLTAGE*	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub>	V
	V <sub>IL</sub>	-	-	-	0.6	V
OUTPUT VOLTAGE*	V <sub>OH</sub>	-	2.4	-	-	V
	V <sub>OL</sub>	-	-	-	0.4	V
CCFL DRIVING VOLTAGE	V <sub>CCFL</sub>	T <sub>a</sub> =25°C	-	300	-	V <sub>rms</sub>
CCFL FREQUENCY	f <sub>CCFL</sub>	-	-	70	85	KHz
CCFL CURRENT	I <sub>CCFL</sub>	T <sub>a</sub> =25°C	4	5	6	mA
CCFL STARTING DISCHARGE VOLTS	-	T <sub>a</sub> =5°C	1000	-	-	V
BRIGHTNESS	-	SURFACE AREA	80	-	-	cd/m <sup>2</sup>
CCFL OPERATING LIFETIME	-	T <sub>a</sub> =25°C	-	10K	-	HOURS

NOTE 1: V<sub>DD</sub>-V<sub>SS</sub>=5.0V  
V<sub>DD</sub>-V<sub>o</sub>=23.0V

\*APPLIED TO TERMINALS FLM, CL1, CL2, D0~D3.

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	-	6.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>o</sub>	T <sub>a</sub> =25°C	-	27.0	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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