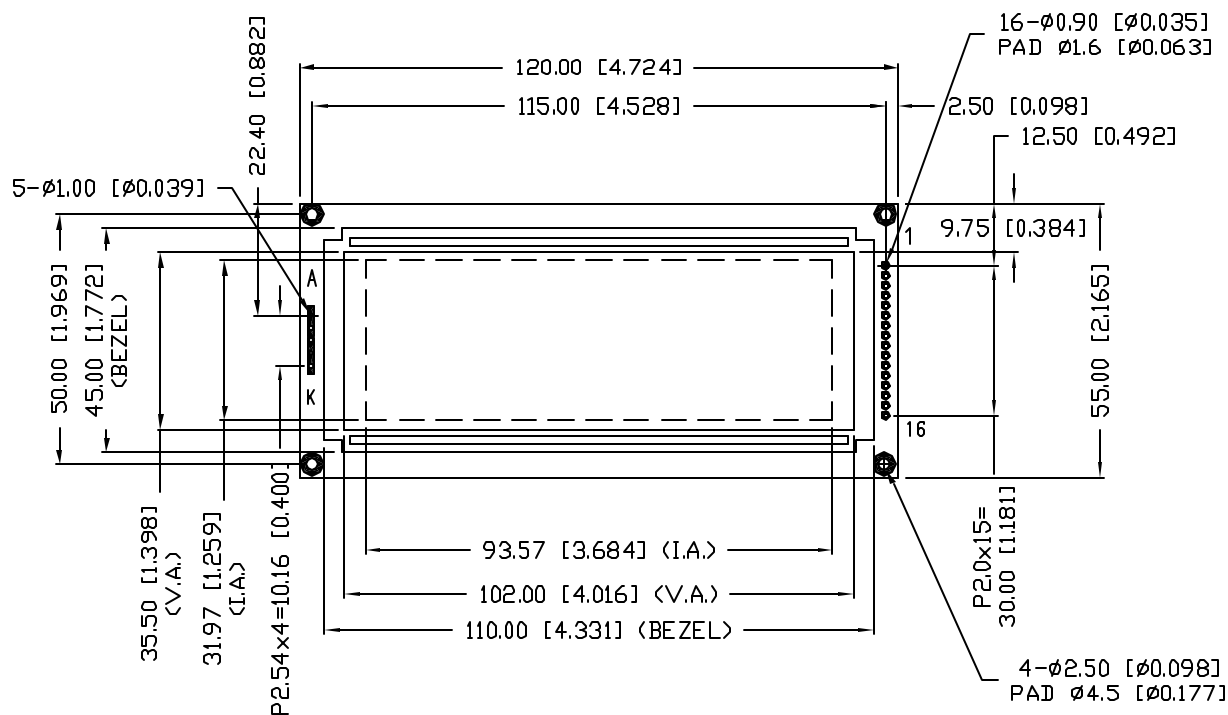
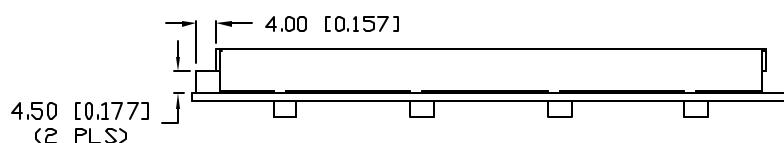
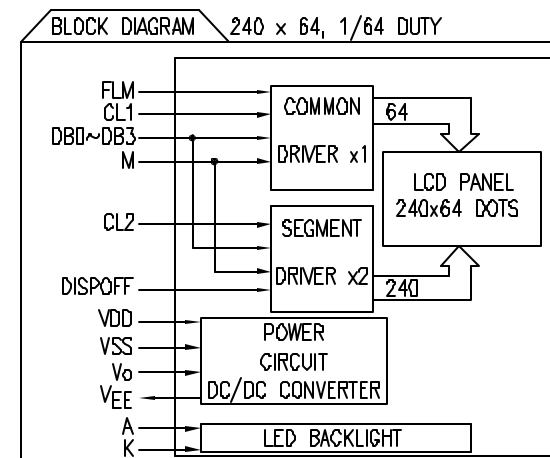
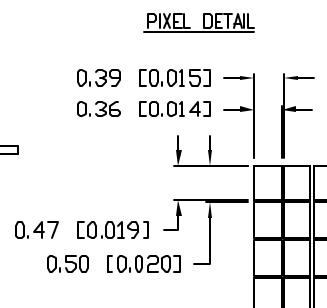


TYPE	DIM.	A	B
WITH BACKLIGHT		13.7	8.8
NO BACKLIGHT		9.7	4.8



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



UNCONTROLLED DOCUMENT

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-0.00 -0.00

REV.

PART NUMBER

LCM-X24064GXX/E

240 x 64 GRAPHIC LCD MODULE, 5V, 1/64 DUTY,
DC/DC BUILT IN.

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RELIABILITY NOTE

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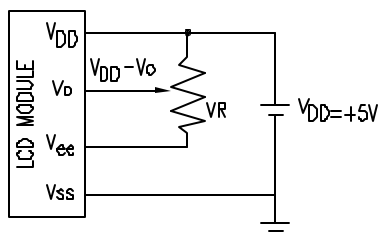
PAGE: 1 OF 2

SCALE: N/A

PIN CONFIGURATION

PIN #	SYMBOL	LEVEL	FUNCTION
1	VSS	-	GROUND
2	VDD	5V	POWER SUPPLY FOR LOGIC
3	VO	-	CONTRAST ADJUST VOLTAGE
4	FLM	H	FIRST LINE MARKER
5	CL1	H->L	THE CL1 LATCHES SERIAL DATA IN SHIFT REGISTERS
6	CL2	H->L	CLOCK PULSE FOR SEGMENT SHIFT REGISTER
7	M	H/L	CONTROL SIGNAL FOR AC DRIVING
8	/DISPOFF	L	DISPLAY OFF
9	DB0	H/L	DATA BIT 0
10	DB1	H/L	DATA BIT 1
11	DB2	H/L	DATA BIT 2
12	DB3	H/L	DATA BIT 3
13	VEE	-	POWER SUPPLY VOLTAGE (LCD)
14	FGND	-	FRAME GROUND
15	A	-	BACKLIGHT LED (ANODE)
16	K	-	BACKLIGHT LED (CATHODE)

$V_{DD}-V_o$: LCD DRIVING VOLTAGE
VR: 10K Ω -20K Ω



ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
POWER SUPPLY FOR LOGIC	$V_{DD}-V_{SS}$	-	4.5	5.0	5.5	V
POWER SUPPLY FOR LCD	$V_{EE}-V_{SS}$	-	-14.1	-14.4	-14.8	V
SUPPLY CURRENT FOR LOGIC	I_{DD}	$V_{DD}=5V$	-	15.6	-	mA
POWER SUPPLY CURRENT LCD	I_{EE}	-	-	2.4	-	mA
CONTRAST ADJUST VOLTAGE	$V_{DD}-V_o$	$T_a=25^{\circ}C$	8.7	9.8	11.2	V
INPUT VOLTAGE	HIGH	V_{IH}	2.2	-	V_{DD}	V
	LOW	V_{IL}	0	-	0.6	V
OUTPUT VOLTAGE	HIGH	V_{OH}	2.4	-	-	V
	LOW	V_{OL}	-	-	0.4	V
*LED BACKLIGHT	VOLTAGE	V_f	$I_f=60mA$	-	3.4	3.6 V
	CURRENT	I_f	-	-	60	mA
	POWER CONSUMPTION	PD	-	-	204	mW
	LUMINOUS	L	$I_f=60mA$	120	140	175 cd/m ²
	COLOR	-	WHITE	-	-	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	$V_{DD}-V_{SS}$	-	0	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	$V_{DD}-V_{EE}$	-	0	30	V
INPUT VOLTAGE	V_I	-	V_{SS}	V_{DD}	V
OPERATING TEMPERATURE	T_{opr}	LCM-S	0	50	$^{\circ}C$
		LCM-H	-20	70	$^{\circ}C$
STORAGE TEMPERATURE	T_{stg}	LCM-S	-20	70	$^{\circ}C$
		LCM-H	-30	85	$^{\circ}C$

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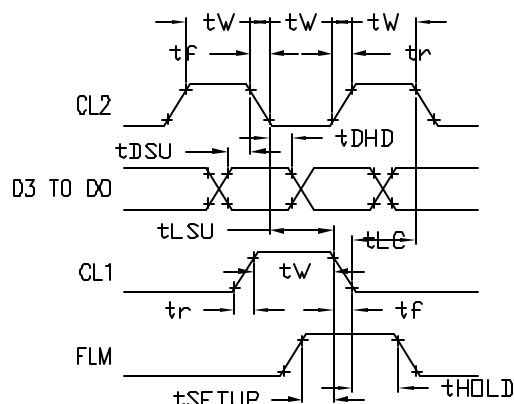
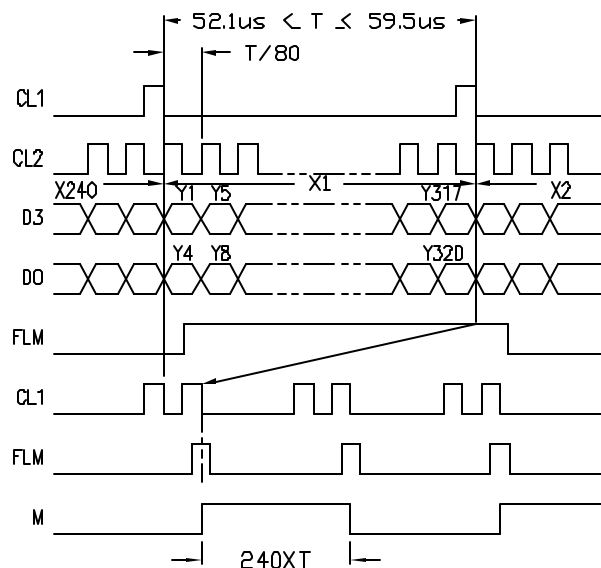
DATE: 1.19.04

PAGE: 2 OF 2

SCALE: N/A

TIMING SPECIFICATIONS

PARAMETER	SYMBOL	MIN	MAX	UNIT
CLOCK FREQUENCY	f _{CP}	—	8	MHz
CLOCK PULSE WIDTH	t _W	45	—	ns
RISE, FALL TIME	t _r , t _f	—	15	ns
DATA SET-UP TIME	t _{DSU}	20	—	ns
DATA HOLD TIME	t _{DHD}	20	—	ns
CL1 SET-UP TIME	t _{LSU}	80	—	ns
CL1 → CL2 TIME	t _{LC}	80	—	ns
FLM SET-UP TIME	t _{setup}	100	—	ns
FLM HOLD TIME	t _{hold}	100	—	ns
M DELAY TIME	t _{DF}	—	300	ns



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