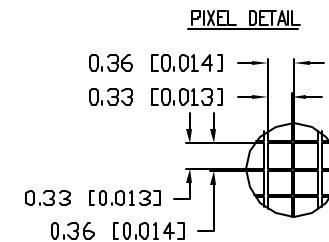
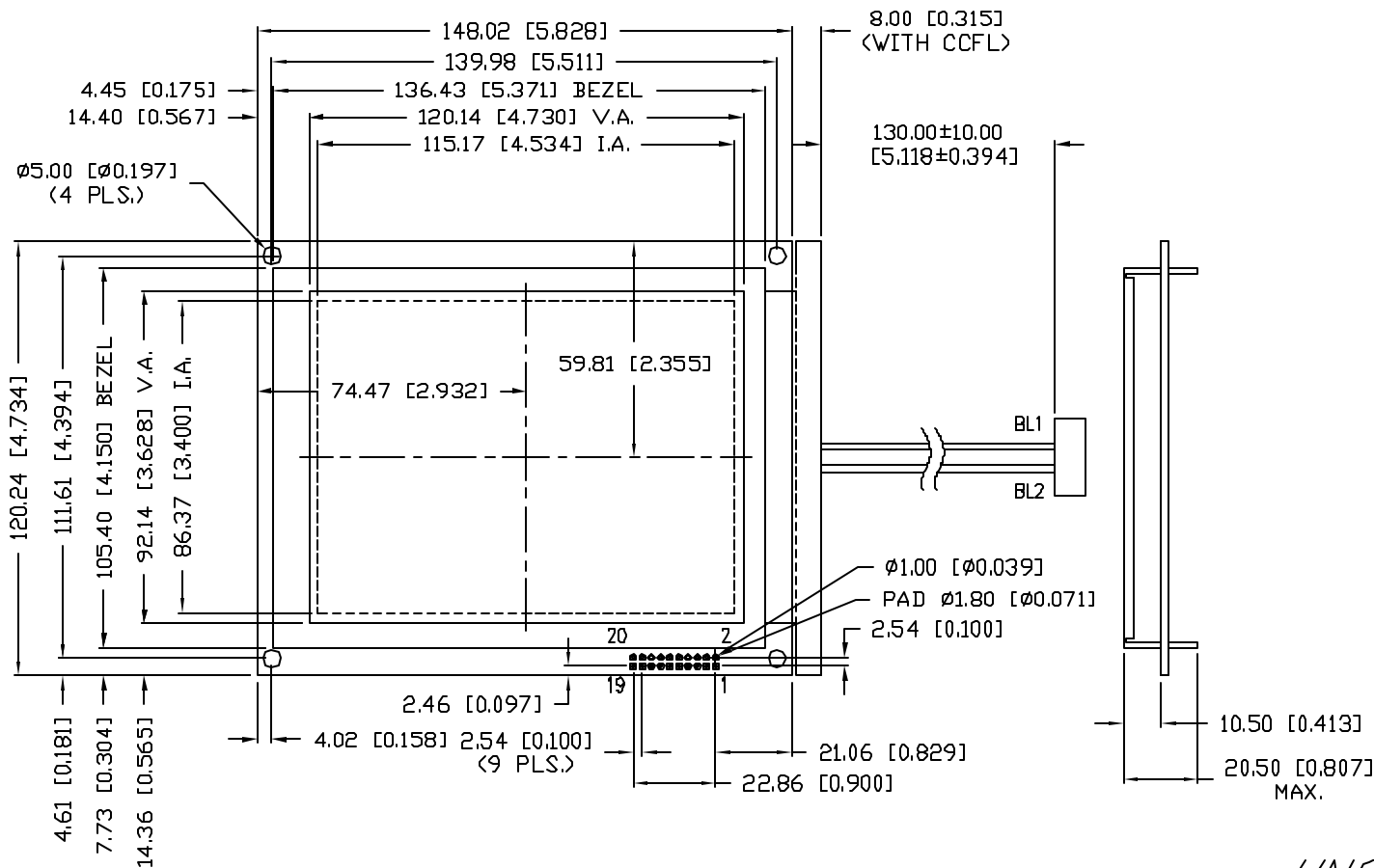


P/N PREFIX/SUFFIX TABLE			
LCM-X	GXX/D(-X)	DESCRIPTION	
STANDARD	S	SR/D	STN, REFLECTIVE
HIGH TEMP.	H	WF/D-C	FSTN, TRANSFLECTIVE (W/CCFL BACKLIGHT)

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



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

REV.

PART NUMBER

LCM-X320240GXX/D

1/4 VGA, 320 x 240 DOT MATRIX GRAPHIC LCD MODULE,
DC-DC, 1/240 DUTY, INTEGRATED CONTROLLER; SED1335.

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RELIABILITY NOTE

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DATE: 8.20.03

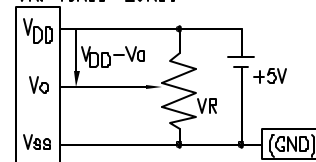
PAGE: 1 OF 3

SCALE: N/A

PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	0V	POWER SUPPLY GROUND
2	V _{DD}	5V	POWER SUPPLY VOLTAGE
3	V ₀	-	CONTRAST ADJUSTMENT VOLTAGE
4	RD	L	READ SIGNAL
5	WR	L	WRITE SIGNAL
6	A ₀	H/L	DATA TYPE SELECT
7~14	DB0~DB7	H/L	DATA BUS LINE
15	CS	-	CHIP SIGNAL
16	RES	-	RESET SIGNAL
17	VEE	-	POWER SUPPLY VOLTAGE FOR LCD
18	FG	-	FRAME GND
19	NC	-	NO CONNECTION
20	NC	-	NO CONNECTION

V_{DD}-V₀: LCD DRIVING VOLTAGE
VR: 10KΩ-20KΩ



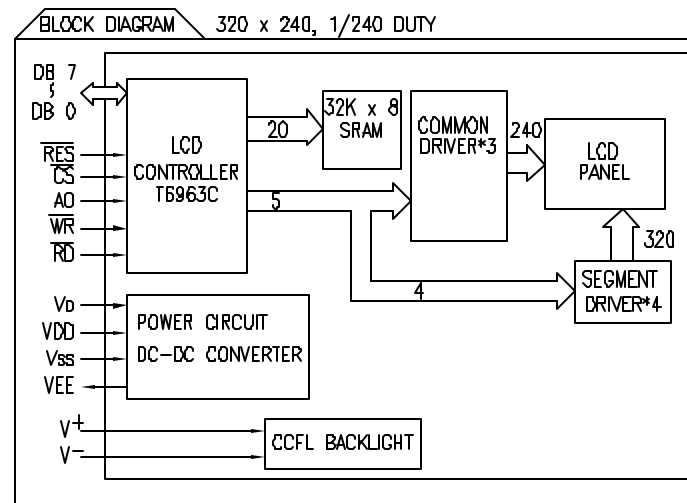
ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	-	4.5	5.0	5.5	V
SUPPLY CURRENT FOR LOGIC	I _{DD}	NOTE 1	-	6.0	-	mA
SUPPLY VOLTAGE FOR LCD DRIVER	V _{EE} -V _{SS}	-	-22.4	-23.5	-24.3	V
SUPPLY CURRENT FOR LCD	I _{EE}	NOTE 1	-	16	25	mA
INPUT VOLTAGE*	HIGH	V _{IH}	-	2.2	-	V _{DD}
	LOW	V _{IL}	-	-	0.6	V
CCFL DRIVING VOLTAGE	V _{CCFL}	Ta=25°C	-	300	-	V _{rms}
CCFL FREQUENCY	f _{CCFL}	-	-	70	85	KHz
CCFL CURRENT	I _{CCFL}	Ta=25°C	4	5	6	mA
CCFL STARTING DISCHARGE VOLTS	-	Ta=5°C	1000	-	-	V
BRIGHTNESS	-	SURFACE AREA	-	80	-	cd/m ²
CCFL OPERATING LIFETIME	-	Ta=25°C	-	10K	-	HOURS

NOTE 1: V_{DD}-V_{SS}=5.0V
V_{DD}-V₀=23.5V

*APPLIED TO TERMINALS FL_M, CL₁, CL₂, DO~D₃, DISOFF.

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ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	Ta=25°C	-	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V ₀	Ta=25°C	-	30.0	V
INPUT VOLTAGE	V _I	Ta=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

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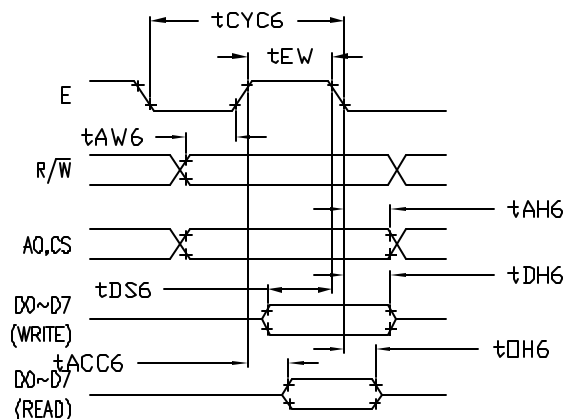


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BC			PAGE: 2 OF 3
			SCALE: N/A

TIMING CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT
SYSTEM CYCLE TIME	t _{CYC}	425	—	ns
ADDRESS SETUP TIME	t _{AW}	30	—	ns
ADDRESS HOLD TIME	t _{AH}	10	—	ns
DATA SETUP TIME	t _{DS}	120	—	ns
DATA HOLD TIME	t _{DH}	10	—	ns
OUTPUT DISABLE TIME	t _{OH}	10	50	ns
ACCESS TIME	t _{ACC}	—	120	ns
ENABLE PULSE WIDTH	(READ)	t _{EW}	220	ns
	(WRITE)		220	ns



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