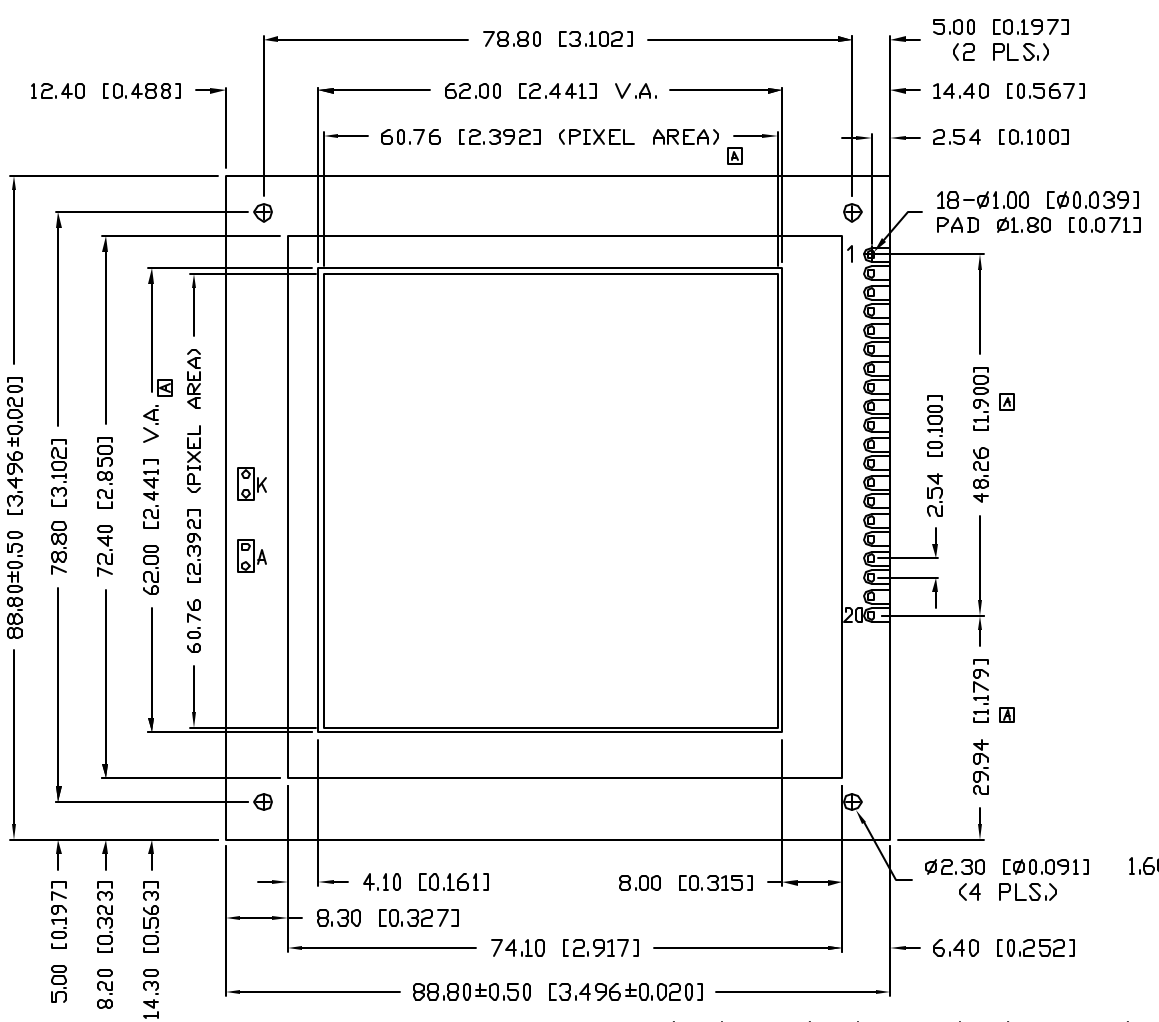
UNCONTROLLED DOCUMENT

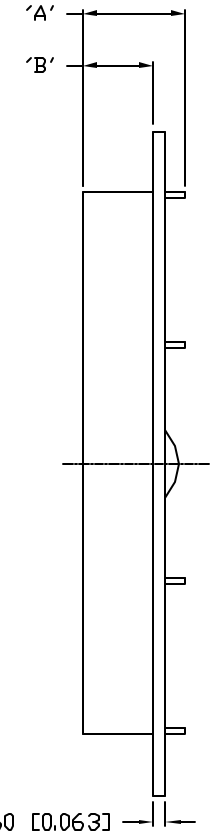
PART NUMBER	REV.
LCM-X160160GXX	A

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

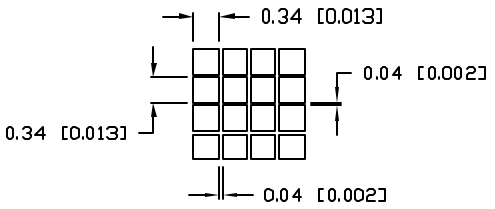
TYPE DIM.	A	B
WITH BACKLIGHT	13.8	9.4
NO BACKLIGHT	9.7	4.8

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #10738. & #10BRDR.	5.21.01

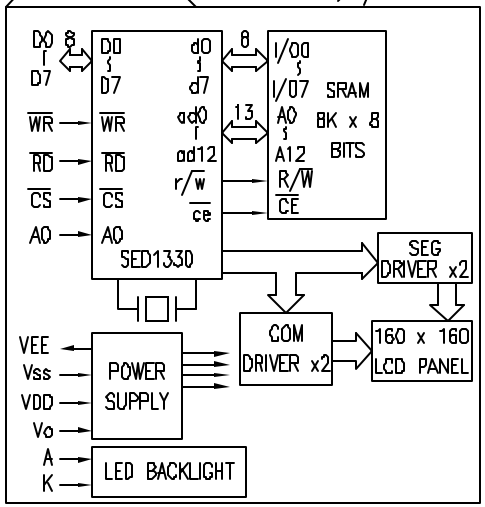




PIXEL DETAIL



[A] BLOCK DIAGRAM 160 x 160, 1/160 DUTY



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

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REV.	PART NUMBER
A	LCM-X160160GXX

160 x 160 DOT MATRIX GRAPHIC MODULE,
1/160 DUTY, STN WITH NEGATIVE CHARGE PUMP.

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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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PART NUMBER	REV.
LCM-X160160GXX	A

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #10738. & #10BRDR.	5.21.01

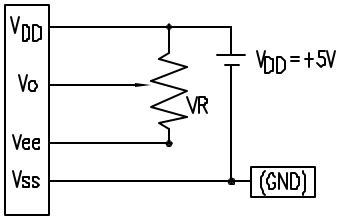
PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION	
1	Vss	0V	GND	
2	V_{DD}	5V	SUPPLY VOLTAGE FOR LOGIC	
3	Vo	–	CONTRAST VOLTAGE FOR LCD DRIVE(VARIABLE)	
4	$\overline{RD}$	L	READ SIGNAL	
5	$\overline{WR}$	L	WRITE SIGNAL	
6	$\overline{CS}$	L	CHIP SELECT	
7	A0	H/L	DATA TYPE SELECT	
8~15	DB0~DB7	H/L	DATA BUS	
16	$\overline{RES}$	L	RESET SIGNAL (NOTE 1)	
17	VEE	–	POWER SUPPLY VOLTAGE FOR LCD	
18	A	4.2V	ANODE	LED BACKLIGHT
19	K	–	CATHODE	LED BACKLIGHT
20	(N/C)	–	NO CONNECTION	

NOTES:

1. $\overline{RES}$ IS A SCHMITT TRIGGER INPUT. THE PULSEWIDTH ON $\overline{RES}$ MUST BE AT LEAST 200μs. PULSES OF MORE THAN A FEW SECONDS WILL CAUSE DC VOLTAGES TO BE APPLIED TO THE LCD PANEL.

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



ELECTRICAL CHARACTERISTICS

V_{DD}=4.75V to 5.25V, T_A=25°C

ITEM		SYMBOL	CONDITION	STANDARD VALUE			UNIT
				MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC		V_{DD}-Vss	–	4.75	5.0	5.25	V
SUPPLY VOLTAGE FOR LCD DRIVE		V_{DD}-VEE	–	–	18.2	–	V
SUPPLY CURRENT FOR LOGIC		I_{DD}	–	–	–	20	mA
INPUT VOLTAGE	HIGH	V_{IH}	–	0.2	–	V_{DD}	V
	LOW	V_{IL}	–	0	–	0.8	V
OUTPUT VOLTAGE	HIGH	V_{OH}	I_{OH}=-3.0mA	2.4	–	–	V
	LOW	V_{OL}	I_{OL}=3.0mA	–	–	0.4	V
*LED BACKLIGHT	VOLTAGE	Vf	If=560mA	–	4.2	4.5	V
	CURRENT	If	–	–	560	–	mA
	POWER CUNSUMPTION	PD	–	–	2.8	–	W
	LUMINOUS	L	If=560mA	60	–	–	cd/m^2
	COLOR	–	–	–	570	–	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE MIN	STANDARD VALUE MAX	UNIT
SUPPLY VOLTAGE FOR LOGIC	V_{DD}-Vss	Ta=25°C	0	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V_{DD}-VEE	–	17.2@40°C	19.2@0°C	V
INPUT VOLTAGE	V_I	Ta=25°C	Vss	V_{DD}	V
OPERATING TEMPERATURE	Topr	LCM-S	0	50	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	Tstg	LCM-S	-20	70	°C
		LCM-H	-30	85	°C

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