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[Lumex, Inc.](#)  
[LCM-S160160GSF](#)

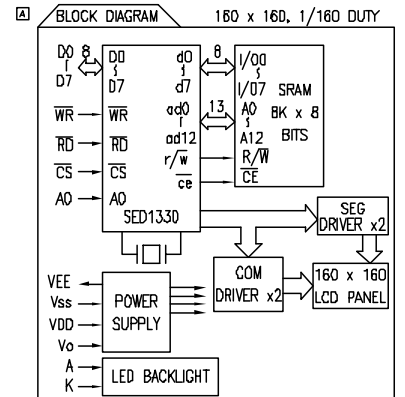
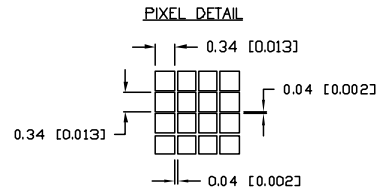
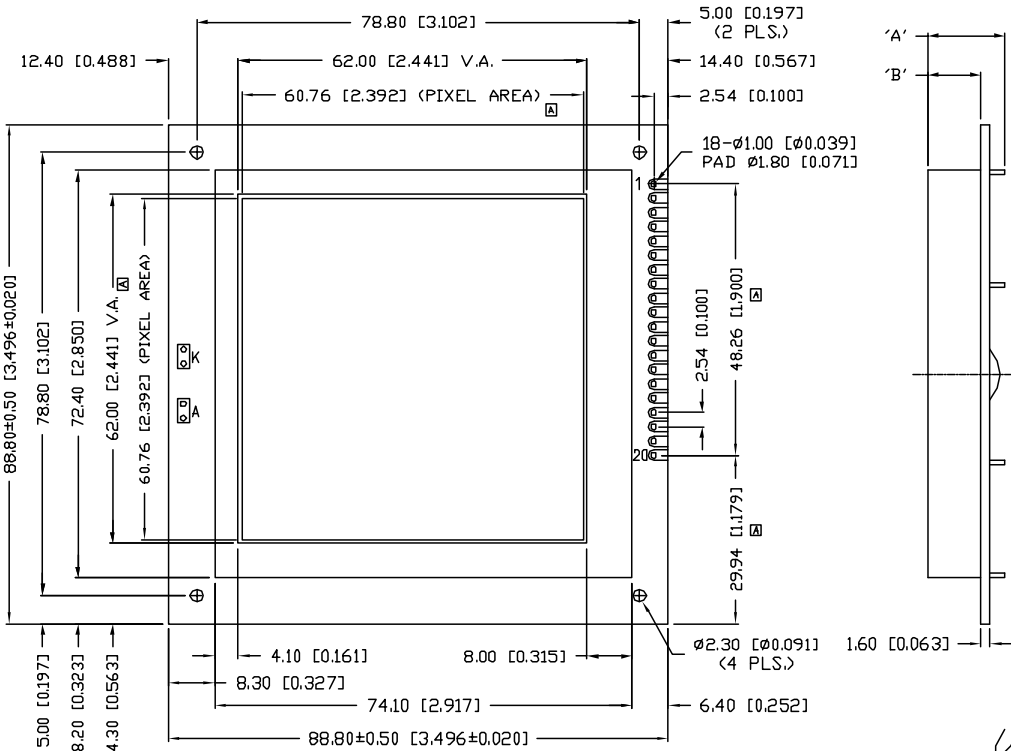
For any questions, you can email us directly:  
[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

UNCONTROLLED DOCUMENT

PART NUMBER		REV.
LCM-X160160GXX		A
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #10738. & #10BRDR.	5.21.01

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

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



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.	

**CONFIDENTIAL INFORMATION**  
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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: 12.1.98
sa/ct			PAGE: 1 OF 2
			SCALE: N/A

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.038), 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

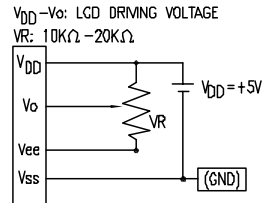
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PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	0V	GND
2	V <sub>DD</sub>	5V	SUPPLY VOLTAGE FOR LOGIC
3	V <sub>0</sub>	-	CONTRAST VOLTAGE FOR LCD DRIVE(VARIABLE)
4	R <sub>D</sub>	L	READ SIGNAL
5	W <sub>R</sub>	L	WRITE SIGNAL
6	C <sub>S</sub>	L	CHIP SELECT
7	A <sub>D</sub>	H/L	DATA TYPE SELECT
8~15	DB0~DB7	H/L	DATA BUS
16	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:

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



ELECTRICAL CHARACTERISTICS		V <sub>DD</sub> =4.75V to 5.25V, T <sub>A</sub> =25°C				
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	-	4.75	5.0	5.25	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>EE</sub>	-	-	18.2	-	V
SUPPLY CURRENT FOR LOGIC	I <sub>DD</sub>	-	-	-	20	mA
INPUT VOLTAGE	HIGH	V <sub>IH</sub>	-	0.2	-	V <sub>DD</sub>
	LOW	V <sub>IL</sub>	-	0	-	0.8
OUTPUT VOLTAGE	HIGH	V <sub>OH</sub>	I <sub>OH</sub> =-3.0mA	2.4	-	V
	LOW	V <sub>OL</sub>	I <sub>OL</sub> =3.0mA	-	0.4	V
*LED BACKLIGHT	VOLTAGE	V <sub>f</sub>	I <sub>f</sub> =560mA	4.2	4.5	V
	CURRENT	I <sub>f</sub>	-	560	-	mA
	POWER CONSUMPTION	P <sub>D</sub>	-	2.8	-	W
	LUMINOUS	L	I <sub>f</sub> =560mA	60	-	cd/m <sup>2</sup>
	COLOR	-	-	570	-	nm

\*ONLY APPLIES TO MODULES WITH BACKLIGHT

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	0	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>EE</sub>	-	17.2@40°C	19.2@0°C	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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