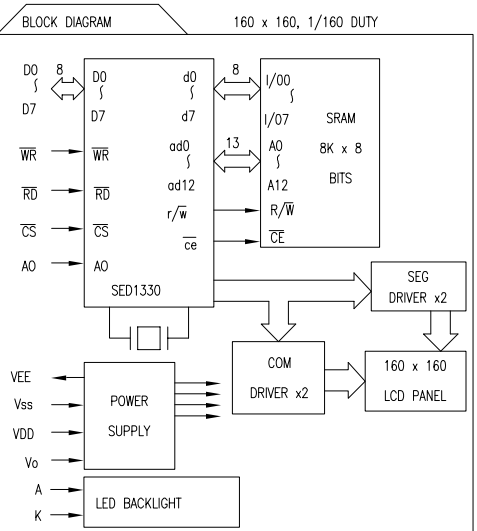
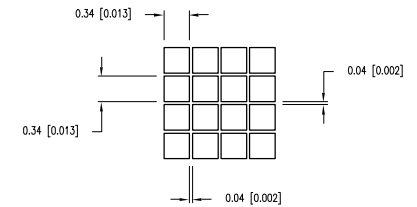


PIXEL DETAIL



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), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.=+DECIMAL PRECISION -0.00, MAX.=+0.00 -DECIMAL PRECISION

**LUMEX**  
Creating LED and LCD Solutions Together™

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

\*\*THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.\*\*

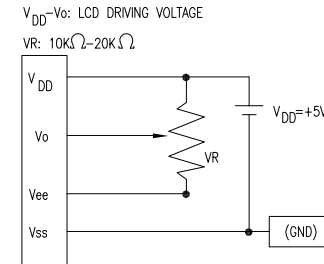
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UNCONTROLLED DOCUMENT  
DATE: 06.01.10 DRAWN BY: JH  
PAGE: 1 OF 2 CHKD BY: BC  
SCALE: N/A APRVD BY: SA  
UNIT: mm [INCH] (R)

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>O</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>O</sub>	H/L	DATA TYPE SELECT
8~15	DB0~DB7	H/L	DATA BUS
16	R <sub>ES</sub>	L	RESET SIGNAL (NOTE 1)
17	V <sub>EE</sub>	—	POWER SUPPLY VOLTAGE FOR LCD
18	A	4.2V	ANODE LED BACKLIGHT
19	K	—	CATHODE LED BACKLIGHT
20	(N/C)	—	NO CONNECTION

## NOTES:

1. RES IS A SCHMITT TRIGGER INPUT. THE PULSEWIDTH ON RES MUST BE AT LEAST 200 $\mu$ s. 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>	V
	LOW	V <sub>IL</sub>	0	—	0.8	V
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

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-H	-20	70	°C
STORAGE TEMPERATURE	T <sub>stg</sub>	LCM-H	-30	85	°C

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