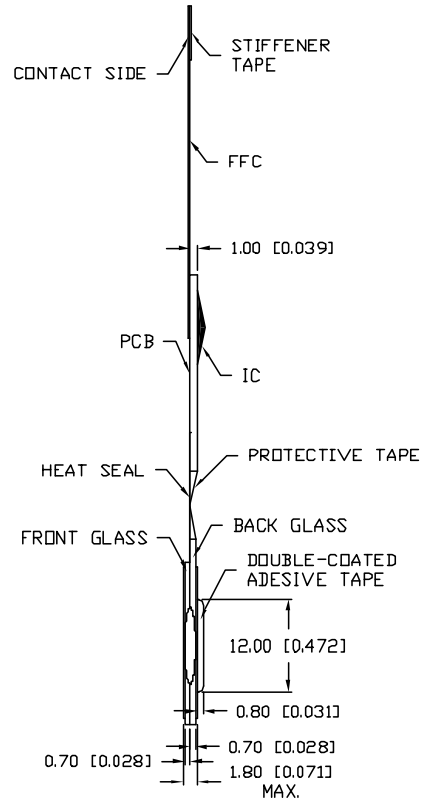
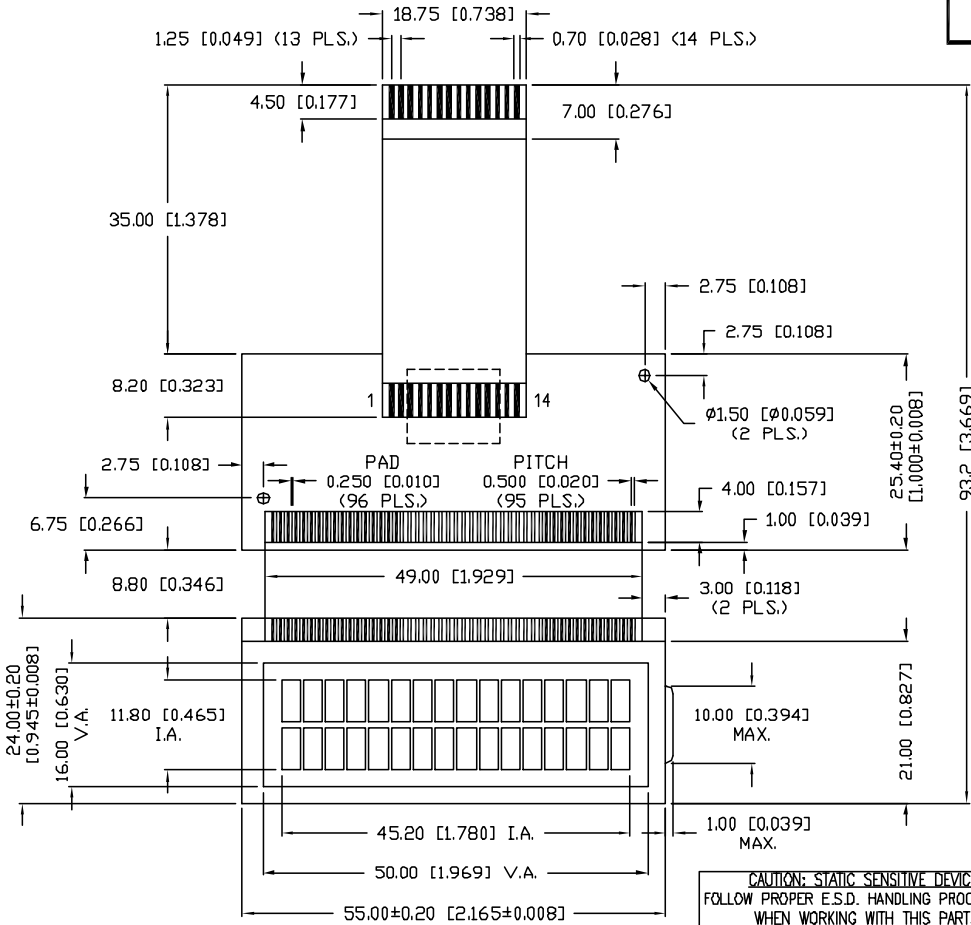


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REV.



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

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\*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 -0.00, MAX.=+0.00 -DECIMAL PRECISION

REV.	PART NUMBER LCM-S01602DSR-2K	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.	<b>LUMEX</b> INCORPORATED	290 E. HELLEN ROAD PALATINE, ILLINOIS 60067 PHONE: (847) 359-2790 WEB: <a href="http://www.lumex.com">http://www.lumex.com</a>
16 x 2 LCD MODULE, STN GRAY, REFLECTIVE, 12:00 VIEW, 1/16 DUTY, 1/5 BIAS.		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.	DRAWN BY: SA/BC	CHECKED BY: APPROVED BY: DATE: 4-17-00
			PAGE: 1 OF 2	SCALE: N/A

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PART NUMBER  
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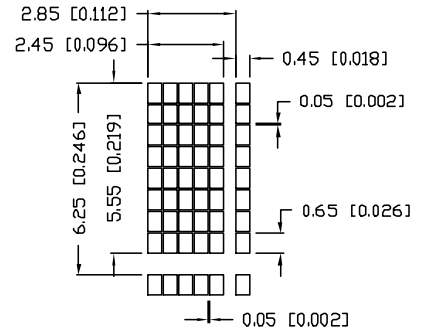
REV.

PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	-	POWER SUPPLY GND (I <sub>V</sub> ) 5V FOR LCD DRIVE
2	V <sub>DD</sub>	-	
3	V <sub>O</sub>	-	
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<<--MPU)
6	E	H,H->L	READ WRITE ENABLE
7~14	DB0~DB7	H/L	DATA BUS--SOFTWARE SELECTABLE 4 OR 8 BIT MODE.

CAUTION: STATIC SENSITIVE DEVICE  
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WHEN WORKING WITH THIS PART.

CHARACTER DETAIL



ELECTRICAL CHARACTERISTICS

V<sub>DD</sub>=4.5V to 5.5V, T<sub>A</sub>=-30°C TO +85°C

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
OPERATING VOLTAGE	V <sub>DD</sub>	-	4.5	-	5.5	V
INPUT VOLTAGE 1	V <sub>H1</sub>	-	2.2	-	V <sub>DD</sub>	V
	V <sub>L1</sub>	-	-0.3	-	0.6	V
INPUT VOLTAGE 2	V <sub>H2</sub>	-	V <sub>DD</sub> -1.0	-	V <sub>DD</sub>	V
	V <sub>L2</sub>	-	-0.2	-	1.0	V
OUTPUT VOLTAGE	V <sub>OH</sub>	I <sub>OH</sub> =0.205mA	2.4	-	-	V
	V <sub>OL</sub>	I <sub>OL</sub> =1.2mA	-	-	0.4	V
INPUT LEAKAGE CURRENT	I <sub>LKG</sub>	V <sub>IN</sub> =0 OR V <sub>DD</sub>	-	-	1.0	μA
INPUT LOW CURRENT	I <sub>IL</sub>	V <sub>DD</sub> =5V	-50	-125	-250	μA
EXTERNAL CLOCK FREQUENCY	f <sub>CLK</sub>	-	125	250	350	kHz
EXTERNAL CLOCK DUTY	duty	-	45	50	55	%
EXTERNAL CLOCK RISE TIME	t <sub>R</sub>	-	-	-	0.2	μs
EXTERNAL CLOCK FALL TIME	t <sub>F</sub>	-	-	-	0.2	μs
INTERNAL CLOCK FREQUENCY	f <sub>osc1</sub>	R <sub>f</sub> =91kΩ ±2%	190	270	255	kHz
LCD DRIVING VOLTAGE	V <sub>LCD</sub>	1/5 BIAS	4.6	-	10.0	V

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub>	T <sub>a</sub> =25°C	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>LCD</sub>	-	V <sub>DD</sub> -15	V <sub>DD</sub> +0.3	V
INPUT VOLTAGE	V <sub>I</sub>	T <sub>a</sub> =25°C	-0.3	V <sub>DD</sub> +0.3	V
OPERATING TEMPERATURE	T <sub>opr</sub>	-	0	50	°C
STORAGE TEMPERATURE	T <sub>stg</sub>	-	-20	70	°C

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