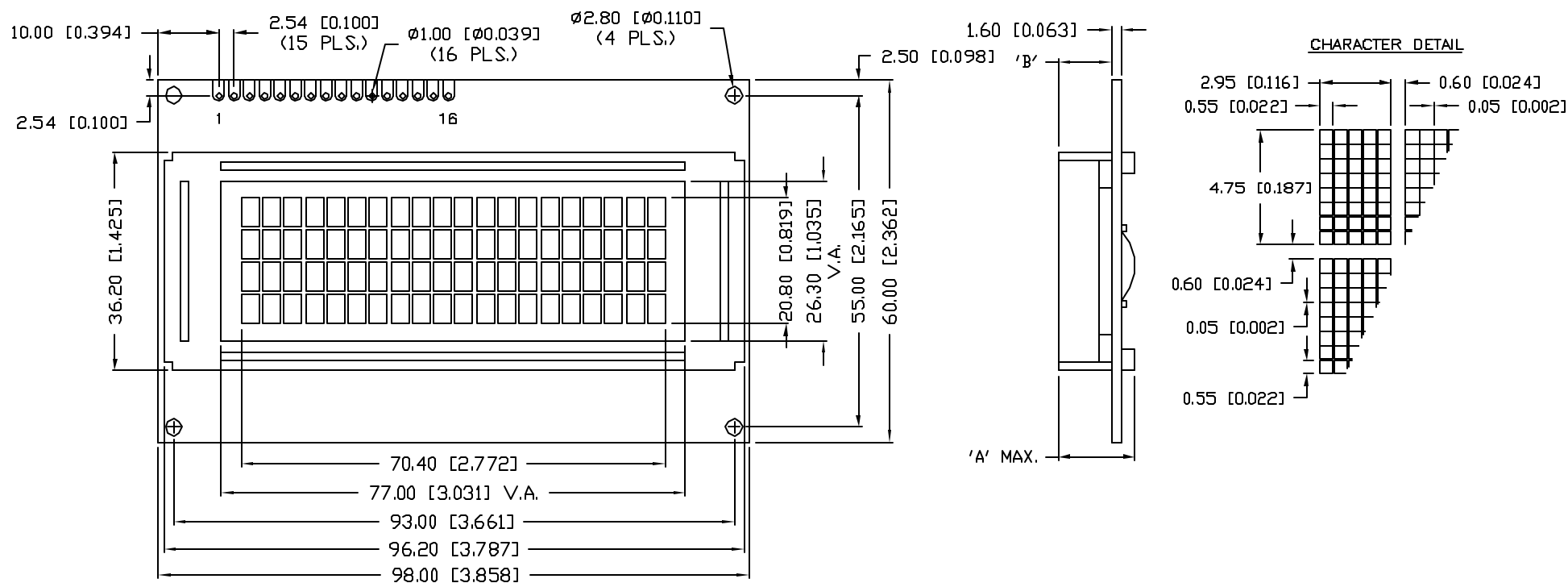


PART NUMBER  
LCM-S02004DSF-W

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

TYPE	DIM.	A	B
WITH BACKLIGHT		12.7	8.7
NO BACKLIGHT		8.8	4.8



\*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

PART NUMBER  
LCM-S02004DSF-W

4.75mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 4,  
LCD MODULE, 1/16 DUTY, 1/5 BIAS, STN GRAY.  
TRANSFLECTIVE, WHITE LED BACKLIGHT.

CONFIDENTIAL INFORMATION

CONFIDENTIAL AND PROPRIETARY

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.

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.



290 E. HELEN ROAD  
PALATINE, IL 60067-6976  
PHONE: +1.847.359.2790  
US WEB: [www.lumex.com](http://www.lumex.com)  
TW WEB: [www.lumex.com.tw](http://www.lumex.com.tw)

DRAWN BY:

JC

CHECKED BY:

APPROVED BY:

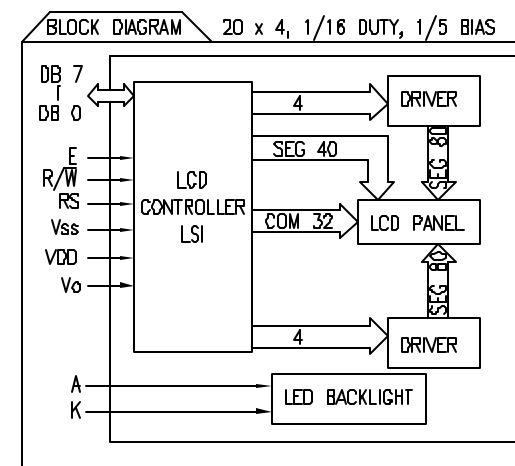
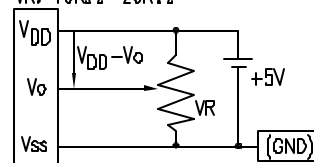
DATE: 12.4.03

PAGE: 1 OF 2

SCALE: N/A

PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V <sub>SS</sub>	-	POWER SUPPLY GND (0V) 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	ENABLE
7~14	DB0~DB7	H/L	DATA BUS—SOFTWARE SELECTABLE 4 OR 8 BIT MODE.
15	A	3.4V	ANODE LED BACKLIGHT
16	K	GND	CATHODE LED BACKLIGHT

V<sub>DD</sub>-V<sub>O</sub>: LCD DRIVING VOLTAGE  
VR: 10KΩ-20KΩ



ELECTRICAL CHARACTERISTICS		V <sub>DD</sub> =4.7V to 5.3V, T <sub>A</sub> =25°C				
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	-	MIN.	TYP.	MAX.	
SUPPLY CURRENT FOR LOGIC	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	3.0	4.0	mA
INPUT VOLTAGE	HIGH	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub> V
	LOW	V <sub>IL</sub>	-	0	-	0.6 V
OUTPUT VOLTAGE	HIGH	V <sub>OH</sub>	I <sub>OH</sub> =-0.205mA	2.4	-	V
	LOW	V <sub>OL</sub>	I <sub>OL</sub> =1.6mA	-	-	0.4 V
*LED BACKLIGHT	VOLTAGE	V <sub>f</sub>	I <sub>f</sub> =20mA	-	3.4	3.5 V
	CURRENT	I <sub>f</sub>	-	-	20	30 mA
	POWER CONSUMPTION	PD	-	-	68	105 mW
	LUMINOUS	L	I <sub>f</sub> =20mA	30	35	cd/m <sup>2</sup>
	COLOR	WHITE	-	-	-	nm

## ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	T <sub>a</sub> =25°C	-0.3	7	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>O</sub>	-	-0.3	12	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

\*ONLY APPLIES TO MODULES WITH BACKLIGHT

\*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-S02004DSF-W

4.75mm CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 4,  
LCD MODULE, 1/16 DUTY, 1/5 BIAS, STN GRAY.  
TRANSFLECTIVE, WHITE LED BACKLIGHT.

## 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.

## 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.



290 E. HELEN ROAD  
PALATINE, IL 60067-6976  
PHONE: +1.847.359.2790  
US WEB: www.lumex.com  
TW WEB: www.lumex.com.tw

DRAWN BY:

JC

CHECKED BY:

APPROVED BY:

DATE: 12.4.03

PAGE: 2 OF 1

SCALE: 2

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Lumex:

[LCM-S02004DSF-W](#)