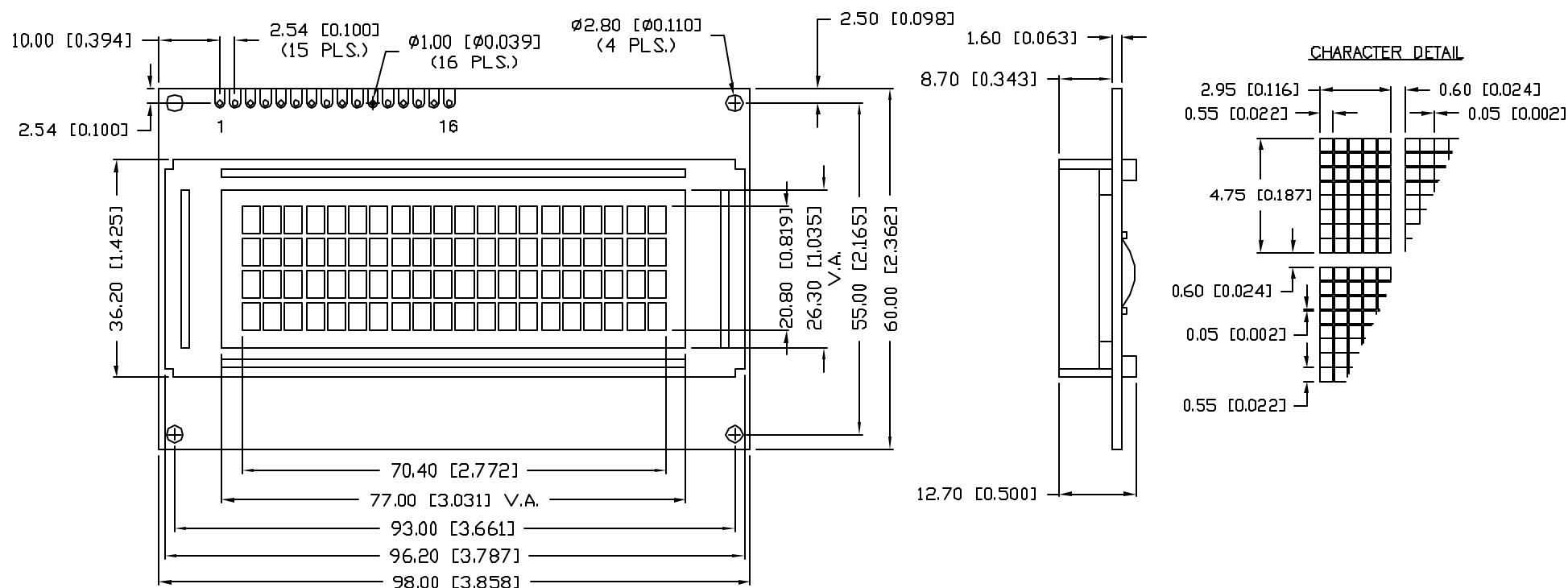


CAUTION: STATIC SENSITIVE DEVICE
FOLLOW PROPER E.S.D. HANDLING PROCEDURES
WHEN WORKING WITH THIS PART.



*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), 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/2

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

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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DATE: 12.07.04

PAGE: 1 OF 2

SCALE: N/A

PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	—	POWER SUPPLY
2	V _{DD}	—	
3	V _O	—	
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	—	ANODE LED BACKLIGHT
16	K	—	CATHODE LED BACKLIGHT

ELECTRICAL CHARACTERISTICS

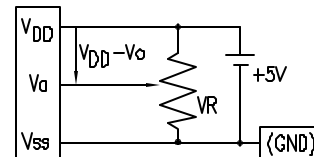
V_{DD}=4.7V to 5.3V, T_A=25°C

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	—	—	5.0	—	V
SUPPLY CURRENT FOR LOGIC	I _{DD}	V _{DD} =5V	—	2.0	3.0	mA
INPUT VOLTAGE	HIGH	V _{IH}	—	2.2	—	V _{DD}
	LOW	V _{IL}	—	0	—	0.6 V
OUTPUT VOLTAGE	HIGH	V _{OH}	I _{OH} =-0.205mA	2.4	—	V
	LOW	V _{OL}	I _{OL} =1.6ma	—	—	0.4 V
*LED BACKLIGHT	VOLTAGE	V _f	I _f =300mA	—	4.2	4.5 V
	CURRENT	I _f	—	—	300	600 mA
	POWER CONSUMPTION	PD	—	—	1260	mW
	LUMINOUS	L	I _f =300mA	70	—	cd/m ²
	COLOR	—	—	—	—	nm

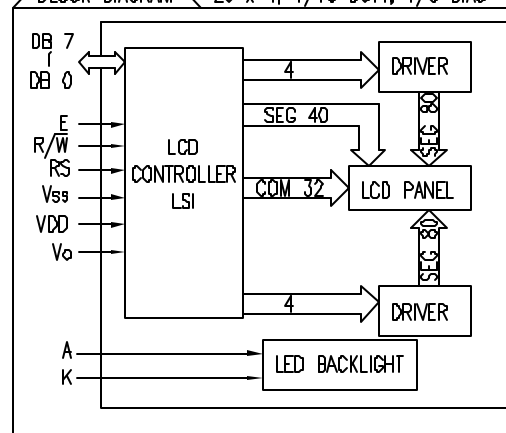
*ONLY APPLIES TO MODULES WITH BACKLIGHT

DDRAM ADDRESS

LINE1:	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53
LINE2:	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
LINE3:	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23	24	25	26	27
LINE4:	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F	60	61	62	63	64	65	66	67

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

BLOCK DIAGRAM 20 x 4, 1/16 DUTY, 1/5 BIAS



ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	T _a =25°C	4.7	5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V _O	—	4.2@50°C	4.8@0°C	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	LCM-S	0	50	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	LCM-S	-20	70	°C
		LCM-H	-30	85	°C

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REV.

PART NUMBER

LCM-S02004DSF/2

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

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