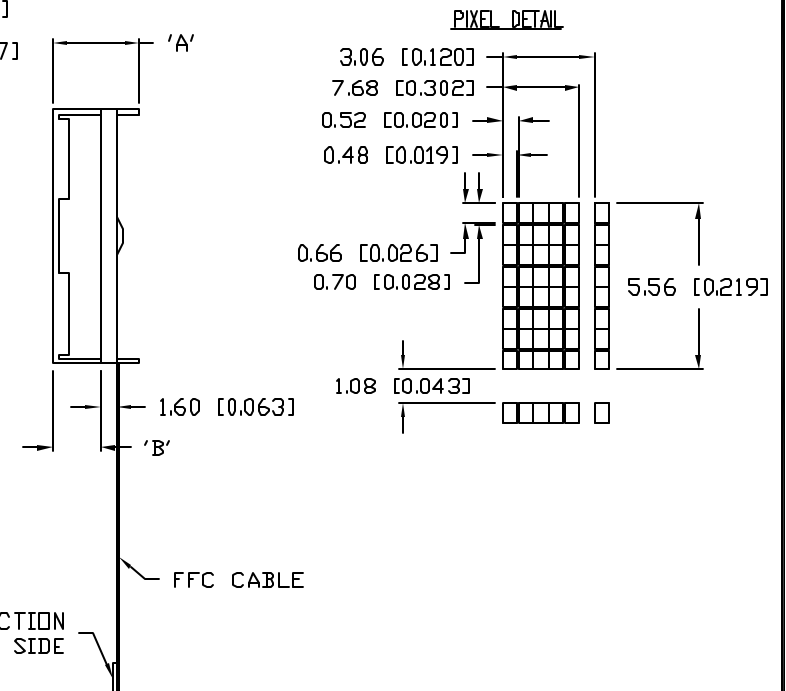
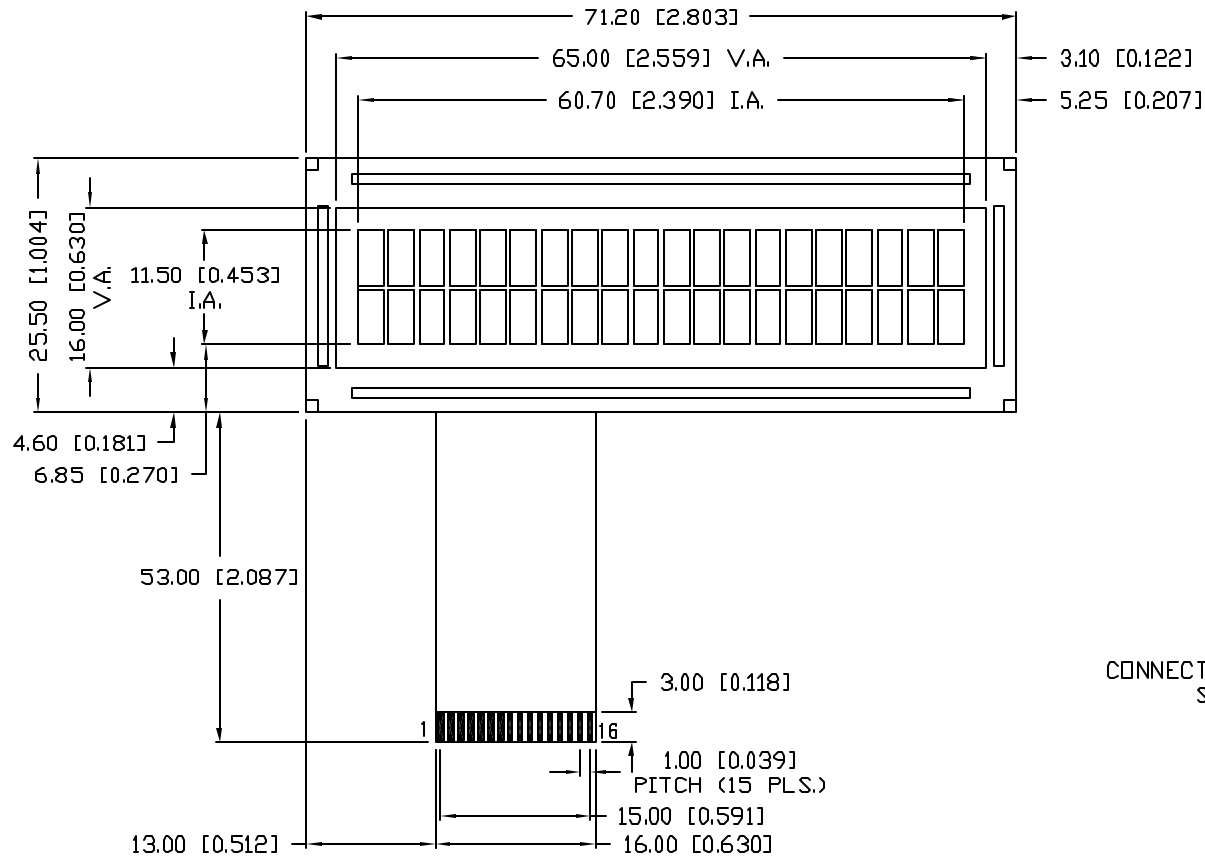


P/N PREFIX/SUFFIX TABLE		
LCM-X	DXX	DESCRIPTION
STANDARD	SR	STN, REFLECTIVE
	SF	STN, TRANSFLECTIVE(W/ BACKLIGHT)
HIGH TEMP.	TR	TN, REFLECTIVE
	TF	TN, TRANSFLECTIVE(W/ BACKLIGHT)

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.= -0.00

REV.

PART NUMBER

LCM-X02002DXX/F

5.56 CHARACTER HEIGHT, 5 x 8 DOT MATRIX, 20 x 2 LCD
MODULE, 1/16 DUTY, WITH FFC CABLE.

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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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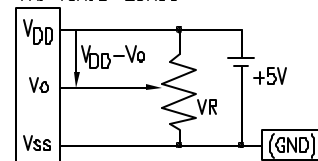
DATE: 7.10.03

PAGE: 1 OF 2

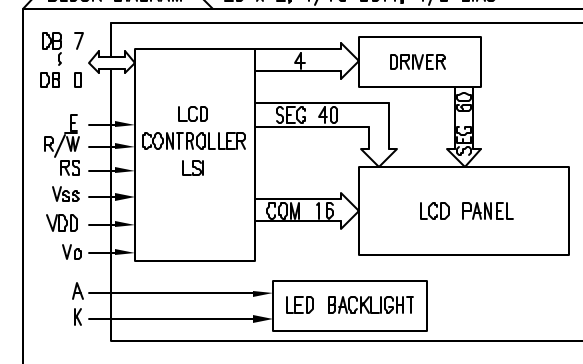
SCALE: N/A

PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	—	POWER SUPPLY GND (0V) 5V FOR LCD DRIVE
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

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



BLOCK DIAGRAM 20 x 2, 1/16 DUTY, 1/5 BIAS



ELECTRICAL CHARACTERISTICS		V _{DD} =4.7V to 5.3V, T _A =25°C				
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	—	MIN.	TYP.	MAX.	V
SUPPLY CURRENT FOR LOGIC	I _{DD}	V _{DD} =5V	—	3.2	3.6	mA
INPUT VOLTAGE	HIGH	V _{IH}	—	2.2	—	4.7 V
	LOW	V _{IL}	—	0	—	0.6 V
OUTPUT VOLTAGE	HIGH	V _{OH}	—	2.4	—	V
	LOW	V _{OL}	—	—	0.4	V
*LED BACKLIGHT	VOLTAGE	V _f	I _f =160mA	—	4.2	4.5 V
	CURRENT	I _f	—	—	160	400 mA
	POWER CONSUMPTION	P _D	—	—	660	mW
	LUMINOUS	L	I _f =160mA	70	—	cd/m ²
	COLOR	—	—	—	—	nm

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
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

*ONLY APPLIES TO MODULES WITH BACKLIGHT

*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=+0.00 DECIMAL PRECISION MAX=+0.00 DECIMAL PRECISION

REV.

PART NUMBER

LCM-X02002DXX/F

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PAGE: 2 OF 2

SCALE: N/A