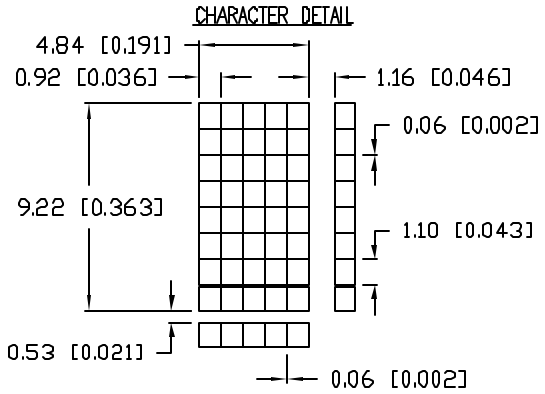
UNCONTROLLED DOCUMENT

PART NUMBER	REV.
LCM-X02004DXX/D-Y	B

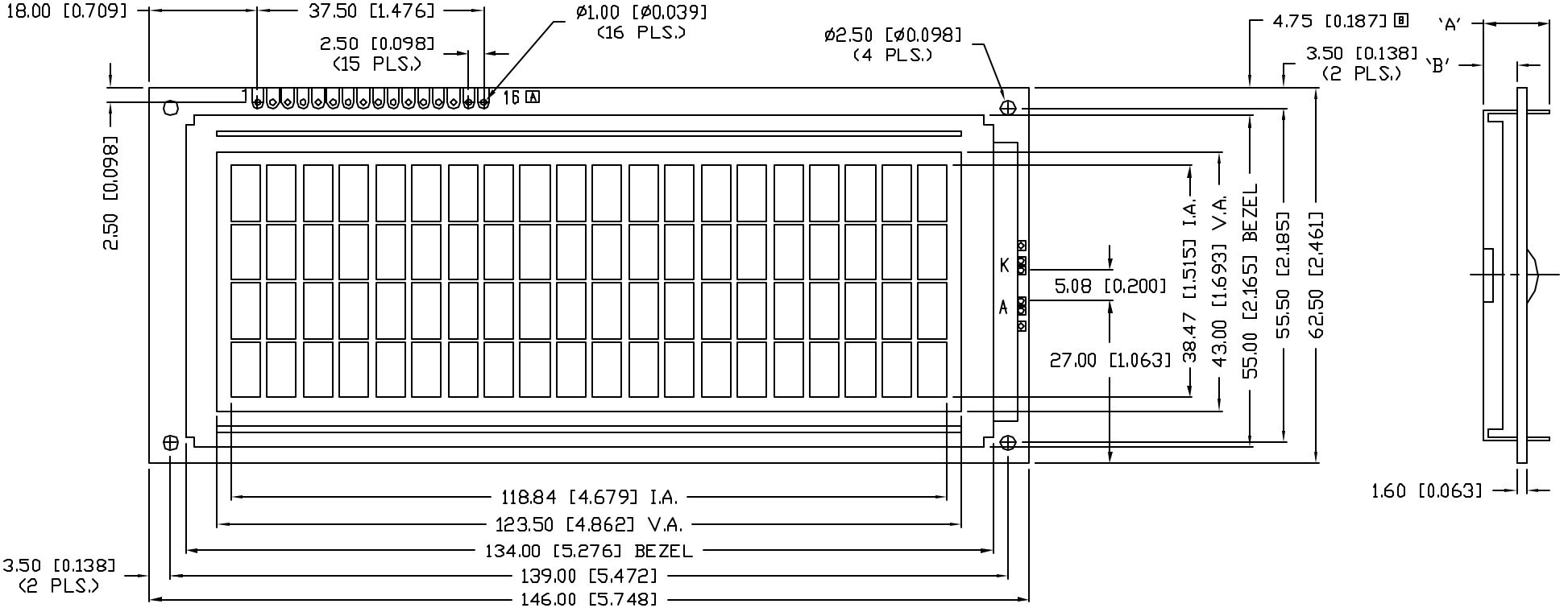
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #10708.	1.18.01
B	E.C.N. #10990.	5.13.03

P/N PREFIX/SUFFIX TABLE			
LCM-X	DXX	DESCRIPTION	
STANDARD	S	SR	STN, REFLECTIVE
HIGH TEMP.	H	SF	STN, 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	13.0	9.0
NO BACKLIGHT	11.0	5.4



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REV.	PART NUMBER
B	LCM-X02004DXX/D-Y

9.22mm CHARACHTER HEIGHT, 20 x 4 CHARACHTERS,
5 x 8 DOT MATRIX LCD MODULE,
STN YELLOW, 1/16 DUTY, 1/5 BIAS.

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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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LCM-X02004DXX/D-Y	B

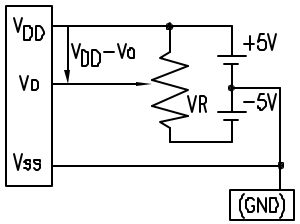
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
	SEE PAGE 1.	

PIN CONFIGURATION

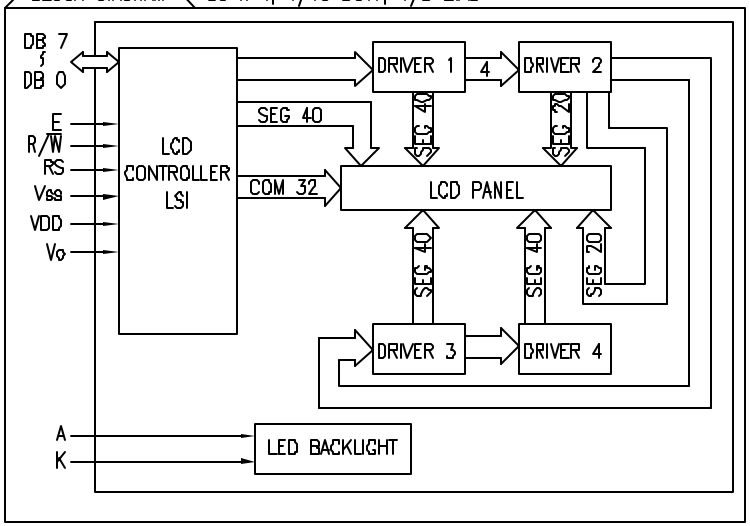
PIN NO.	SYMBOL	LEVEL	FUNCTION	
1	Vss	–	POWER SUPPLY	GND (0V)
2	V_{DD}	–		5V
3	Vo	–		FOR LCD DRIVE
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT	
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)	
6	E	H,H->L	ENABLE	
7~14	DB0~DB7	H/L	DATA BUS-SOFTWARE SELECTABLE 4 OR 8 BIT MODE.	
15	A	–	ANODE	LED BACKLIGHT
16	K	–	CATHODE	LED BACKLIGHT

[A]

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



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



ELECTRICAL CHARACTERISTICS

V_{DD}=4.7V to 5.3V, T_A=25°C

ITEM		SYMBOL	CONDITION	STANDARD VALUE MIN.	TYP.	MAX.	UNIT
SUPPLY VOLTAGE FOR LOGIC		V_{DD}-Vss	–	–	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}	V
	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	Vf	If=550mA	–	4.2	4.5	V
	CURRENT	If	–	–	550	600	mA
	POWER CONSUMPTION	PD	–	–	2310	–	mW
	LUMINOUS	L	If=550mA	70	–	–	cd/m²
	COLOR	–	–	–	–	–	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE MIN	MAX	UNIT
SUPPLY VOLTAGE FOR LOGIC	V_{DD}-Vss	Ta=25°C	4.7	5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V_{DD}-Vo	–	0.5	10.0	V
INPUT VOLTAGE	V_I	Ta=25°C	Vss	V_{DD}	V
OPERATING TEMPERATURE	Topr	LCM-H	-20	80	°C
STORAGE TEMPERATURE	Tstg	LCM-H	-30	85	°C

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