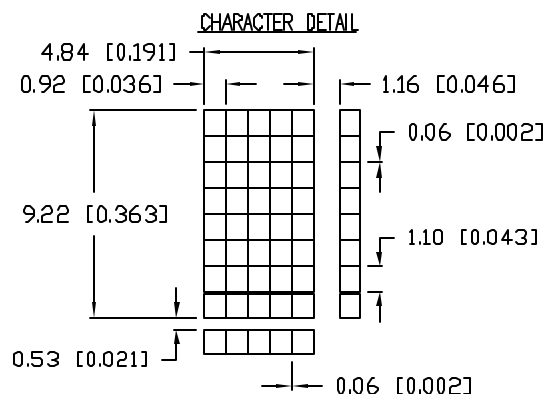


UNCONTROLLED DOCUMENT

P/N PREFIX/SUFFIX TABLE			
LCM-X	DX	SR	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.

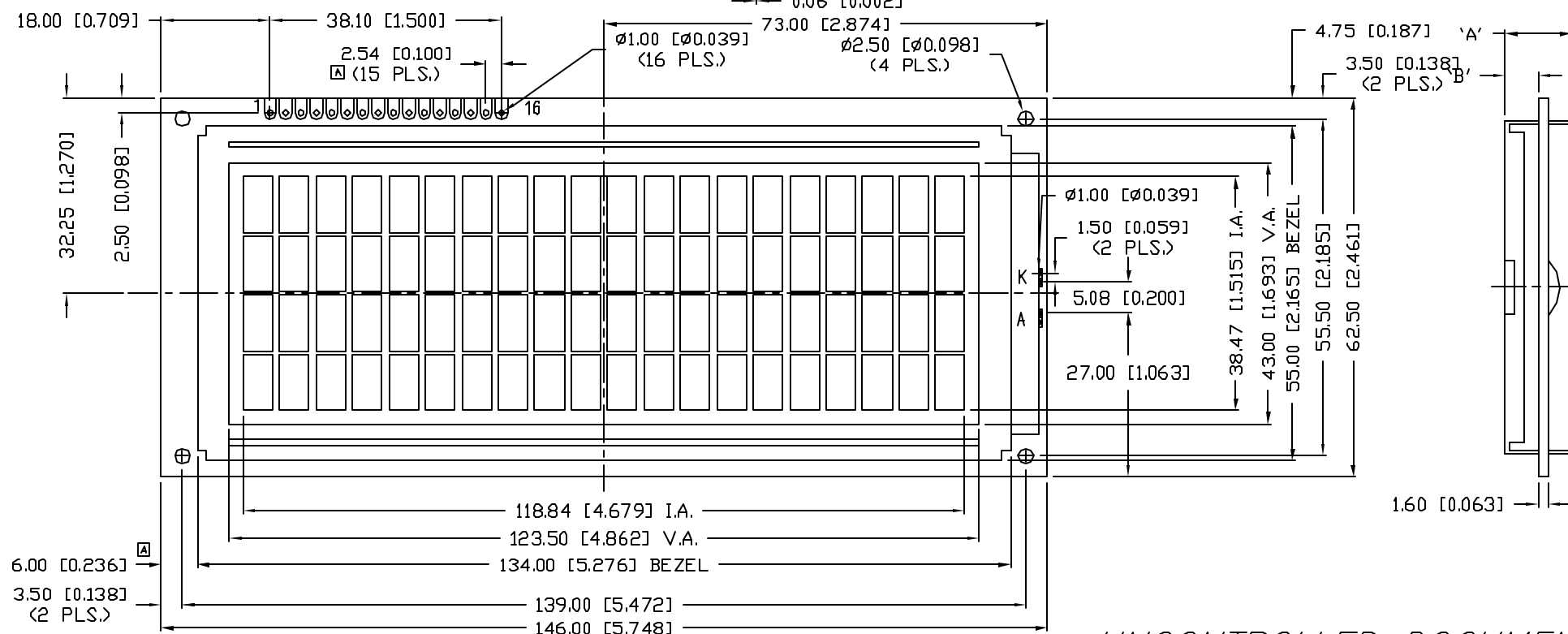


PART NUMBER
LCM-X02004DXX/D-Y

REV.
C

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
C	E.C.N. #120305.	12.06.04

TYPE	DIM.	A	B
WITH BACKLIGHT	13.0	9.0	
NO BACKLIGHT	11.0	5.4	



UNCONTROLLED DOCUMENT

*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
C	LCM-X02004DXX/D-Y

9.22mm CHARACTER HEIGHT, 20 x 4 CHARACTERS,
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.

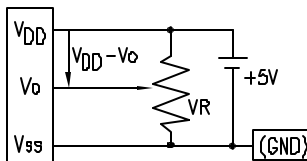


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CT			5.15.03
			PAGE: 1 OF 2
			SCALE: N/A

PIN CONFIGURATION					
PIN NO.	SYMBOL	LEVEL	FUNCTION		
1	V _{SS}	-	POWER SUPPLY	GND (0V)	
2	V _{DD}	-		5V	
3	V _O	-		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	

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



ELECTRICAL CHARACTERISTICS					
V _{DD} =4.75V to 5.25V, T _A =25°C					
ITEM	SYMBOL	CONDITION	STANDARD VALUE		
			MIN.	TYP.	MAX.
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	-	-	5.0	-
SUPPLY CURRENT FOR LOGIC	I _{DD}	V _{DD} =5V	-	1.0	2.2
INPUT VOLTAGE	HIGH	V _{IH}	-	2.2	-
		V _{IL}	-	0	0.6
OUTPUT VOLTAGE	HIGH	V _{OH}	I _{OH} =-0.205mA	2.4	-
		V _{OL}	I _{OL} =1.6mA	-	0.4
*LED BACKLIGHT	VOLTAGE	V _f	I _f =550mA	-	4.2
	CURRENT	I _f	-	-	550
	POWER CONSUMPTION	P _D	-	-	2310
	LUMINOUS	L	I _f =550mA	70	-
	COLOR	-	-	-	-

*ONLY APPLIES TO MODULES WITH BACKLIGHT

DDRAM ADDRESS																
LINE1:	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
LINE2:	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F
LINE3:	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23
LINE4:	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F	60	61	62	63

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PART NUMBER

LCM-X02004DXX/D-Y

REV.

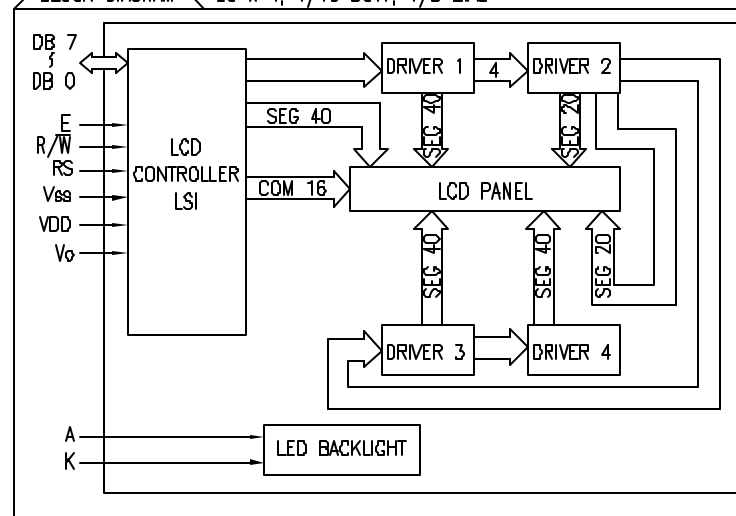
C

REV. E.C.N. NUMBER AND REVISION COMMENTS

SEE PAGE 1.

DATE

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	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V _O	-	0	4.9	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	LCM-H	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	LCM-H	-30	80	°C

REV.

C

PART NUMBER

LCM-X02004DXX/D-Y

9.22mm CHARACTER HEIGHT, 20 x 4 CHARACTERS,
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