

UNCONTROLLED DOCUMENT

PART NUMBER

LCM-H01602DWF/C-1B

REV.

A

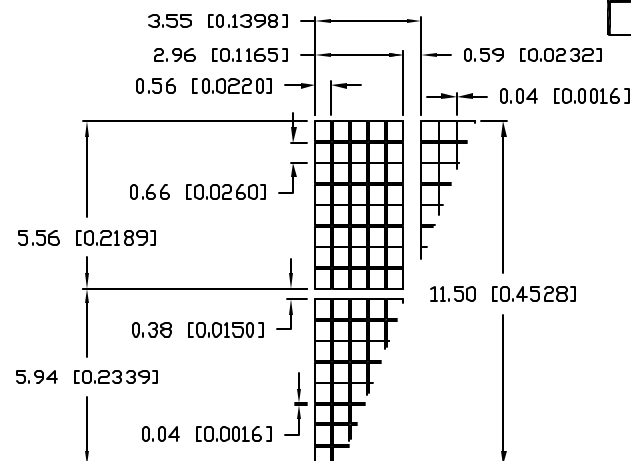
REV. E.C.N. NUMBER AND REVISION COMMENTS

A E.C.N. #11148.

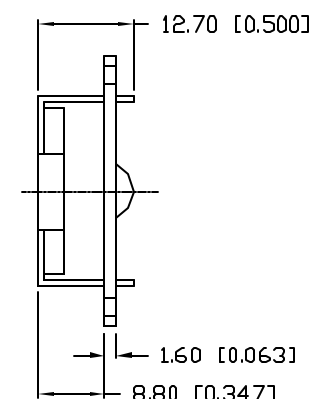
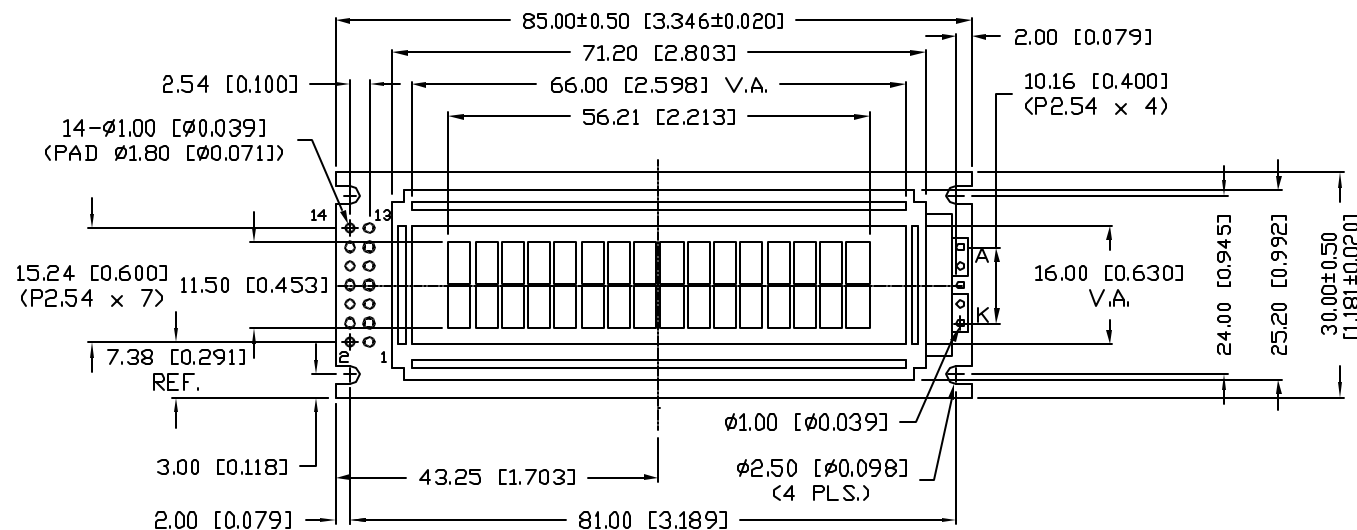
DATE

4.18.07

CHARACTER DETAIL



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



10
A

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 MAX.=+0.00 -DECIMAL PRECISION

REV.

A

PART NUMBER

LCM-H01602DWF/C-1B

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: 3.5.04

PAGE: 1 OF 2

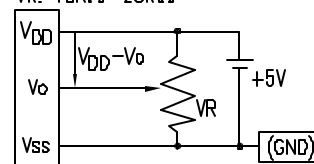
SCALE: N/A

16 x 2 CHARACTERS LCD MODULE, TOP VIEW,
FSTN, TRANFLECTIVE, ONE CHIP BLUE LED BACKLIGHT,
1/16 DUTY, 1/5 BIAS, WIDE OPERATING TEMP.

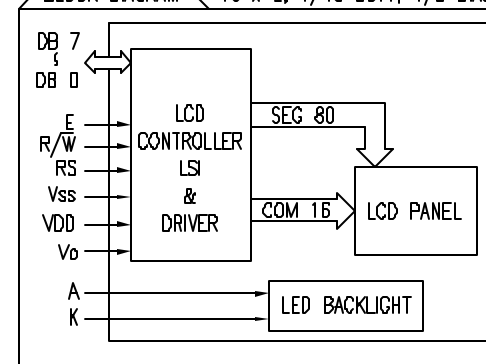
PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V_{DD}	—	POWER SUPPLY 5V GND (0V) FOR LCD DRIVE
2	V_{SS}	—	
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.
	A	—	ANODE LED BACKLIGHT
	K	—	CATHODE LED BACKLIGHT

$V_{DD}-V_o$: LCD DRIVING VOLTAGE
VR: 10K Ω —20K Ω



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



ELECTRICAL CHARACTERISTICS

 $V_{DD}=4.7V$ to $5.3V$, $T_A=25^\circ C$

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	—	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	$I_f=20mA$	3.3	3.4	3.5	V
	CURRENT		I_f	—	10	20	25	mA
	POWER CONSUMPTION		PD	$I_f=20mA$	—	53	—	mW
	COLOR		—	BLUE	—	—	—	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	$V_{DD}-V_{SS}$	$T_a=25^\circ C$	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	$T_a=25^\circ C$	V_{SS}	V_{DD}	V
OPERATING TEMPERATURE	T_{opr}	LCM-H	-20	70	°C
STORAGE TEMPERATURE	T_{stg}	LCM-H	-30	80	°C

*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.

A

PART NUMBER

LCM-H01602DWF/C-1B

16 x 2 CHARACTERS LCD MODULE, TOP VIEW,
FSTN, TRANFLECTIVE, ONE CHIP BLUE LED BACKLIGHT,
1/16 DUTY, 1/5 BIAS, WIDE OPERATING TEMP.

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: 3.5.04

PAGE: 2 OF 2

SCALE: N/A