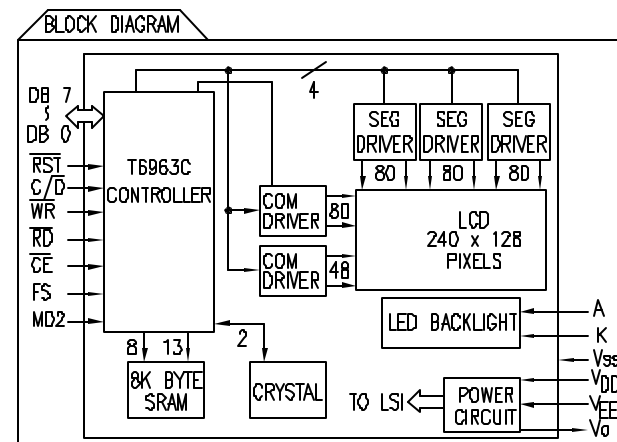
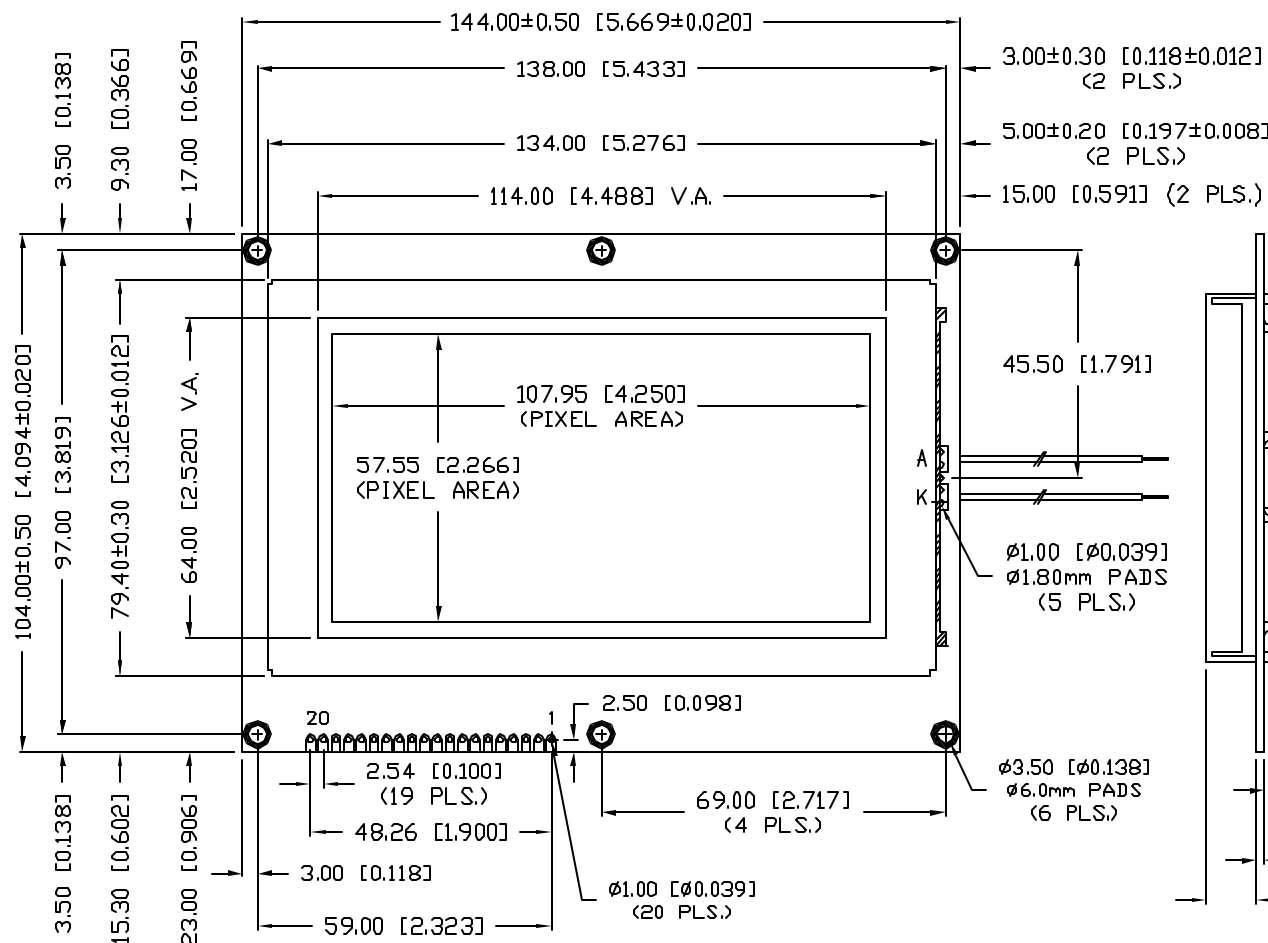
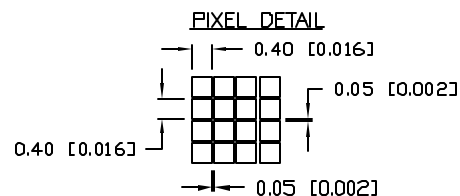


UNCONTROLLED DOCUMENT



- NOTES:

1. RED WIRE: ANODE, 150mm, 24AWG, 5mm STRIPPED END.
2. BLACK WIRE: GND, 150mm, 24AWG, 5mm STRIPPED END.

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

UNCONTROLLED DOCUMENT

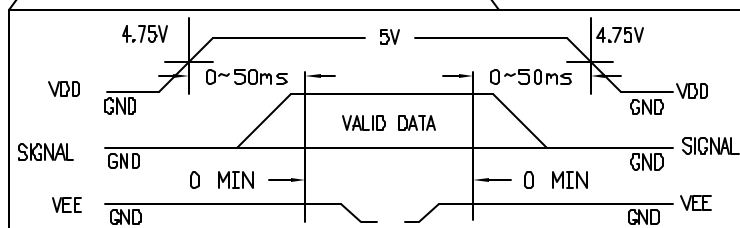
*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), XX=±0.5 (±0.020), XXX=±0.25 (±0.010), XXXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN=+DECIMAL PRECISION
-0.00 MAX.=+0.00
-DECIMAL PRECISION

REV. A	PART NUMBER LCM-H240128GSN-1WC	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
240 x 128 DOT MATRIX GRAPHIC MODULE, STN BLUE, NEGATIVE IMAGE, TRANSMISIVE, WHITE LED BACKLIGHT, HIGH OPERATING TEMP, 1/128 DUTY, 12:00 VIEW.		DRAWN BY: JC	CHECKED BY: APPROVED BY: DATE: 1.17.06 PAGE: 1 OF 2 SCALE: N/A

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	$V_{DD}-V_{SS}$	0	6.5	V
POWER SUPPLY FOR LCD DRIVING	$V_{DD}-V_{EE}$	0	22.0	V
INPUT VOLTAGE	V_I	V_{SS}	V_{DD}	V
STATIC ELECTRICITY			100	V

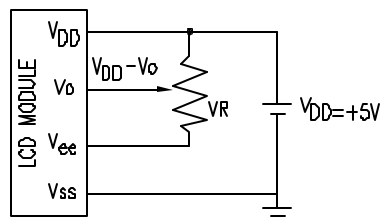
TIMING OF POWER SUPPLY AND INTERFACE SIGNAL



PIN CONFIGURATION

PIN #	SYMBOL	LEVEL	FUNCTION
1	V_{SS}	-	GROUND (0V)
2	V_{DD}	-	POWER SUPPLY FOR LOGIC CIRCUIT
3	V_O	-	OPERATING VOLTAGE FOR LCD DRIVING
4	$C/\bar{D}$	H/L	$\overline{WR} = "L", C/\bar{D} = "H":$ COMMAND WRITE, $"L":$ DATA WRITE $\overline{RD} = "L", C/\bar{D} = "H":$ STATUS READ, $"L":$ DATA READ
5	$\overline{RD}$	L	DATA READ
6	$\overline{WR}$	L	DATA WRITE
7~14	DB0~DB7	H/L	DATA BUS LINE
15	$\overline{CE}$	L	CHIP ENABLE
16	$\overline{RST}$	L	RESET
17	V_{EE}	-	POWER SUPPLY FOR LCD DRIVING
18	MD2	H/L	COLUMNS SELECT: $"H":$ 32 COLUMNS, $"L":$ 40 COLUMNS
19	FS	H/L	FONT SELECT: $"H":$ 6*8 PIXEL/FONT, $"L":$ 8*8 PIXEL/FONT
20	N.C.	-	
	A	-	POWER SUPPLY FOR LED BACKLIGHT (ANODE)
	K	-	POWER SUPPLY FOR LED BACKLIGHT (CATHODE)

$V_{DD}-V_O$: LCD DRIVING VOLTAGE
 V_R : 10K Ω ~20K Ω



OPTO-ELECTRICAL CHARACTERISTICS

ITEM		SYMBOL	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
POWER SUPPLY VOLTAGE FOR LOGIC		$V_{DD}-V_{SS}$	+4.75	+5.0	+5.25	V
NEGATIVE POWER SUPPLY VOLTAGE FOR LCD DRIVE		$V_{EE}-V_{SS}$	-15.5	-16.0	-16.5	V
INPUT VOLTAGE: NOTE (1)	H LEVEL	V_{IH}	2.2	-	-	V
	L LEVEL	V_{IL}	0	-	0.8	V
OUTPUT VOLTAGE: NOTE (2)	H LEVEL	V_{OH}	2.4	-	V_{DD}	V
	L LEVEL	V_{OL}	0	-	0.4	V
POWER SUPPLY CURRENT FOR LOGIC: NOTE (4)		I_{DD}	-	12.0	-	mA
POWER SUPPLY CURRENT FOR LCD DRIVE: NOTE (4)		I_{EE}	-	5.0	-	mA
RECOMMENDED LCD DRIVING VOLTAGE: (NOTE 3)	$T_a=0^{\circ}\text{C}$	$V_{DD}-V_o$	-	+19.4	-	V
	$T_a=25^{\circ}\text{C}$	$\Phi=10^{\circ}\text{C}$	-	+18.5	-	V
	$T_a=50^{\circ}\text{C}$	$\Theta=0^{\circ}\text{C}$	-	+16.2	-	V
CLOCK OSCILLATION FREQUENCY		f_{osc}	-	5	-	MHZ
*LED BACKLIGHT	VOLTAGE	$I_f=160\text{mA}$	V_f	-	3.4	V
	CURRENT	-	I_f	-	160	mA
	POWER CONSUMPTION	-	P_D	-	720	mW
	BACKLIGHT SURFACE	$I_f=160\text{mA}$	L	160	200	cd/m ²
	COLOR (X=0.31,Y=0.32)	-	-	-	550	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

NOTE (1): APPLIED TO TERMINALS: FS, CE, $\overline{WR}$, $\overline{RD}$, $C/\bar{D}$, DB0~DB7, $\overline{RES}$, MD2.

NOTE (2): APPLIED TO TERMINALS: DB0~DB7.

NOTE (3): RECOMMENDED LCD DRIVING VOLTAGE MAY FLUCTUATE

ABOUT $\pm 1.0\text{V}$ BY EACH MODULE.

NOTE (4): $V_{DD}-V_{SS}=5.0\text{V}$, $V_{DD}-V_O=20.6\text{V}$.

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REV.

A

PART NUMBER

LCM-H240128GSN-1W

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APPROVED BY:

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PAGE: 2 OF 2

SCALE: N/A

240 x 128 DOT MATRIX GRAPHIC MODULE, STN BLUE,
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