

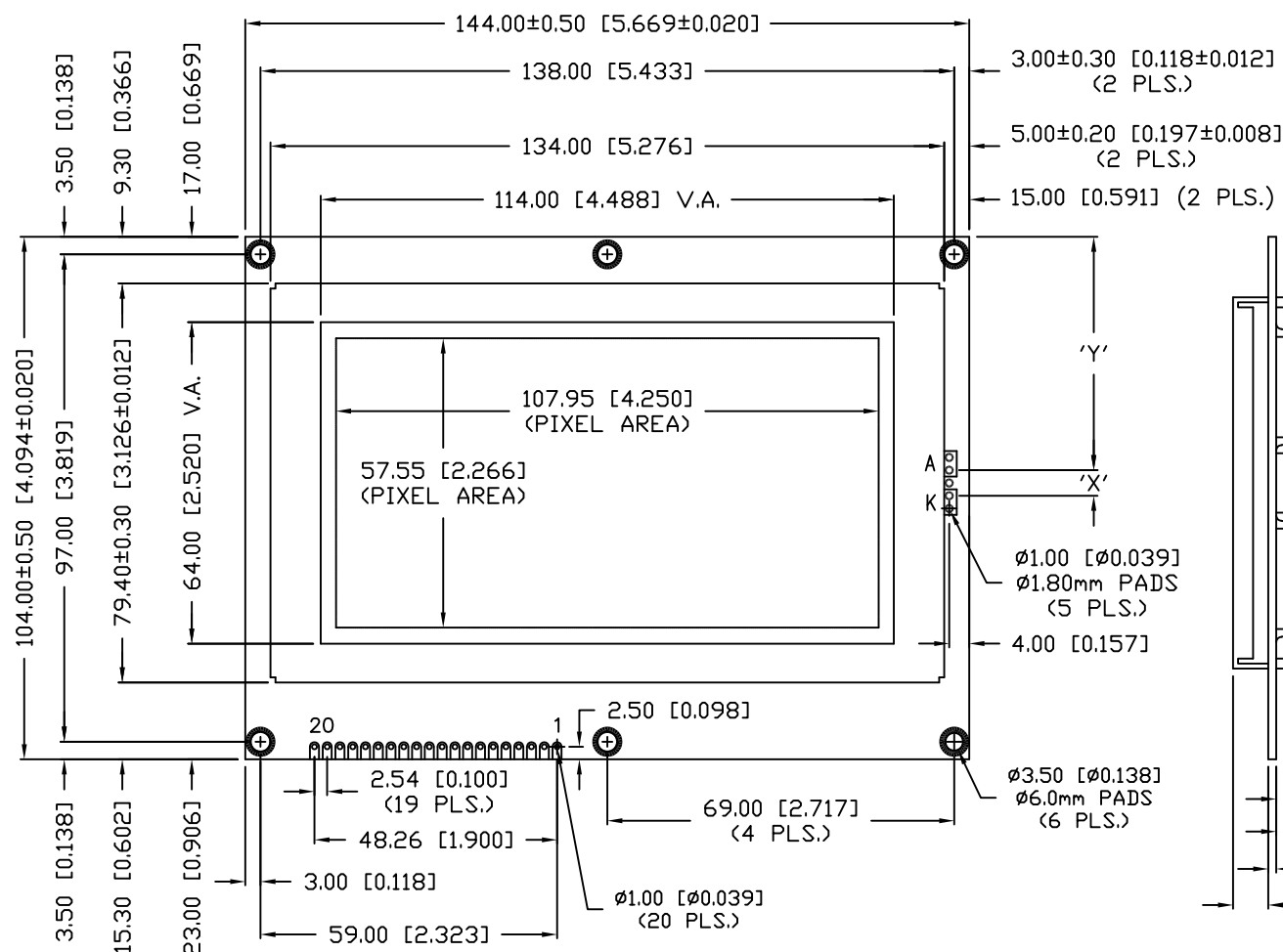
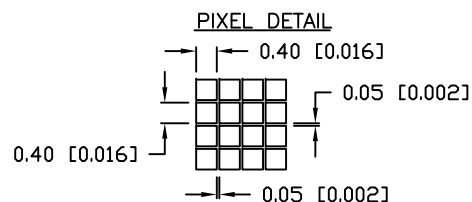
UNCONTROLLED DOCUMENT

PART NUMBER
LCM-H240128GSN-1W

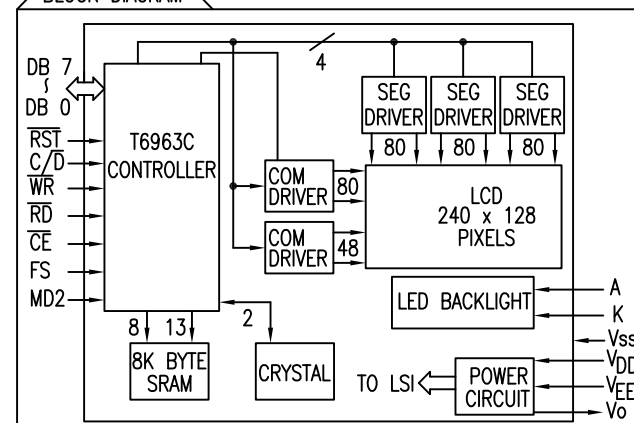
REV.

A

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #11148.	4.20.07



BLOCK DIAGRAM



TYPE	DIM.	A	B*	B**	X	Y
REFLECTIVE OR EL		5.2	3.5	8.4	15.24	41.38
LED		10	3.5	8.4	5.08	46.46
CCFL		10	3.5	8.4	-	-

B*: WITHOUT NV+TC.

B**: WITH NV+TC.

NV-NEGATIVE VOLTAGE SUPPLY

TC-TEMPERATURE COMPENSATION

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), 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= +DECIMAL PRECISION MAX= +0.00 -DECIMAL PRECISION

REV. A PART NUMBER LCM-H240128GSN-1W

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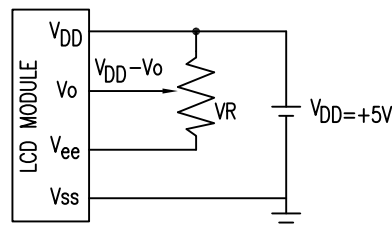
240 x 128 DOT MATRIX GRAPHIC MODULE, STN BLUE,
NEGATIVE IMAGE, TRANSMISIVE, WHITE LED BACKLIGHT,
HIGH OPERATING TEMP, 1/128 DUTY, 12:00 VIEW.

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.

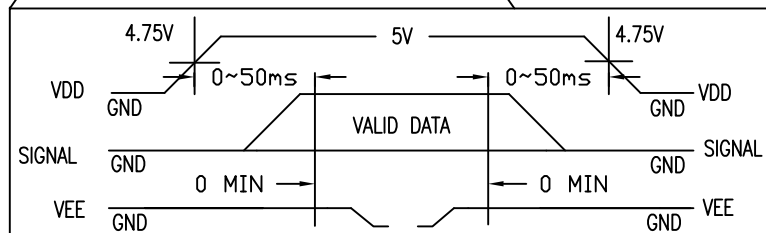
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JC			PAGE: 1 OF 2
			SCALE: N/A

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

 $V_{DD}-V_o$: LCD DRIVING VOLTAGEVR: 10K Ω –20K Ω 

TIMING OF POWER SUPPLY AND INTERFACE SIGNAL



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	–	V
OUTPUT VOLTAGE: NOTE (2)	H LEVEL	V_{OH}	2.4	–	V_{DD}
	L LEVEL	V_{OL}	0	–	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	fosc	–	5	–	MHZ
*LED BACKLIGHT	VOLTAGE	If=160mA	Vf	–	3.4 3.6 V
	CURRENT	–	If	–	160 mA
	POWER CONSUMPTION	–	PD	–	720 mW
	BACKLIGHT SURFACE	If=160mA	L	160	200 cd/m ²
	COLOR (X=0.31,Y=0.32)	–	–	–	550 nm

[L5]

*ONLY APPLIES TO MODULES WITH BACKLIGHT

NOTE (1): APPLIED TO TERMINALS: FS, CE, WR, RD, C/D, DB0~DB7, 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): $V_{DD}-V_{SS}=5.0\text{V}$, $V_{DD}-V_o=20.6\text{V}$.

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/D	H/L	WR="L", C/D="H": COMMAND WRITE, "L": DATA WRITE RD="L", C/D="H": STATUS READ, "L": DATA READ
5	RD	L	DATA READ
6	WR	L	DATA WRITE
7~14	DB0~DB7	H/L	DATA BUS LINE
15	CE	L	CHIP ENABLE
16	RST	L	RESET
17	Vee	–	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)

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