

UNCONTROLLED DOCUMENT

PART NUMBER

LCM-H12864GWR/H-1

REV.

A

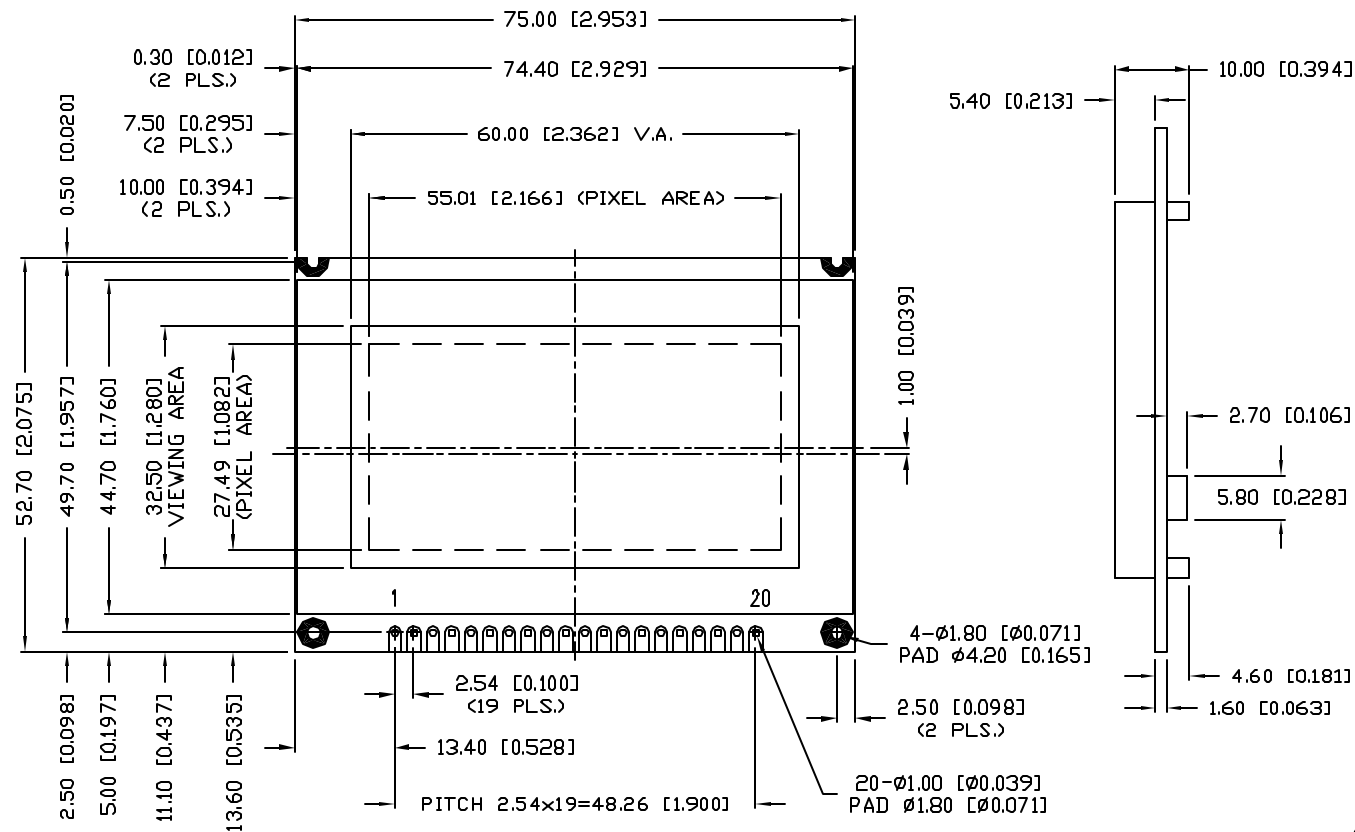
REV. E.C.N. NUMBER AND REVISION COMMENTS

DATE

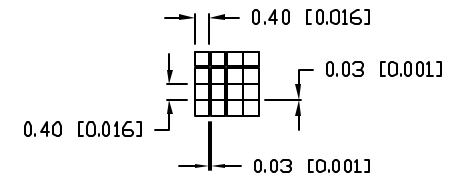
A E.C.N. #11148.

4.20.07

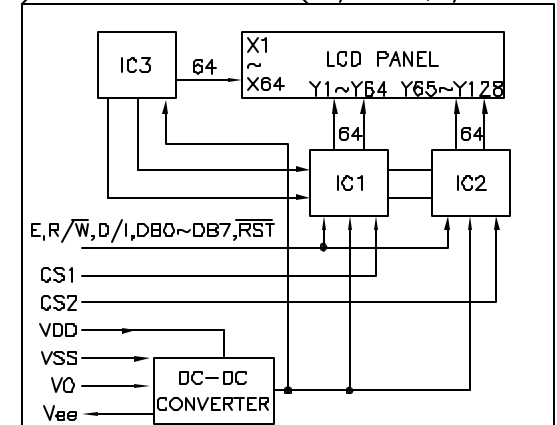
CAUTION: STATIC SENSITIVE DEVICE
FOLLOW PROPER E.S.D. HANDLING PROCEDURES
WHEN WORKING WITH THIS PART.



PIXEL DETAIL



BLOCK DIAGRAM 1/64 DUTY, 1/6 BIAS



*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=+0.00 DECIMAL PRECISION MAX.=+0.00 DECIMAL PRECISION

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PART NUMBER

LCM-H12864GWR/H-1

128 x 64 GRAPHIC CD MODULE, FSTN, REFLECTIVE,
TOPVIEW, -20°C TO +70°C OPERATING TEMPERATURE.

CONFIDENTIAL INFORMATION

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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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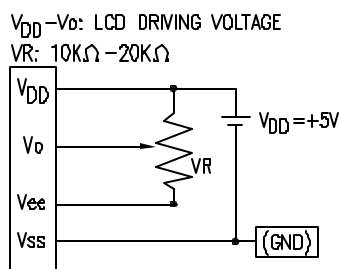
DATE: 11.18.02

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SCALE: N/A

PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION	
1	V_{DD}	-	POWER SUPPLY	5V
2	V_{SS}	-		GND (0V)
3	V_o	-		FOR LCD DRIVE
4-11	DB0~DB7	H/L	DATA BUS	
12	CS1	H/L	CHIP SELECTION SIGNAL FOR IC1	
13	CS2	H/L	CHIP SELECTION SIGNAL FOR IC2	
14	$\overline{RST}$	-	RESET SIGNAL (ACTIVE "LOW")	
15	R/W	H/L	DATA READ/WRITE	H:READ L:WRITE
16	D/I	H/L	REGISTER SELECT SIGNAL	H:DATA L:INSTRUCTION
17	E	H->L	ENABLE	
18	V_{ee}	-	OUTPUT VOLTAGE FOR LCD DRIVING	
19	A	-	ANODE	LED BACKLIGHT
20	K	-	CATHODE	LED BACKLIGHT



READ/WRITE TIMING FOR MPU INTERFACE

PARAMETER	SYMBOL	MIN	MAX	UNIT
ADDRESS HOLD TIME	t_{AH}	10	-	ns
ADDRESS SETUP TIME	t_{AS}	140	-	ns
E CYCLE TIME	t_{CYC}	1000	-	ns
E HIGH LEVEL WIDTH	t_{WEH}	450	-	ns
E LOW LEVEL WIDTH	t_{WEL}	450	-	ns
DATA SETUP TIME	t_{DSW}	200	-	ns
DATA HOLD TIME (READ)	t_{DHR}	20	-	ns
DATA DELAY TIME	t_{DDR}	-	320	ns
DATA HOLD TIME (WRITE)	t_{DHW}	10	-	ns
E RISE TIME	t_R	-	25	ns
E FALL TIME	t_F	-	25	ns

ELECTRICAL CHARACTERISTICS

 $V_{DD}=4.75V$ to $5.25V$, $T_A=25^\circ C$

ITEM		SYMBOL	CONDITION	STANDARD VALUE			UNIT	
				MIN.	TYP.	MAX.		
SUPPLY VOLTAGE FOR LOGIC		$V_{DD}-V_{SS}$	—	4.75	5.0	5.25	V	
SUPPLY CURRENT FOR LOGIC		I_{DD}	$V_{DD}=5V$	—	8.0	—	mA	
INPUT VOLTAGE		HIGH V_{IH}	—	$0.7 \cdot V_{DD}$	—	V_{DD}	V	
		LOW V_{IL}	—	0	—	$0.3 \cdot V_{DD}$	V	
*LED BACKLIGHT	VOLTAGE		V_f	$I_f=300mA$	—	4.2	4.5	V
	CURRENT		I_f	—	—	300	—	mA
	POWER CONSUMPTION		PD	—	—	1260	—	mW
	LUMINOUS		L	$I_f=300mA$	60	90	—	cd/m ²
	COLOR		—	—	—	—	—	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
SUPPLY VOLTAGE FOR LOGIC	$V_{DD}-V_{SS}$	$T_a=25^\circ C$	-	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	$V_{DD}-V_o$	-	10.8 ± 0.4	12.4 ± 0.5	V
INPUT VOLTAGE	V_I	$T_a=25^\circ C$	V_{SS}	V_{DD}	V
OPERATING TEMPERATURE	T_{opr}	-	-20	70	$^\circ C$
STORAGE TEMPERATURE	T_{stg}	-	-30	85	$^\circ C$

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