

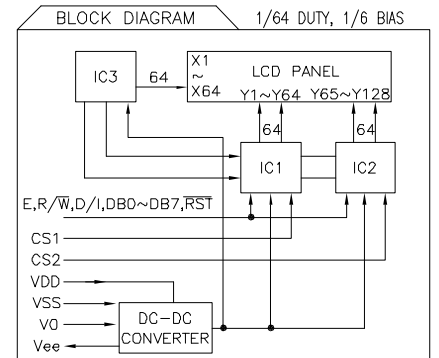
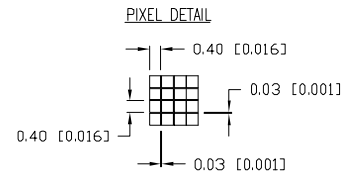
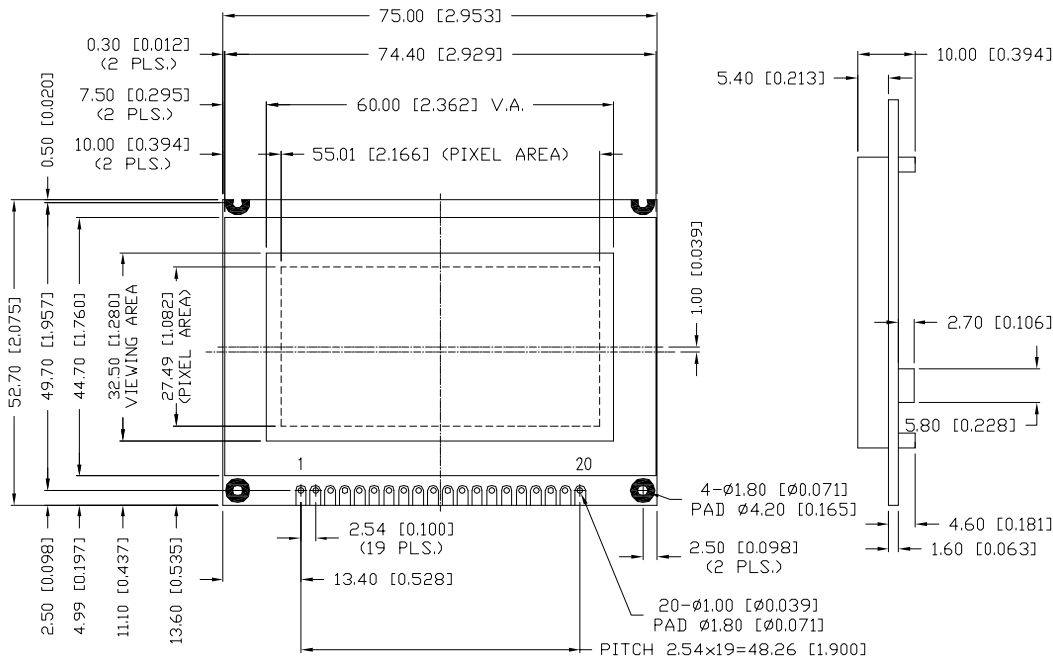
UNCONTROLLED DOCUMENT

PART NUMBER
LCM-H12864GSF/H-Y

REV.
B

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

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #11017.	7.17.03
B	E.C.N. #11148.	4.20.07



*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 -0.00, MAX=+0.00 -DECIMAL PRECISION

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REV.	PART NUMBER	CONFIDENTIAL INFORMATION	LUMEX	290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 US WEB: www.lumex.com TW WEB: www.lumex.com.tw
B	LCM-H12864GSF/H-Y	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.		
128 x 64 DOT MATRIX GRAPHIC MODULE, 1/64 DUTY, 1/6 BIAS, WITH NEGATIVE CHARGE PUMP, EXTENDED TEMP., STN, YELLOW BACKGROUND.		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.	DRAWN BY: JC	CHECKED BY: APPROVED BY: DATE: 2.4.99 PAGE: 1 OF 2 SCALE: N/A

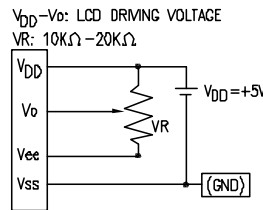
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B	SEE PAGE 1.	

PIN CONFIGURATION			FUNCTION	
PIN NO.	SYMBOL	LEVEL		
1	V _{DD}	-	POWER SUPPLY	5V
2	V _{SS}	-		GND (0V)
3	V ₀	-		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	RST	-	RESET SIGNAL (ACTIVE "LOW")	
15	R/W	H/L	H:READ	L:WRITE
16	D/I	H/L	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°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*V _{DD}	-	V	
	LOW	V _{IL}	-	0	0.3*V _{DD}	V	
*EDGE LIT LED BACKLIGHT	VOLTAGE	V _f	I _f =60mA	-	4.2	4.5	V
	CURRENT	I _f	-	-	60	-	mA
	POWER CONSUMPTION	PD	-	-	252	-	mW
	LUMINOUS	L	I _f =60mA	-	2	-	cd/m ²
	COLOR	-	-	-	-	-	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°C	-	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V ₀	-	10.8@40°C	12.4@0°C	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	-	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	-	-30	85	°C

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