

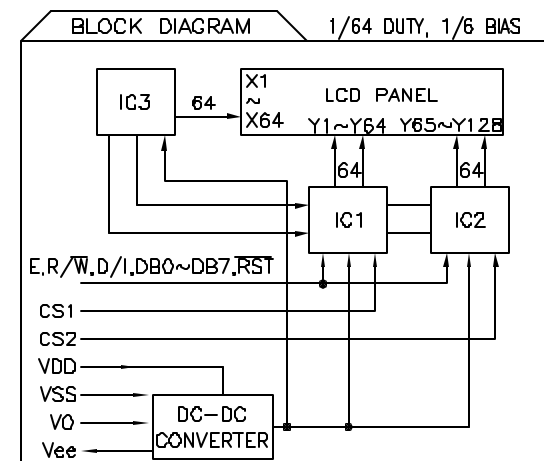
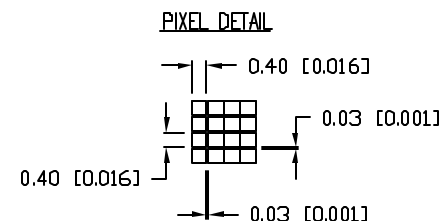
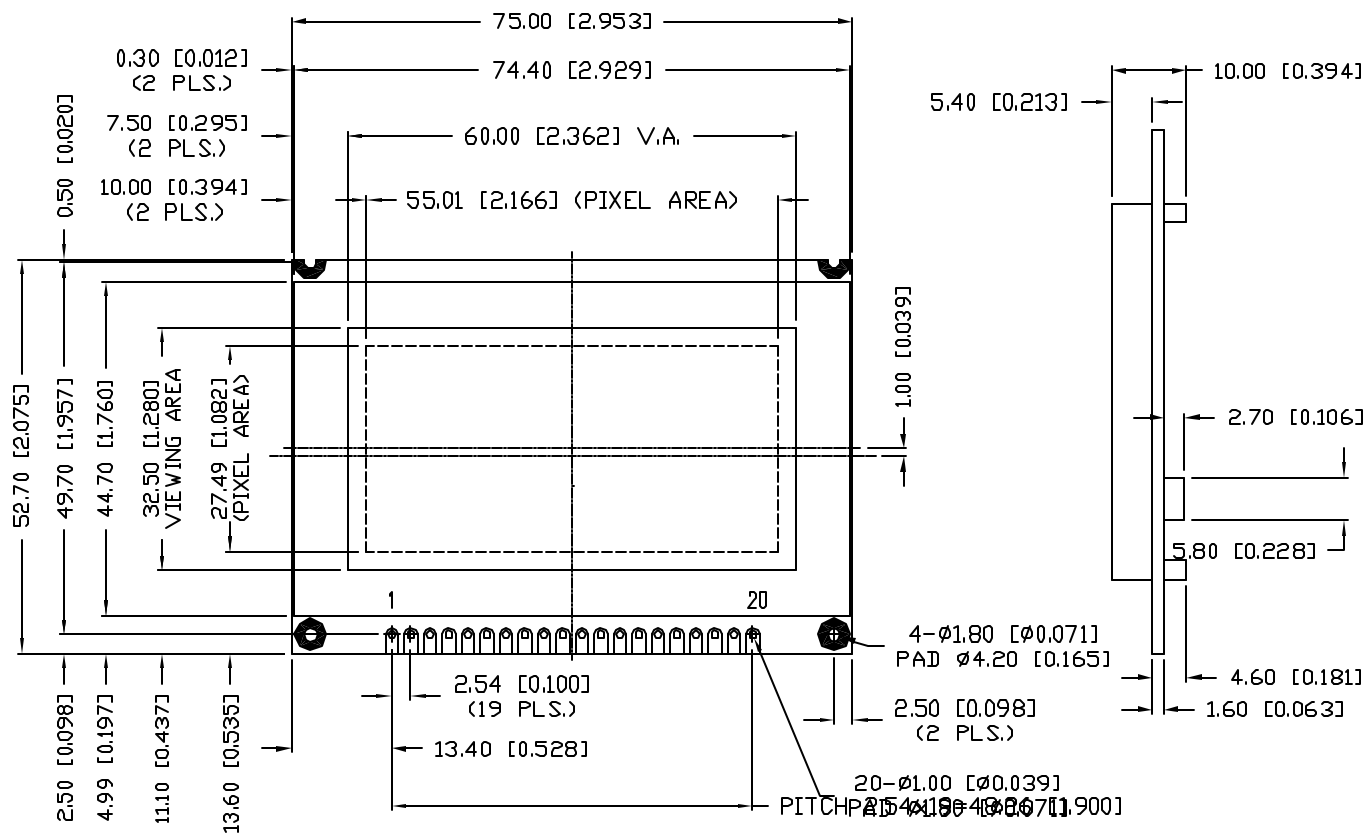
UNCONTROLLED DOCUMENT

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

PART NUMBER
LCM-H12864GSF/H-Y

REV.
B

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), 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.
B

PART NUMBER
LCM-H12864GSF/H-Y

128 x 64 DOT MATRIX GRAPHIC MODULE, 1/64 DUTY,
1/6 BIAS, WITH NEGATIVE CHARGE PUMP,
EXTENDED TEMP., STN, YELLOW BACKGROUND.

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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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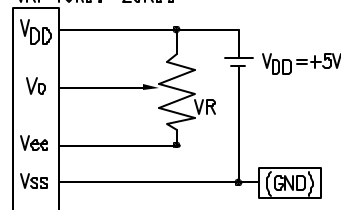
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APPROVED BY: DATE: 2.4.99
PAGE: 1 OF 2
SCALE: N/A

PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION	
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	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

V_{DD}-V₀: LCD DRIVING VOLTAGE

VR: 10KΩ-20KΩ



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 _{DD}
	LOW	V _{IL}	—	0	—	0.3*V _{DD}
*EDGE LIT LED BACKLIGHT	VOLTAGE	V _f	I _f =60mA	—	4.2	4.5
	CURRENT	I _f	—	—	60	—
	POWER CONSUMPTION	P _D	—	—	252	—
	LUMINOUS	L	I _f =60mA	—	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°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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DRAWN BY:

JC

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