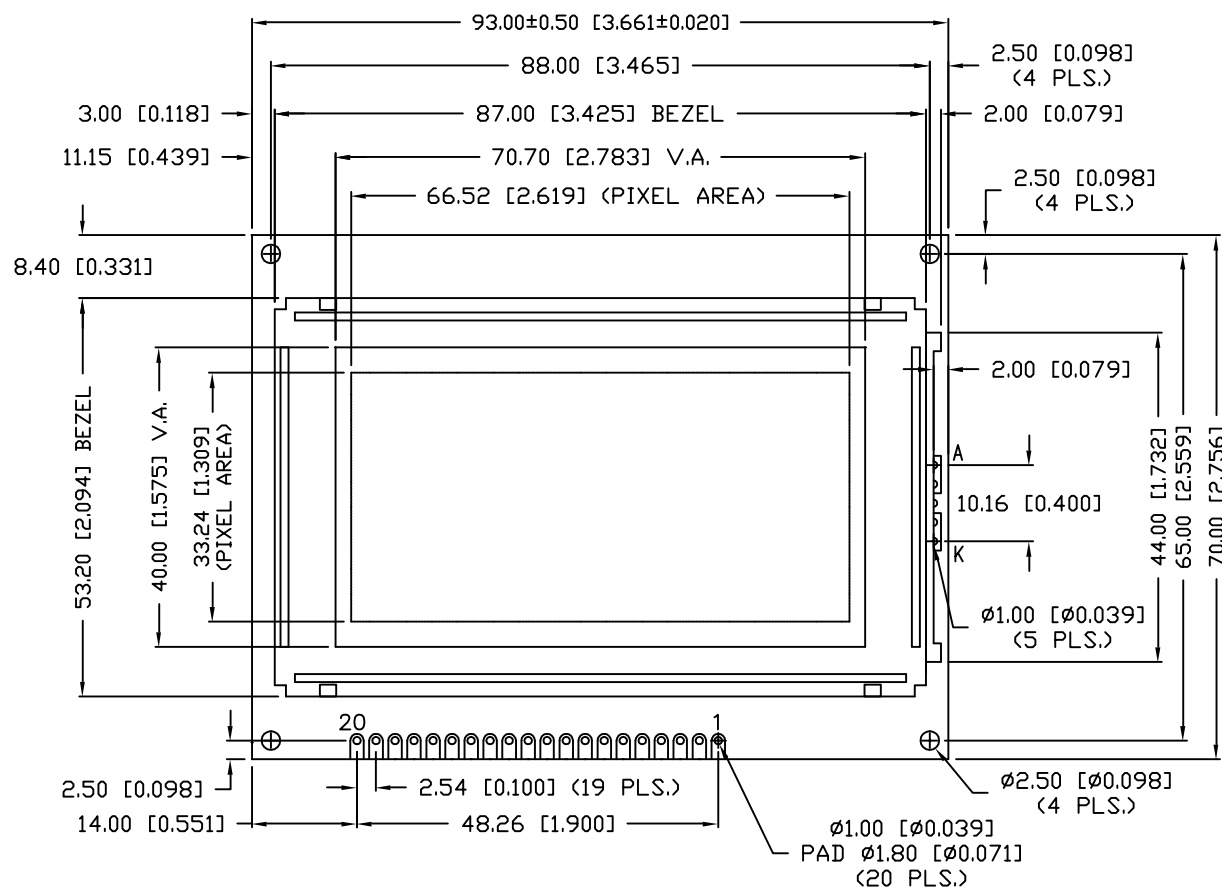
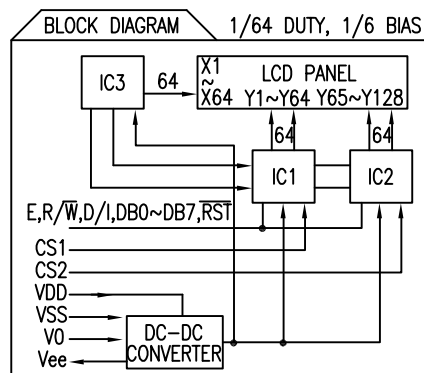
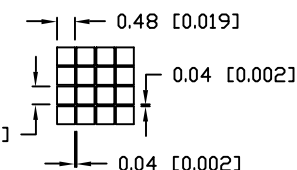


CAUTION: STATIC SENSITIVE DEVICE
FOLLOW PROPER E.S.D. HANDLING PROCEDURES
WHEN WORKING WITH THIS PART.



PIXEL DETAIL



*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

UNCONTROLLED DOCUMENT

REV.

PART NUMBER

LCM-S12864GWF/D-W

128 x 64 DOT MATRIX GRAPHIC MODULE,
TRANSFLECTIVE, FSTN, WHITE LED BACKLIGHT,
1/64 DUTY, 1/6 BIAS, WITH NEGATIVE CHARGE PUMP.

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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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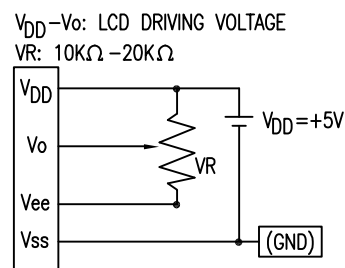
DATE: 10.16.03

CT

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SCALE: N/A

PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	-	POWER SUPPLY
2	V _{DD}	-	
3	V _O	-	
4	D/I	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)
6	E	H,H->L	ENABLE
7~14	DB0~DB7	H/L	DATA BUS
15	CS1	H/L	CHIP SELECTION SIGNAL FOR IC1
16	CS2	H/L	CHIP SELECTION SIGNAL FOR IC2
17	RST	-	RESET SIGNAL (ACTIVE "LOW")
18	V _{EE}	-	OUTPUT VOLTAGE FOR LCD DRIVING (-5V)
19	A	-	ANODE
20	K	-	CATHODE



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 VOLTAGE FOR LCD		V _{DD} -V _O	—	7.6	8.3	9.2	V	
SUPPLY CURRENT FOR LOGIC		I _{DD}	V _{DD} =5V	—	8.0	—	mA	
INPUT VOLTAGE		HIGH	V _{IH}	—	0.7*V _{DD}	—	V _{DD}	V
		LOW	V _{IL}	—	0	—	0.3*V _{DD}	V
*LED BACKLIGHT	VOLTAGE		V _f	I _f =60mA	—	3.5	3.6	V
	CURRENT		I _f	—	—	60	—	mA
	POWER CONSUMPTION		P _D	—	—	210	—	mW
	LUMINOUS		L	I _f =60mA	—	TBA	—	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 _O	-	0	14	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	LCM-S	0	50	°C
		LCM-H	-20	70	°C
		LCM-S	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	LCM-H	-30	85	°C

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