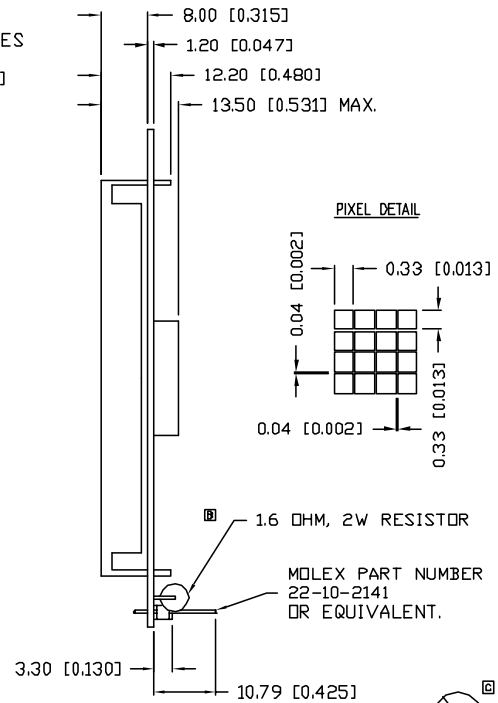
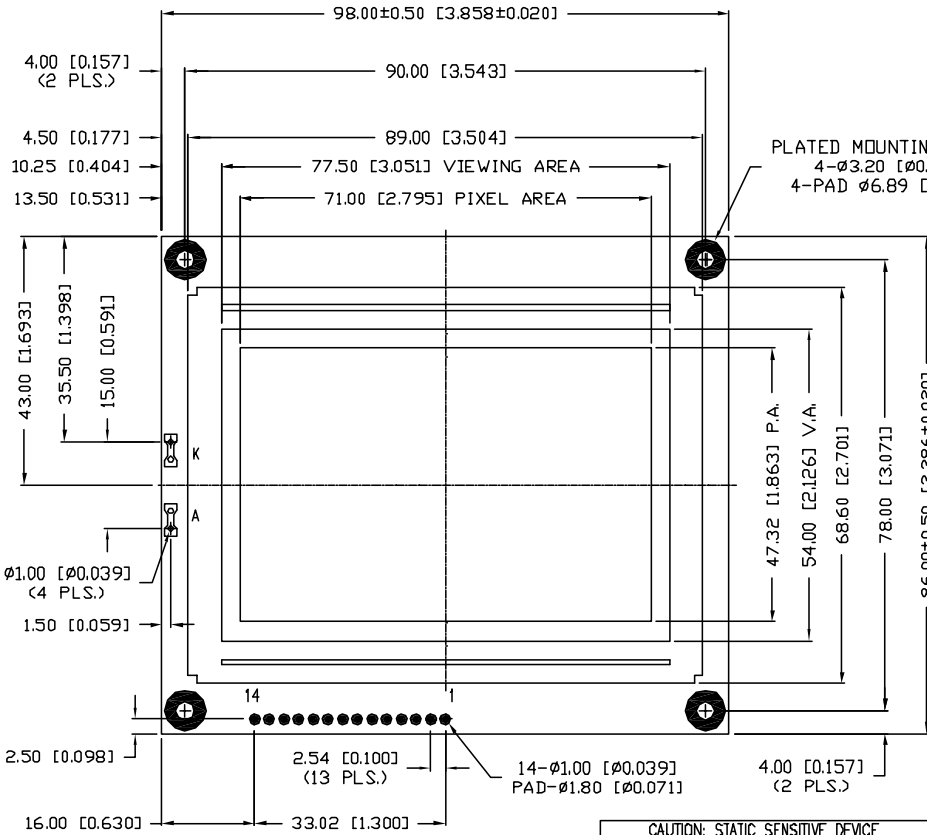


UNCONTROLLED DOCUMENT

PART NUMBER		REV.
LCM-H192128GSF-Y		C
REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #E10578.	12-20-99
B	E.C.N. #E10596.	2-23-00
C	E.C.N. #E11148.	5.2.07



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

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 [±0.038], XX=±0.5 [±0.020], XXX=±0.25 [±0.010], XXXX=±0.127 [±0.006]. LEAD SIZE=±0.05 [±0.002], LEAD LENGTH=±0.75 [±0.030], NN=DECIMAL PRECISION MAX.=+0.00 DECIMAL PRECISION

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192 x 128 GRAPHIC MODULE, STN. TRANSFLECTIVE,  
YELLOW BACKGROUND, LED BACKLIGHT  
NO CONTROLLER, EXTENDED OPERATING TEMPERATURE.

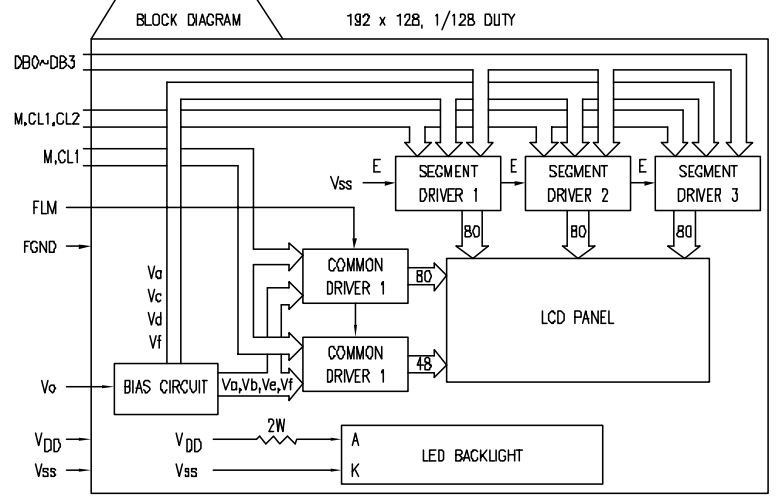
RELIABILITY NOTE  
OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.

DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE: 11.29.99
JC			PAGE: 1 OF 1
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	SEE PAGE 1.	

PIN CONFIGURATION		
PIN NO.	SYMBOL	FUNCTION
1	D3	DATA LINE
2	D2	DATA LINE
3	FLM	THE FLM SIGNAL INDICATES THE BEGINNING OF EACH DISPLAY CYCLE
4	M	ALTERNATION CONTROL SIGNAL
5	CL1	DATA LATCH CLOCK PULSE
6	CL2	DATA SHIFT CLOCK PULSE
7	D1	DATA LINE
8	D0	DATA LINE
9	V <sub>DD</sub>	POWER SUPPLY (+5V)
10	V <sub>SS</sub>	POWER SUPPLY (GND)
11	V <sub>O</sub>	LCD CONTRAST VOLTAGE
12	FGND	FRAME GROUND
13	N/C	NO CONNECTION
14	N/C	NO CONNECTION
LED BACKLIGHT	A	ANODE CONNECTED TO VDD PIN #9
LED BACKLIGHT	K	CATHODE CONNECTED TO VSS PIN #10



NOTE: 1.6 OHM 5% 2W RESISTOR MOUNTED ON THE PCB FOR LED BACKLIGHT. SMT RESISTOR VALUES FOR VOLTAGE DIVIDER ON PCB: R1=R2=R4=R5=2.42kΩ, R3=20.3kΩ

ELECTRICAL CHARACTERISTICS		V <sub>DD</sub> =4.7V to 5.3V, T <sub>A</sub> =25°C		STANDARD VALUE			UNIT
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.		
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	-	4.5	5.0	5.5		V
SUPPLY CURRENT FOR LOGIC	I <sub>DD</sub>	V <sub>DD</sub> =5V	-	3.0	4.5		mA
INPUT VOLTAGE	HIGH	V <sub>IH</sub>	-	0.8*V <sub>DD</sub>	-	-	V
	LOW	V <sub>IL</sub>	-	0	-	0.2*V <sub>DD</sub>	V
OUTPUT VOLTAGE	HIGH	V <sub>OH</sub>	-	V <sub>DD</sub> -0.4	-	-	V
	LOW	V <sub>OL</sub>	-	-	-	0.4	V
LED BACKLIGHT	VOLTAGE	V <sub>f</sub>	I <sub>f</sub> =640	-	5V	-	V
	CURRENT	I <sub>f</sub>	-	-	640	-	mA
	POWER CONSUMPTION	PD	-	-	3.2	-	W
	LUMINOUS	L	I <sub>f</sub> =640	-	-	-	cd/m <sup>2</sup>
DOMINANT WAVELENGTH	λ <sub>d</sub>	I <sub>f</sub> =20	-	573	-	-	nm

ABSOLUTE MAXIMUM RATINGS		TEST CONDITION	STANDARD VALUE		UNIT
ITEM	SYMBOL		MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	T <sub>a</sub> =25°C	0	7	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>O</sub>	-	0	20	V
INPUT VOLTAGE	V <sub>I</sub>	T <sub>a</sub> =25°C	-0.3	V <sub>DD</sub> +0.3	V
OPERATING TEMPERATURE	T <sub>opr</sub>	LCM-H	-20	70	°C
STORAGE TEMPERATURE	T <sub>stg</sub>	LCM-H	-30	80	°C

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=#1 (+0.039), X.X=#0.5 (+0.029), X.XX=#0.25 (+0.019), X.XXX=#0.127 (+0.006). LEAD SIZE=±0.05 (+0.002), LEAD LENGTH=±0.75 (+0.030). MIN.=+DECIMAL PRECISION MAX.=+0.00 -DECIMAL PRECISION

REV.	PART NUMBER
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