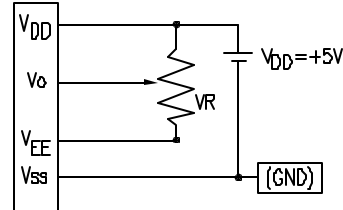


UNCONTROLLED DOCUMENT

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

$V_{DD}-V_o$: LCD DRIVING VOLTAGE
 V_R : 10K Ω - 20K Ω

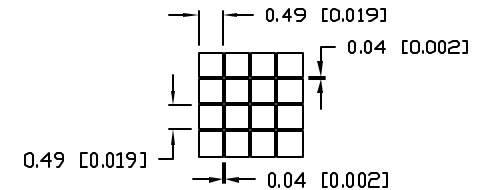


PART NUMBER
LCM-H24064GSF-1

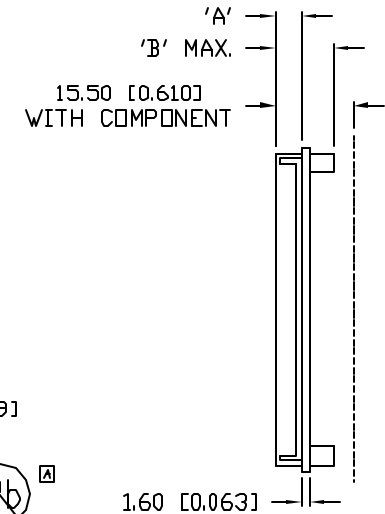
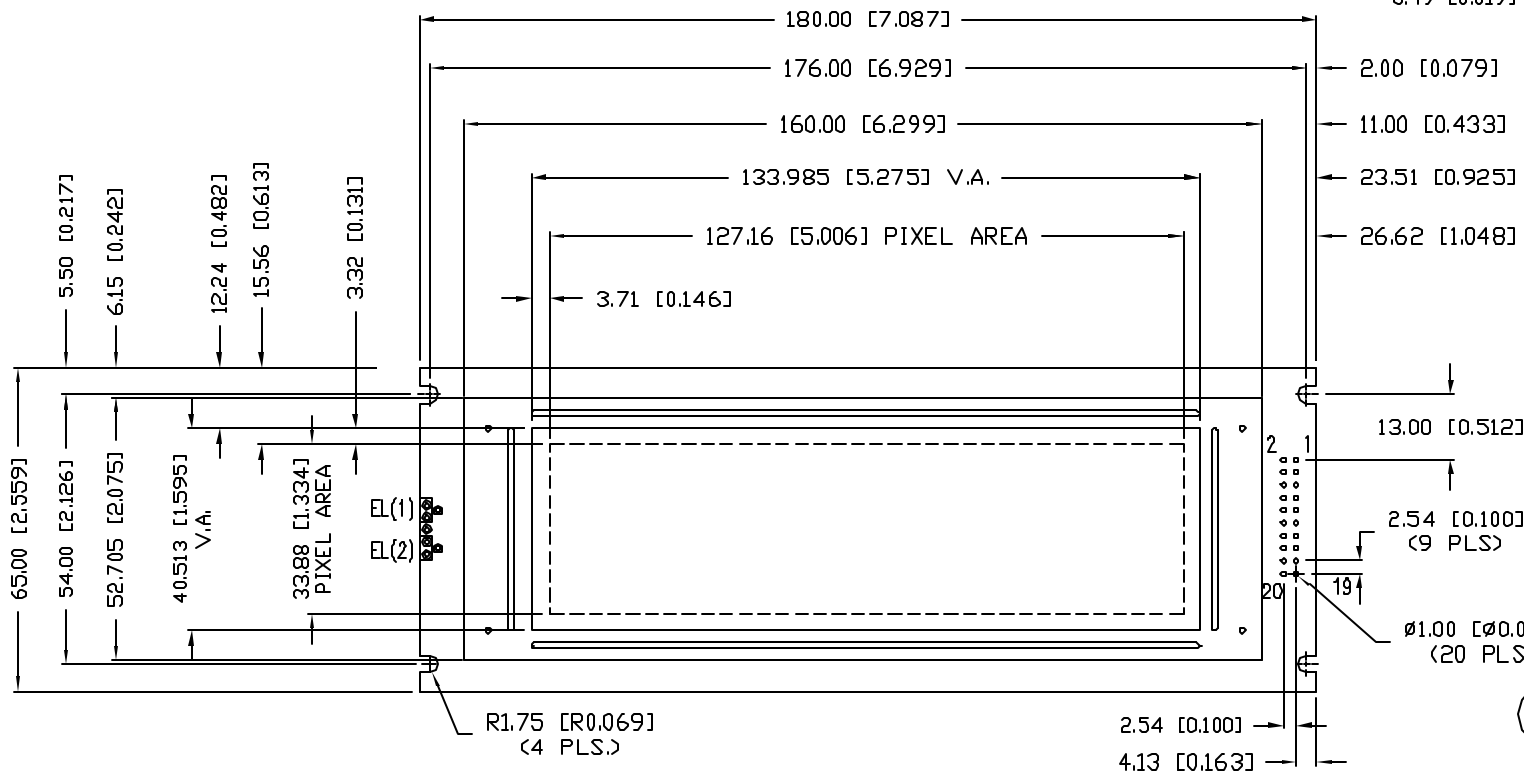
REV.
A

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

PIXEL DETAIL



VERSION	A	B	MODULE SIZE
R & EL	5.2	11.5	180x65
CCFL	7.5	14.0	187x65
LED	9.1	14.0	180x65



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

REV. A PART NUMBER LCM-H24064GSF-1

240 x 64 DOT MATRIX GRAPHIC MODULE, 1/64 DUTY,
WITH NEGATIVE CHARGE PUMP,
STN, TRANSFLECTIVE, WHITE EL BACKLIGHT,

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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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DRAWN BY: JC CHECKED BY: APPROVED BY: DATE: 11.27.03
PAGE: 1 OF 1
SCALE: N/A

UNCONTROLLED DOCUMENT

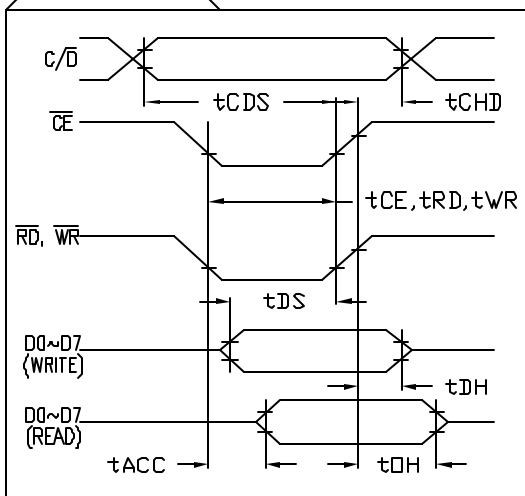
ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
POWER SUPPLY VOLTAGE FOR LOGIC	VDD	Ta=25°C	4.5	5.0	5.5	V
POWER SUPPLY CURRENT FOR LOGIC	IDD	VDD-VSS=5V	—	16.0	25.0	mA
INPUT VOLTAGE	VIH	HIGH LEVEL	2.2	—	VDD	V
INPUT VOLTAGE	VIL	LOW LEVEL	—	—	0.6	V
OUTPUT VOLTAGE	VOH	HIGH LEVEL	2.4	—	—	V
OUTPUT VOLTAGE	VOL	LOW LEVEL	—	—	0.4	V
POWER SUPPLY VOLTAGE FOR LCD DRIVE (−20°C TO +70°C)	VDD-Vo	VDD=5V Ta=25°C	12.6	14.1	14.9	V
EL DRIVING VOLTAGE	VEL	Ta=25°C	—	100	150	Vrms
EL FREQUENCY	fEL	—	—	400	1000	Hz
EL CURRENT	IEL	Ta=25°C	—	5.6	—	mAms

ELECTRIC MAXIMUM RATING

ITEM	SYMBOL	MIN	TYP	MAX	UNIT
POWER SUPPLY FOR LCD DRIVE	VDD-Va	0	—	24.0	V
POWER SUPPLY FOR LOGIC	VDD-VSS	0	—	7.0	V
INPUT VOLTAGE	VI	VSS	—	VDD	V
OPERATING TEMPERATURE	—	-20	—	70	°C
STORAGE TEMPERATURE	—	-30	—	80	°C

BUS TIMING



PIN CONFIGURATION

PIN #	SYMBOL	LEVEL	FUNCTION
1	FGND	—	FRAME GROUND (CONNECTED TO METAL BEZEL)
2	GND	0V	SIGNAL GROUND
3	VDD	+5V	POWER SUPPLY
4	V _o	—	CONTRAST ADJUSTMENT VOLTAGE
5	WR	L	DATA WRITE
6	RD	L	DATA READ
7	CE	L	CHIP ENABLE
8	C/D	H/L	WR="L", C/D="H": COMMAND WRITE C/D="L": DATA WRITE RD="L", C/D="H": COMMAND READ C/D="L": DATA READ
9	VEE	−15V	OUTPUT VOTAGE FOR LCD DRIVING
10	RESET	L	CONTROL RESET (MODULE RESET)
11~18	D0~D7	H/L	DATA BUS
19	FS	H/L	FONT SELECT "H": 6 x 8 PIXEL/FONT "L": 8 x 8 PIXEL/FONT
20	N/C	—	NO CONNECTION

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-0.00 -DECIMAL PRECISION

REV.

A

PART NUMBER

LCM-H24064GSF-I

240 x 64 DOT MATRIX GRAPHIC MODULE, 1/64 DUTY,
WITH NEGATIVE CHARGE PUMP,
STN, TRANSFLECTIVE, WHITE EL BACKLIGHT,

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DRAWN BY:

JC

PART NUMBER

LCM-H24064GSF-I

REV.

A

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

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SEE PAGE #1

TIMING CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT
C/D SETUP TIME	t_{CDS}	100	—	ns
C/D HOLD TIME	t_{CDH}	10	—	ns
$\overline{CE}$, $\overline{RD}$, $\overline{WR}$ PULSE WIDTH	t_{CE} , t_{RD} , t_{WR}	80	—	ns
DATA SETUP TIME	t_{DS}	80	—	ns
DATA HOLD TIME	t_{DH}	40	—	ns
ACCESS TIME	t_{ACC}	—	150	ns
OUTPUT HOLD TIME	t_{OH}	10	50	ns

BLOCK DIAGRAM

