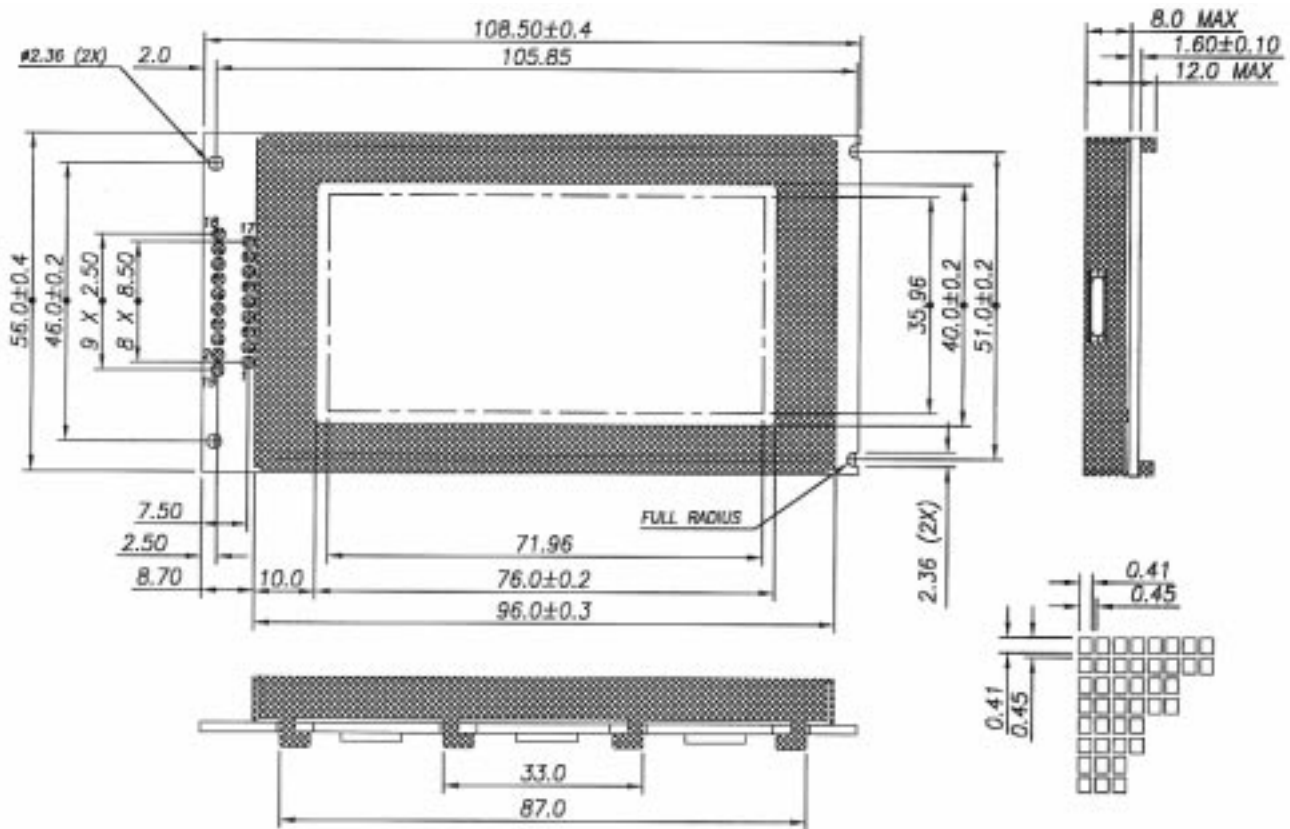


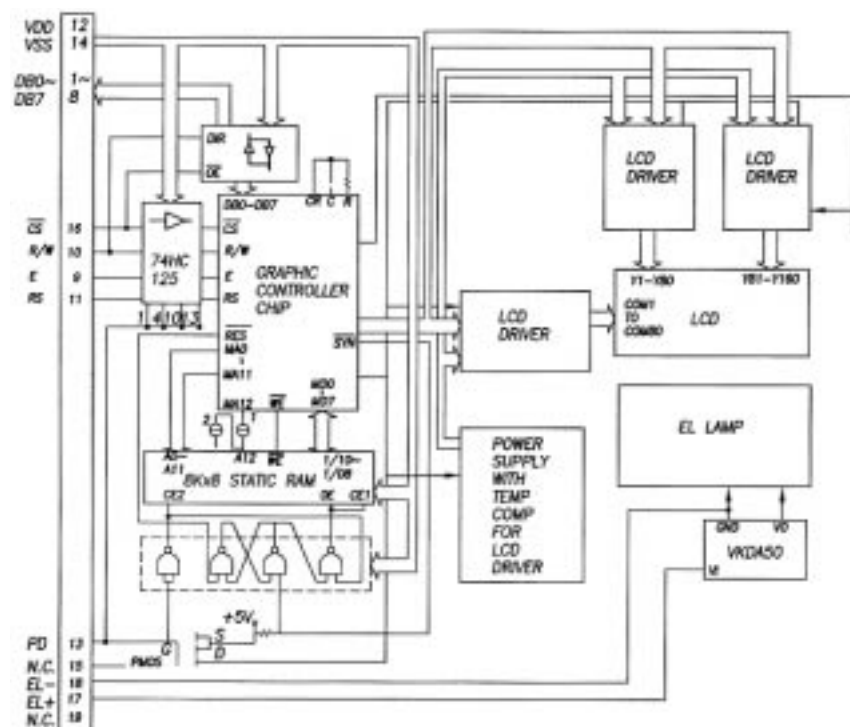
HMF8501

LCD Module 80 x 160 Dots



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Block Diagram



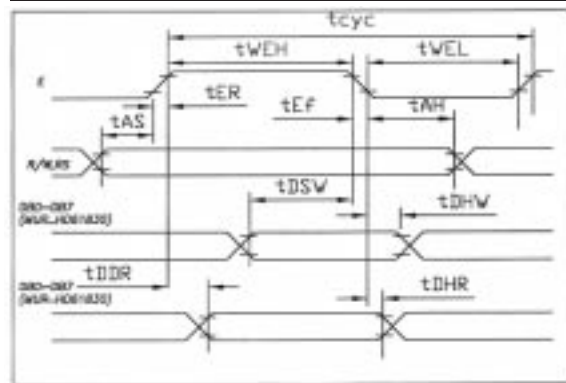
PIN ASSIGNMENT

PIN NO.	SYMBOL	LEVEL	FUNCTION
1~8	DB7~DB0	H/L	8-BIT DATA BUS
9	E	H,H-L	ENABLE E=H..DATA CAN BE READ E=H-L ... DATA CAN BE WRITTEN
10	R/W	H/L	READ/WRITE R/W=1...READ R/W=0...WRITE
11	RS	H/L	REGISTER SELECT RS=1...INSTRUCTION RS=0...DATA
12	VDD	-	POWER SUPPLY TERMINAL OF MODULE +5V DC
13	PD	-	POWER DOWN INPUT PD=1...POWER DOWN MODE PD=0...NORMAL MODE
14	VSS	-	TERMINAL OF GROUND MODULE
15	NC	-	NO CONNECTION
16	CS	L	CHIP SELECT
17	EL+	+5VDC	SUPPLY FOR EL DRIVER CIRCUITRY
18	EL-	OV	TERMINAL OF EL GROUND

TIMING CHARACTERISTICS

No.	PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT
1	Enable cycle time	tcyc	1.0	-	-	μ s
2	Enable pulse width	tWEH tWEL	0.45 0.45	- -	- -	μ s
3	Enable raise time	tEr	-	-	25	ns
4	Enable fall time	tEf	-	-	25	ns
5	Set-up time	tAS	140	-	-	ns
6	Data set-up time	tDSW	225	-	-	ns
7	Data delay time	tDDR	-	-	225	ns
8	Address hold time	tAH	10	-	-	ns
9	Data hold time (Write)	tDHW	10	-	-	ns
10	Data hold time (Read)	tDHR	20	-	-	ns

TIMING DIAGRAM



ABSOLUTE MAXIMUM RATING

No.	PARAMETER	SYMBOL	MIN	MAX	UNIT
1	Power supply for logic	VDD-VSS	0	7	V
2	Input voltage	Vi	VSS	VDD	V
3	Operating temperature	Ta	0	50	°C
4	Storage Temperature	Tstg	-20	70	°C

ELECTRICAL CHARACTERISTICS (TA=+25°C)

No.	PARAMETER	SYMBOL	CONDITION	MIN	MAX	MAX	UNIT
1	Power supply for logic	VDD	-	4.75	5	5.25	V
2	Supply module current - Normal mode	IDD	VDD=5.0V	-	15	20	mA
3	Module standby current	IDDSBY	PD=5.0V	-	1	-	mA
4	Input high voltage for logic	VIH	VDD=4.5V	3.15	-	-	V
5	Input low voltage for logic	VIL	VDD=4.5V	0	-	1	V
6	Output high voltage for logic	VDH	IDH=-0.02mA	4.4	-	-	V
7	Output low voltage for logic	VDL	IQL=0.02mA	-	-	1	V
8	PD (Power down) input voltage	VIH VIL	VDD=5.0V	4.5V -	- -	- 0.1	V
9	EL driver input	VELT	-	-	-	1	V
10	EL supply current	IEL	EL+=5.0V	-	80	100	mA