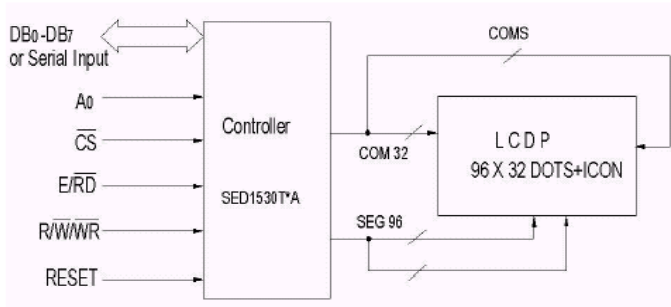


~ General Outline Dimension ~

TYPE OF PRODUCTS

ITEM	DIMENSIONS	UNIT
MODULE SIZE (W x H x t)	38.0(W) x 29.6(H) x 1.5(t) Max	mm
VIEWING AREA (W x H)	35.0(W) x 23.6(H)	mm
ACTIVE AREA (W x H)	30.69(W) x 20.2213(H)	mm
DOT SIZE (W x H)	0.4(W) x 0.29(H)	mm
DOT PICTH (W x H)	0.435(W) x 0.325(H)	mm

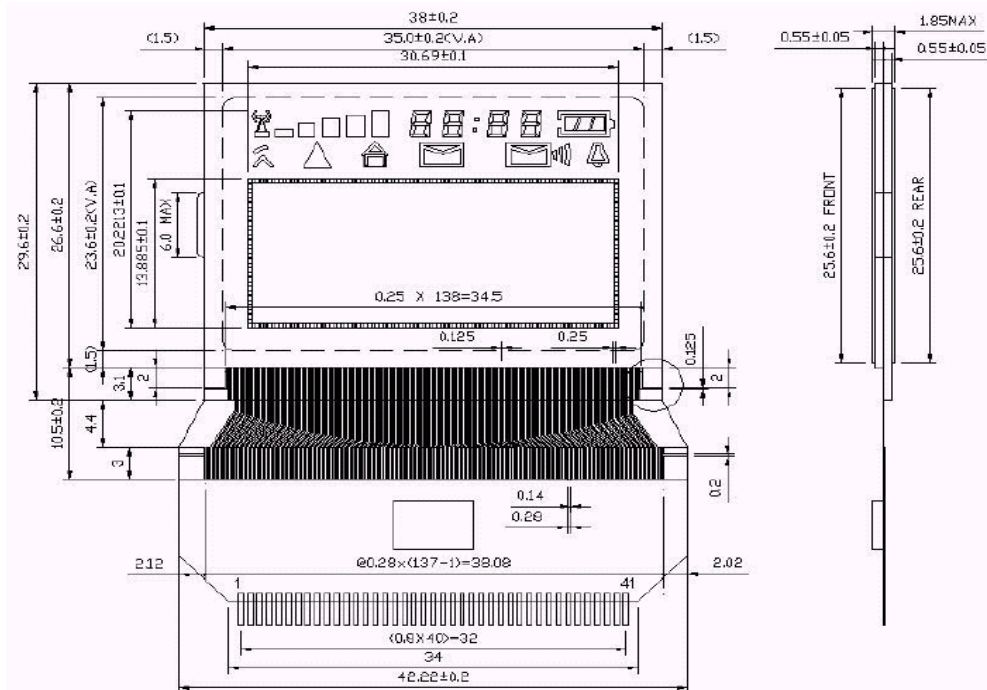
BLOCK DIAGRAM



PIN ASSIGNMENT

PIN NO.	SYMBOL	FUNCTION
1	V5	POWER SUPPLY FOR LCD DRIVING VOLTAGE(V1-V5) (OP AMP BUILT-IN)
2	V4	
3	V3	
4	V2	
5	V1	
6	VDD	GND
7	VR	REFERENCE
8	CAP2+	DC / DC VOLTAGE CONVERTER CAPACITORS (I/O)
9	CAP2-	
10	CAP1-	
11	CAP+	
12	CAP3-	
13	VOUT	
14	VSS	GND
15	D7	GND
16	D6	DATA BUS LINE
17	D5	DATA BUS LINE
18	D4	DATA BUS LINE
19	D3	DATA BUS LINE
20	D2	DATA BUS LINE
21	D1	DATA BUS LINE
22	D0	DATA BUS LINE
23	VDD	DATA BUS LINE
24	RD	GND
25	WR	DATA READ
26	A0	DATA WRITE
27	C86	DATE / COMMAND SELECT
28	CS2	MPU SELECT
29	CS1	CHIP SELECT 2

OUTLINE DIMENSIONS



■ ABSOLUTE MAXIMUM RATING

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	VDD - VSS	Ta=25°C	-0.3	—	VDD +0.3	V
POWER SUPPLY FOR LCD DRIVING	VDD - V0	Ta=25°C	-0.3	—	+16	V
INPUT VOLTAGE	VIN	Ta=25°C	0	—	VDD	V
OPERATION TEMPERATURE	TOPR	—	- 20	—	+70	°C
STORAGE TEMPERATURE	TSTG	—	- 30	—	+80	°C

■ ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY VOLTAGE	VDD	—	-0.3	—	VDD +0.3	V
POWER SUPPLY FOR LCD DRIVING	VDD - V0	Ta=25°C	8.73	9.0	9.27	V
INPUT VOLTAGE "H" LEVEL	VIH	—	0.8 VDD	—	VDD	V
INPUT VOLTAGE "L" LEVEL	VIL	—	0	—	0.2 VDD	V
OUTPUT VOLTAGE "H" LEVEL	VOH	—	0.9 VDD	—	VDD	V
OUTPUT VOLTAGE "L" LEVEL	VOL	—	0	—	0.1 VDD	V
POWER SUPPLY CURRENT	IDD	—	—	—	—	uA
	IEE	—	—	150	300	uA

■ TIMING CHARACTERISTICS-1

ITEM	SIGNAL	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Address Hold time	A0	tAH8	—	19	—	—	ns
Address Setup time		tAW8	—	15	—	—	ns
System cycle time	—	tCYC8	—	450	—	—	ns
Control L pulse width(WR)	WR	tCCLW	—	60	—	—	ns
Control L pulse width(RD)	RD	tCCLR	—	140	—	—	ns
Control H pulse width(WR)	WR	tCCHW	—	200	—	—	ns
Control H pulse width(RD)	RD	tCCHR	—	140	—	—	ns
Data setup time	—	tDS8	—	40	—	—	ns
Data hold time	—	tDH8	—	15	—	—	ns
RD access time	D0 to D7	tACC8	CL=100pF	—	—	140	ns
Output disable time		tCH8	—	10	—	100	ns

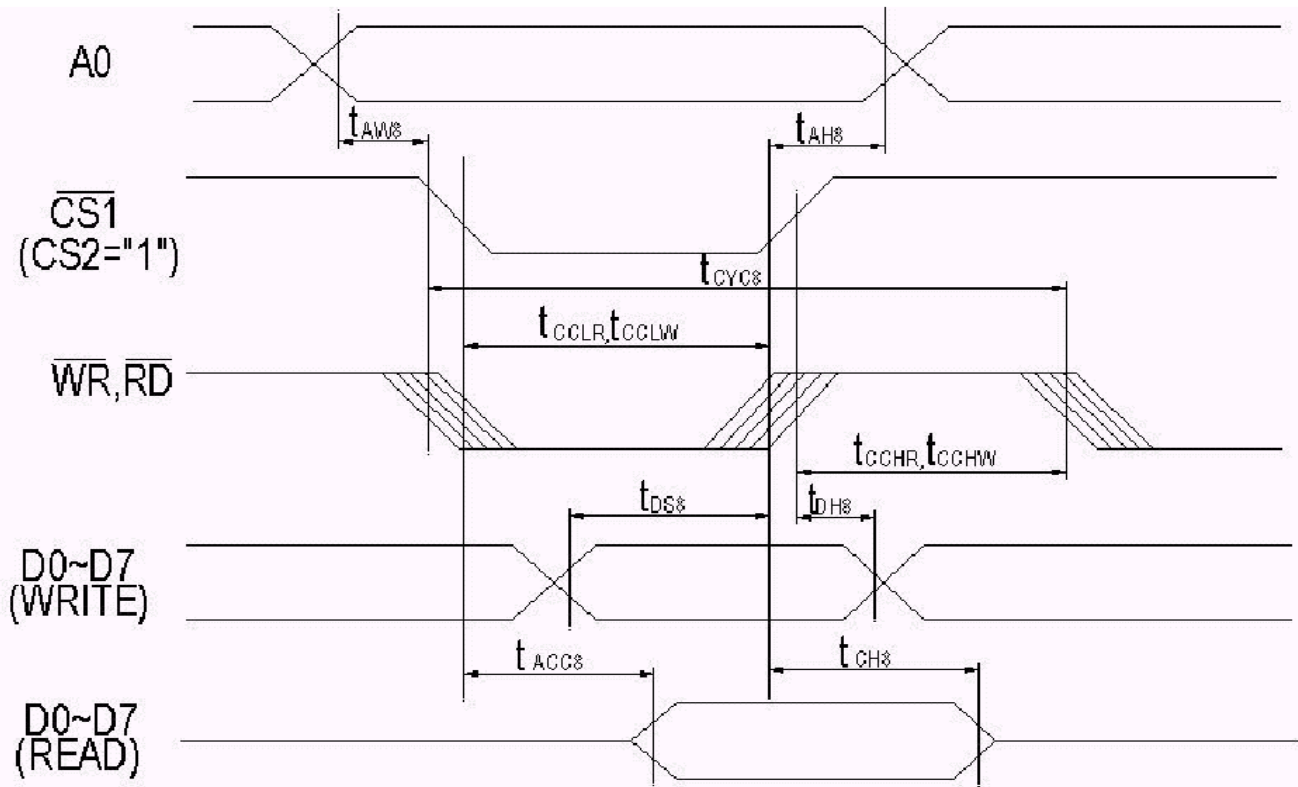


Figure 1. Parallel 8080-series interface Timing Characteristics

TIMING CHARACTERISTICS-2

ITEM	SIGNAL	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
System cycle time	—	tCYC6	—	450	—	—	ns
Address setup time	A0	tAW6	—	15	—	—	ns
Address hold time	R/W	tAH6	—	19	—	—	ns
Data setup time	D0 to D7	tDS6	—	40	—	—	ns
Data hold time		tDH6	—	15	—	—	ns
Output disable time		tOH6	CL=100pF	10	—	100	ns
Access time		tACC6		—	—	140	ns
Enable low pulse width	READ	tEWHR	—	140	—	—	ns
	WRITE	tEWHW		60	—	—	ns
Enable high pulse width	READ	tEWLR	—	140	—	—	ns
	WRITE	tEWLW		200	—	—	ns

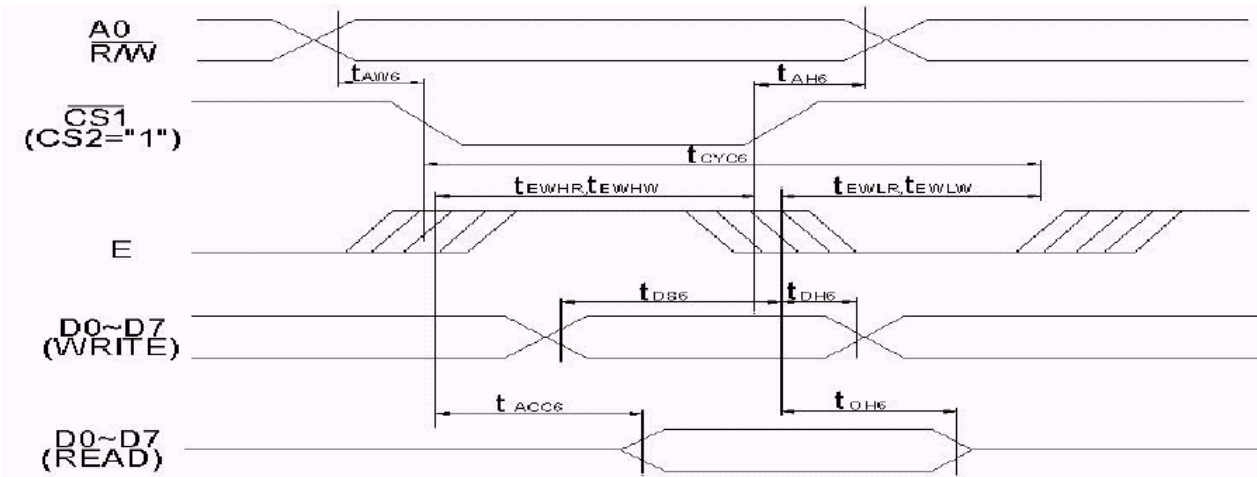


Figure 2. Parallel 6800-series interface Timing Characteristics

TIMING CHARACTERISTICS-3

ITEM	SIGNAL	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
Serial clock cycle	SCL	tSCYC	—	500	—	—	ns
Serial clock H pulse width		tSHW	—	200	—	—	ns
Serial clock L pulse width		tSLW	—	150	—	—	ns
Address setup time	A0	tSAS	—	100	—	—	ns
Address hold time		tSAH	—	400	—	—	ns
Data setup time	SI	tSDW	—	100	—	—	ns
Data hold time		tSDH	—	100	—	—	ns
CS serial clock time	CS	tCSS	—	60	—	—	ns
		tCSH	—	200	—	—	ns

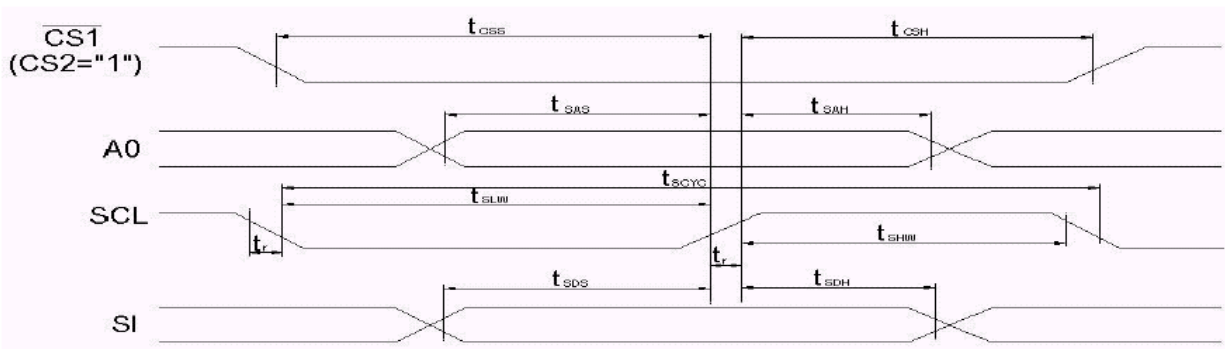


Figure 3. Serial Timing Characteristics