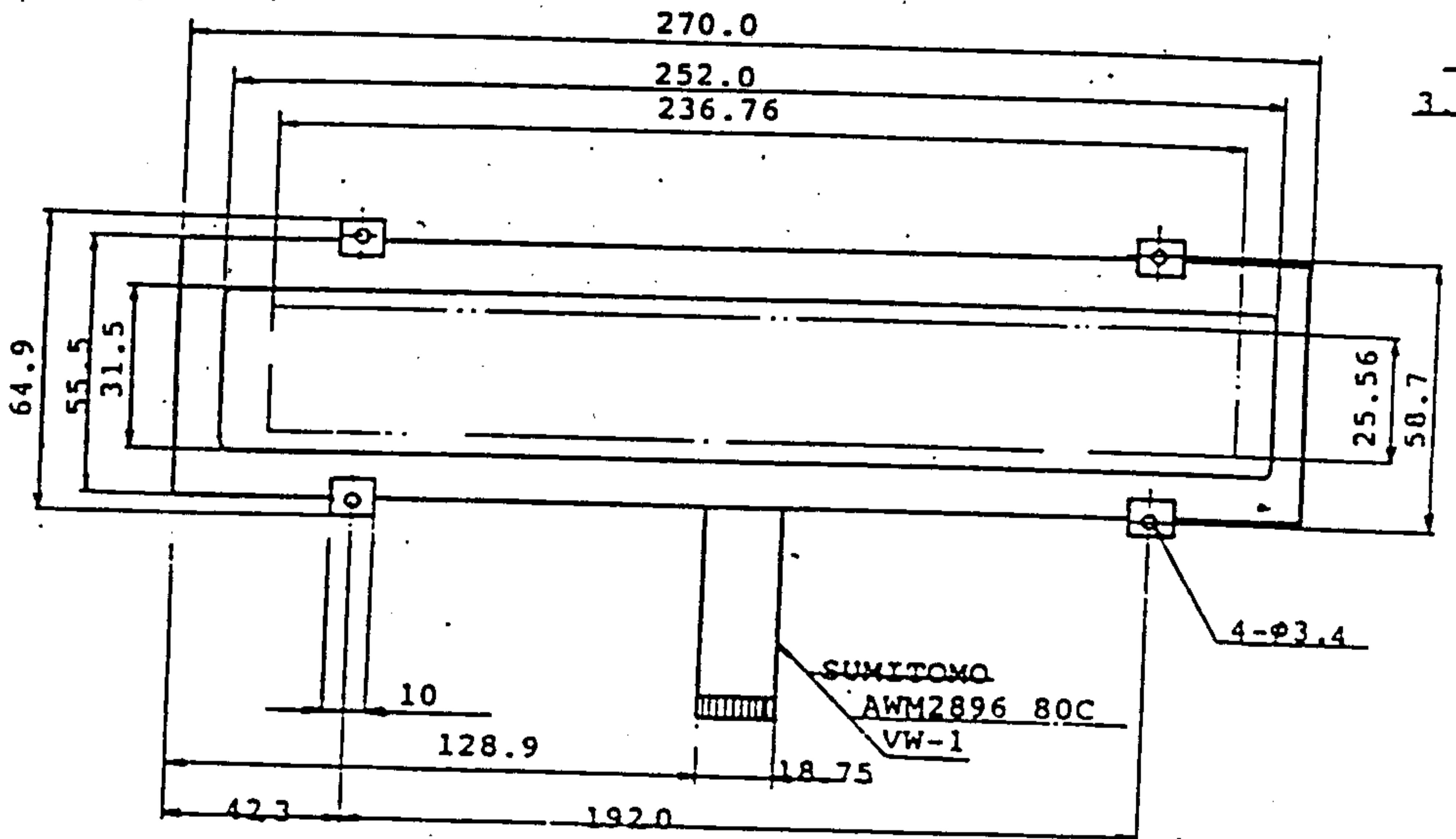


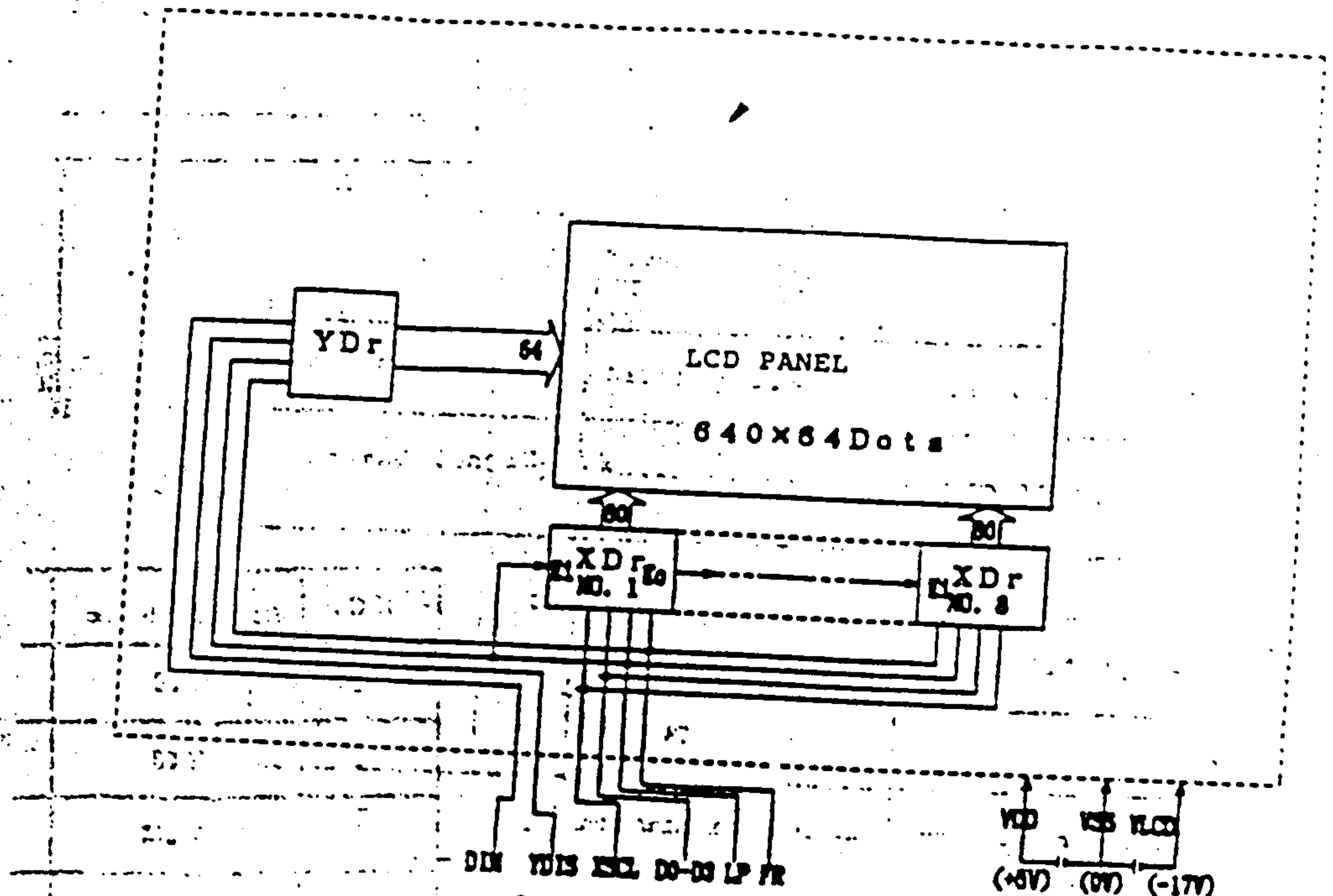
ITEM	SPEC.
DOT MATRIX	640 x 64
OVERALL DIMENSION	270 x 55.5 x 11.5
VIEWING AREA	252.0 x 31.5
ACTIVE AREA	236.76 x 25.56
DOT PITCH	0.37 x 0.40
DOT SIZE	0.33 x 0.36
WEIGHT (APPROX)	100 g

~~Epson #~~
EG-20015-AF

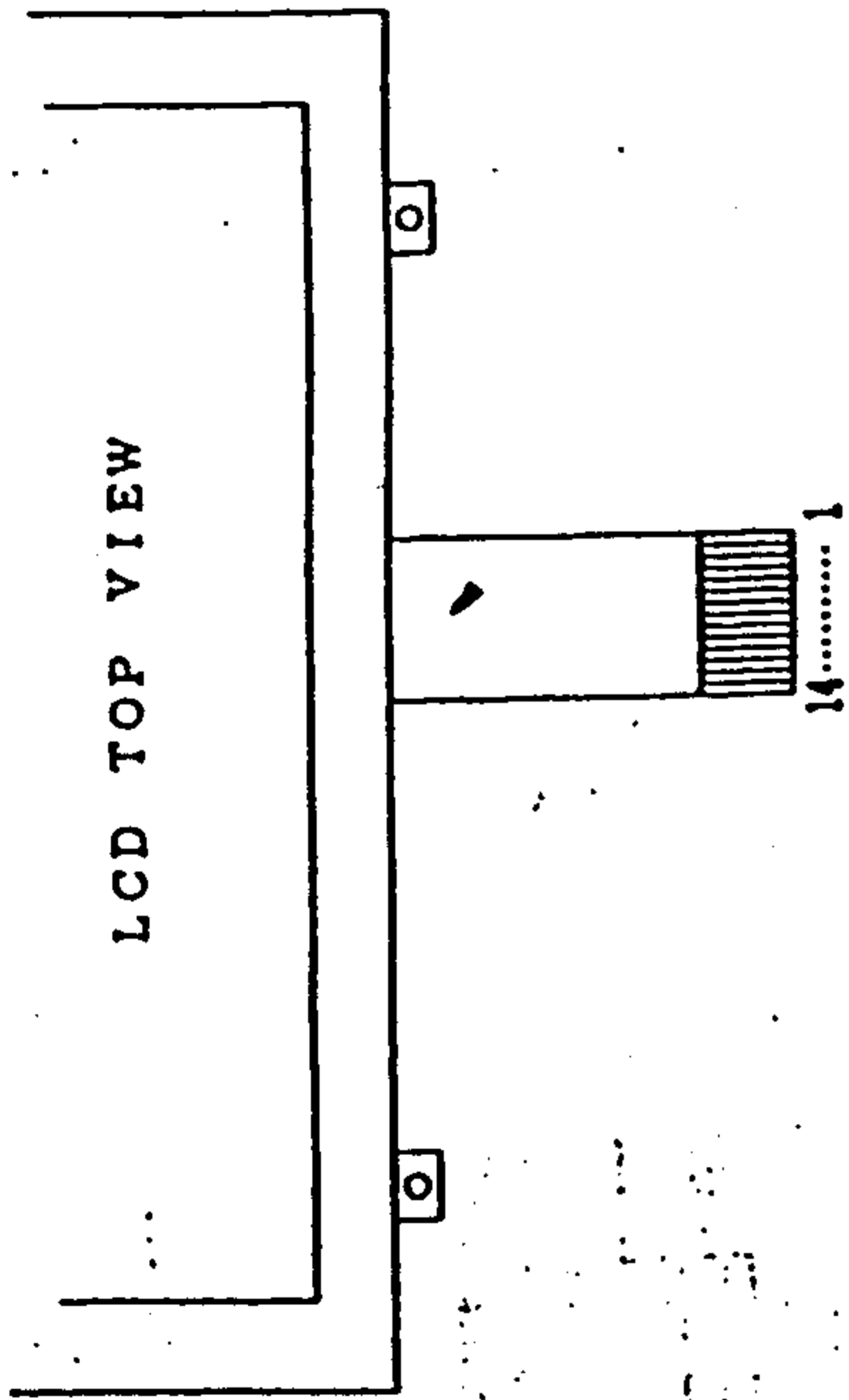
CAT# LCD-28



3. BLOCK DIAGRAM



4.1 Terminal Configuration



4.2 Signal Names

NO.	Signal Name	NO.	Signal Name
1	VDD	8	DIN
2	VSS	9	XSCL
3	VLCD	10	NC
4	LP	11	D0
5	FR	12	D1
6	YDIB	13	D2
7	NC	14	D3

No.	Symbol	I/O	Name	Function
1	VDD	I	power supply	+5V±5%
2	VSS	I	LOGIC GND	0V
3	VLCD	I	Power supply for LCD panel contrast pot	VDD-VLCD = MAX.22V
4	LP	I	Latch pulse	Data latch signal
5	FR	I	Frame pulse	LCD AC driving signal
6	YDIS	I	Display control	YDIS="0" Display off YDIS="1" Display on
7	NC	-	NC	
8	DIN	I	Synchronizing pulse	Row scan start-up pulse
9	XSCL	I	X shift clock	Data shift clock
10	NC	-	NC	
11 12 13 14	D0~D3	I	Data	Display data input

1.2 A.C Characteristics

Parameter	Symbol	Standard Value			Unit	Condition
		Min.	Typ.	Max.		
FR delay time	TFD	-800	0	800	nsec	VDD = 5V VDD = 5V
LP period	TLC	-	220	-	μsec	
XSCL period	TXSC	166	-	-	nsec	
LP "L" time	TLL	280	-	-	nsec	
LP Pulse width	TLP	70	-	-	nsec	
XSCL "L" time	TXSL	70	-	-	nsec	
XSCL Pulse width	WXSC	70	-	-	nsec	
Latch timing	TLs1	70	-	-	nsec	
	TLs2	0	-	-		
	TLs3	70	-	-		
	TLd	0	-	-		
Data setup time	TDS	60	-	-	nsec	
Data hold time	TDH	40	-	-	nsec	
DIN setup time	TDIS	100	-	-	nsec	
DIN hold time	TDIH	10	-	-	nsec	
Rise time	tr	-	-	Max	nsec	
Fall time	tf	-	-	Max	nsec	

*1 TXSC- TXSL - WXSC

50 nsec.Max.

7. ELECTRICAL CHARACTERISTICS

7.1 DC CHARACTERISTICS

VDD=5V ± 5%
VSS=0V TOP=0~50°C

Parameter	Symbol	Standard value			Unit	Condition
		Min.	Typ.	Max.		
Supply voltage (Logic)	VDD	4.75	5	5.25	V	VDD
Supply voltage (LCD)	VLCD	VDD-22	-	-	V	VLCD
"High" input voltage	VIH	0.8VDD	-	VDD	V	
"Low" input voltage	VIL	0	-	0.2VDD	V	LP.FR. YDIS DIN.XSCL. D0~D3
"High" input leakage current	IIH	-	-	25	μA	
"Low" input leakage current	IIL	-	-	-25	μA	
Input capacitance	CI	-	-	120	pF	
Supply current (Logic)	IDD	-	-	-	mA	VDD .VDD=5V
		-	-	8	mA	.VLCD=-10V .Frame frequency 60Hz
		-	-	-	mA	
Supply current (LCD)	ILCD	-	-	6	mA	VLCD .VDD=5V
		-	-	-	mA	.VLCD=-10V .Frame frequency 60Hz
		-	-	-	mA	
Power consumption	PC	-	-	-	mW	.VDD=5V
		-	-	100	mW	.VLCD=-10V .Frame frequency 60Hz
		-	-	-	mW	

7.2.1 Timing Characteristics

X (Column).Y (Row) Driver

