HITACHI

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FOR MESSRS : _____ DATE : Jan.22.'99

CUSTOMER'S ACCEPTANCE SPECIFICATIONS

SP10Q005-T

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* WHEN PRODUCT WILL BE DISCONTINUED, CUSTOMER WILL BE INFORMED BY HITACHI WITH TWELVE MONTHS PRIOR ANNOUNCEMENT.

ACCEPTED BY; _____ PROPOSED BY: H.H. Shen

RECORD OF REVISION

DATE	SHEET No.	SUMMARY

3. MECHANICAL DATA

(1)	PART NAME	SP10Q005-T
(2)	MODULE SIZE	70.1 (W)mm * 92.1 (H)mm * 7.9 (D)mm MAX.
(3)	EFFECTIVE DISPLAY AREA	60.6 mm. * 79.8 mm.
(4)	DOT SIZE	0.225 (W)mm * 0.225 (H)mm
(5)	DOT PITCH	0.24 (W)mm * 0.24 (H)mm
(6)	NUMBER OF DOTS	240 (W) * 320 (H) DOTS
(7)	DUTY	1/320
(8)	BIAS	1/18
(9)	LCD	FILM TYPE BLACK/WHITE (POSITIVE TYPE) THE UPPER POLARIZER IS GLARE TYPE. THE BOTTOM POLARIZER IS TRANSFLECTIVE TYPE.
(10)	VIEWING DIRECTION	6 O'CLOCK
(11)	BACKLIGHT	LED (WHITE)

4. ABSOLUTE MAXIMUM RATINGS

4.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS.

VSS=0V:STANDARD

ITEM	SYMBOL	MIN.	MAX.	UNIT	COMMENT
POWER SUPPLY FOR LOGIC	VDD-VSS	-0.3	7.0	V	
POWER SUPPLY FOR LC DRIVE	VLCD-V0	0	36.0	V	
INPUT VOLTAGE	Vi	-0.3	VDD+0.3	V	NOTE 1,2

NOTE 1. DISP.OFF,YD, LOAD, CP,D0~D3,M.

NOTE 2. MAKE CERTAINS YOU ARE GROUNDED WHEN HANDLING LCM.

4.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS.

I T E M	OPERATING		STORAGE		COMMENT
	MIN.	MAX.	MIN.	MAX.	
AMBIENT TEMPERATURE	0°C	50°C NOTE 4	-20°C	60°C NOTE 4	NOTE 2,3
HUMIDITY	NOTE 1		NOTE 1		WITHOUT CONDENSATION
CORROSIVE GAS	NOT ACCEPTABLE		NOT ACCEPTABLE		

NOTE (1) 40°C 85%RH.....150HRS(POLARIZER & ADHESIVE TAPE DAMAGE ACCEPTED)
40°C 85%RH.....48HRS(POLARIZER & ADHESIVE TAPE DAMAGE NO ACCEPTED)

NOTE (2) Ta AT-20°C <48HRS , AT 60°C <168HRS.

NOTE (3) BACKGROUND COLOR CHANGES SLIGHTLY DEPENDING ON AMBIENT TEMPERATURE . THIS PHENOMENON IS REVERSIBLE.

NOTE (4) THERE ARE POSSIBLITY THAT COLOR UN-UNIFORMITY HAPPENED WHILE OPERATING AT 40°C.

5. ELECTRICAL CHARACTERISTICS

5.1 ELECTRICAL CHARACTERISTICS OF LCD

I T E M	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY VOLTAGE FOR LOGIC	VDD-VSS	-	2.7	3.3	5.5	V
POWER SUPPLY VOLTAGE FOR LC DRIVING	VLCD-VSS	-	26.0	-	33.0	V
INPUT VOLTAGE NOTE 1	VI	H LEVEL	0.8VDD	-	VDD	V
		L LEVEL	0	-	0.2VDD	V
POWER SUPPLY CURRENT FOR LOGIC NOTE 2	IDD	VDD-VSS=3.3V VLCD-VSS=26.3V	-	0.3	-	mA
POWER SUPPLY CURRENT FOR LC DRIVING NOTE 2	ILCD	VDD-VSS=3.3V VLCD-VSS=26.3V	-	1.8	-	mA
RECOMMENDED LC DRIVING VOLTAGE NOTE 3	VLCD-VSS	Ta= 0°C , θ=0°	-	27.4	-	V
		Ta=25°C , θ=0°	-	26.3	-	V
		Ta=40°C , θ=0°	-	25.4	-	V
FRAME FREQUENCY NOTE 4	fYD	-	70	-	120	Hz

NOTE (1) $\overline{\text{DISP . OFF}}$, YD , LOAD , CP , D0~D3.

NOTE (2) fYD=75Hz , D0~D3=0 , 1 , 0 , 1.....
VLCD-VSS=26.3V , Ta=25°C.

NOTE (3) RECOMMENDED LC DRIVING VOLTAGE FLUCTUATE ABOUT +/-0.5V BY EACH MODULE.
TEST PATTERN IS ALL “Q”.

NOTE (4) NEED TO MAKE SURE OF FLICKING AND RIPPING OF DISPLAY WHEN SETTING THE FRAME FREQUENCY IN YOUR SET.

5.2 ELECTRICAL CHARACTERISTICS OF LED BACKLIGHT

I T E M	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY VOLTAGE FOR LED BACKLIGHT	VLED	-	-	3.6	-	V
POWER SUPPLY CURRENT FOR LED BACKLIGHT	ILED	VLED=3.6V	-	75	90	mA
THE BRIGHTNESS ON LCM SURFACE	BLED	ϕ=0° , θ=0° VLED=3.6V	3.0	5.0	-	cd/m^2
BRIGHTNESS UNIFORMITY	-	-	-	-	50	%

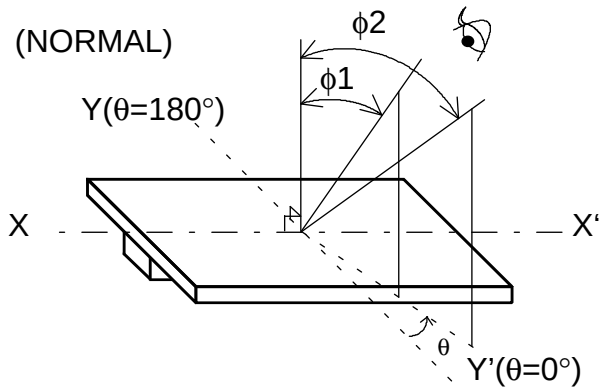
6. OPTICAL CHARACTERISTICS

6.1 LCM Ta=25°C

ITEM	SYMBOL	CONDITIONAL	MIN.	TYP.	MAX.	UNIT	NOTE
VIEWING AREA	$\phi2$-$\phi1$	K>=2.0	-	40	-	deg	1,2
CONTRAST RATIO	K	ϕ=0° , θ=0°	-	12			
RESPONSE TIME (RISE)	tr	ϕ=0° , θ=0°	-	200	-	ms	4
RESPONSE TIME (FALL)	tf	ϕ=0° , θ=0°	-	400	-	ms	4

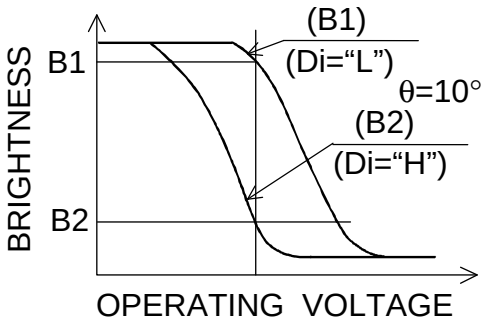
(MEASURE CONDITION BY HITACHI)

NOTE 1. DEFINITION OF θANDϕ

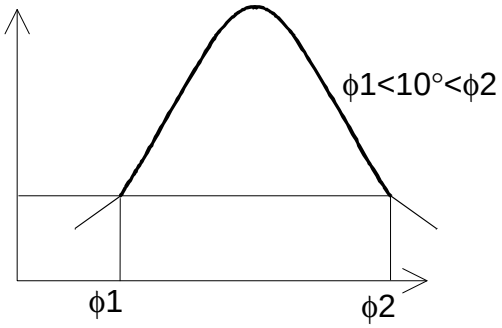


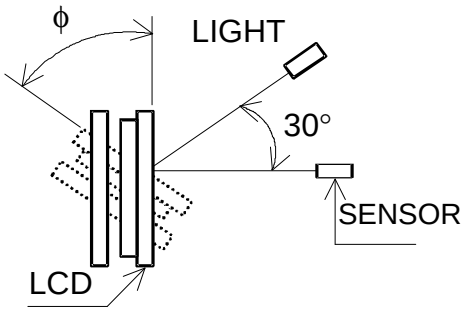
VIEWING DIRECTION

NOTE 3.DEFINITION OF CONTRAST"K"



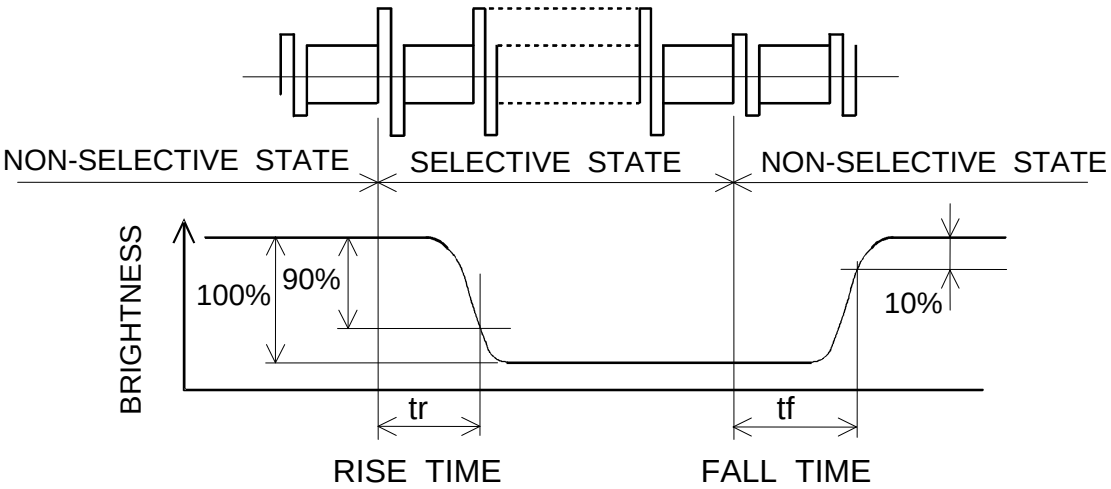
NOTE 2. DEFINITION OF VIEWING ANGLE $\phi1$ AND $\phi2$





CONTRAST RATIO K VS VIEWING ANGLE ϕ

NOTE 4. DEFINITION OF OPTICAL RESPONSE



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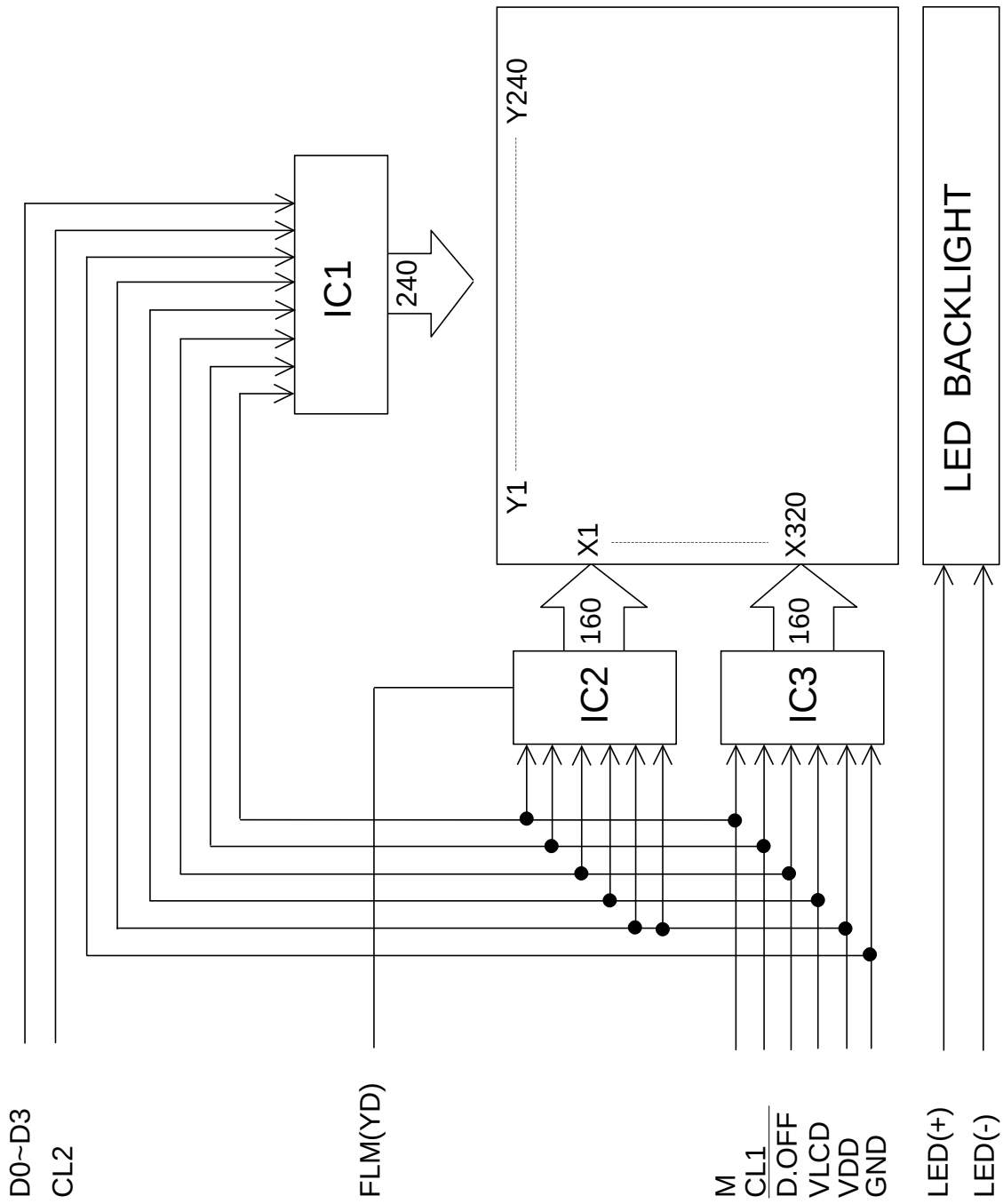
7. BLOCK DIAGRAM

7.1



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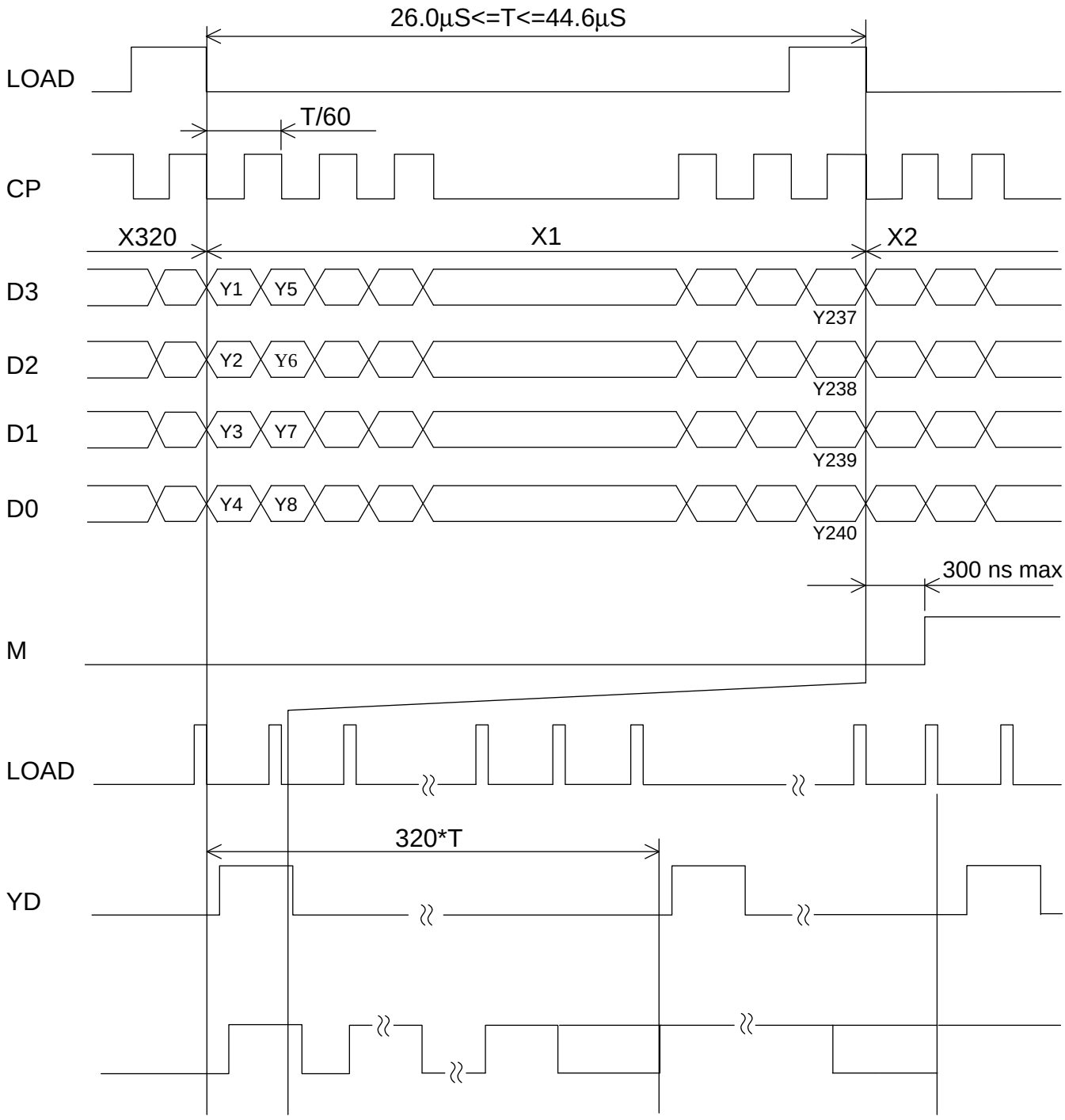
8. INTERFACE TIMING CHART

8.1 TIMING CHART

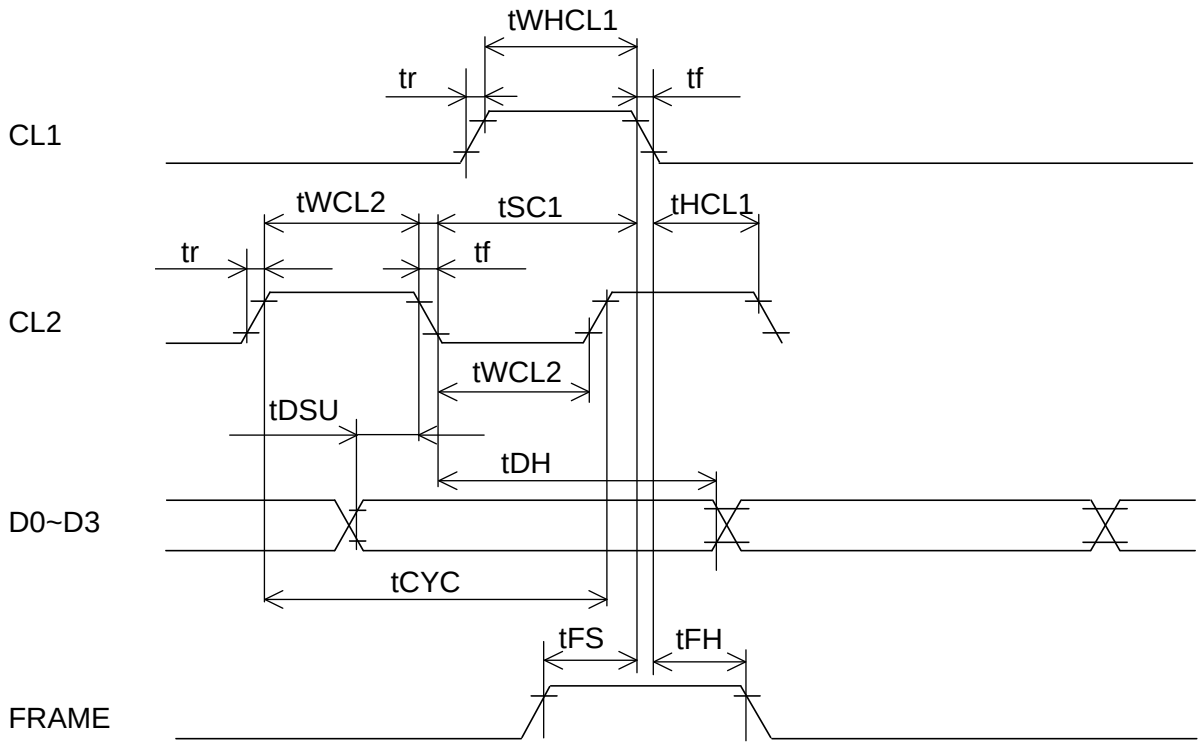


NOTE 1. DO NOT INPUT OVER 320 PULSES TO LOAD.

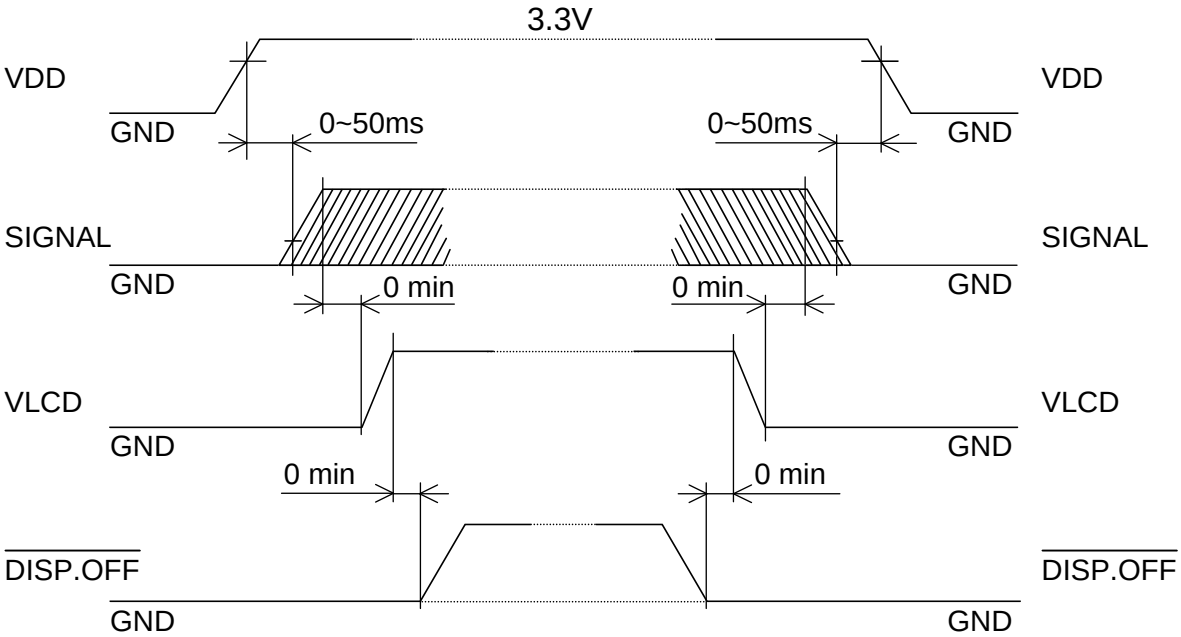
8.2 TIMING CHARACTERISTICS

ITEM	SYMBOL		MIN.	TYP.	MAX.	UMIT
CL1 PULSE WIDTH "H"	tWHCL1		30	-	-	ns
CLOCK FREQUENCY	fcp	VDD=3.15~5.5V	-	-	12.0	MHz
CL2 PULSE WIDTH	tWCL2		30	-	-	ns
CLOCK SET UP TIME	tSCL1		100	-	-	ns
CLOCK HOLD TIME	tHCL1		100	-	-	ns
CLOCK RISE FALL TIME	tr,tf		-	-	50 NOTE(1)	ns
DATA SET UP TIME	tDSU		20	-	-	ns
DATA HOLD TIME	tDH		25	-	-	ns
"FRAME" SET UP TIME	tFS		100	-	-	ns
"FRAME" HOLD TIME	tFH		30	-	-	ns

NOTE 1: (1) $tr,tf < \frac{1/fcp-2tWCL2}{2}$ (2) tr,tf<=50ns

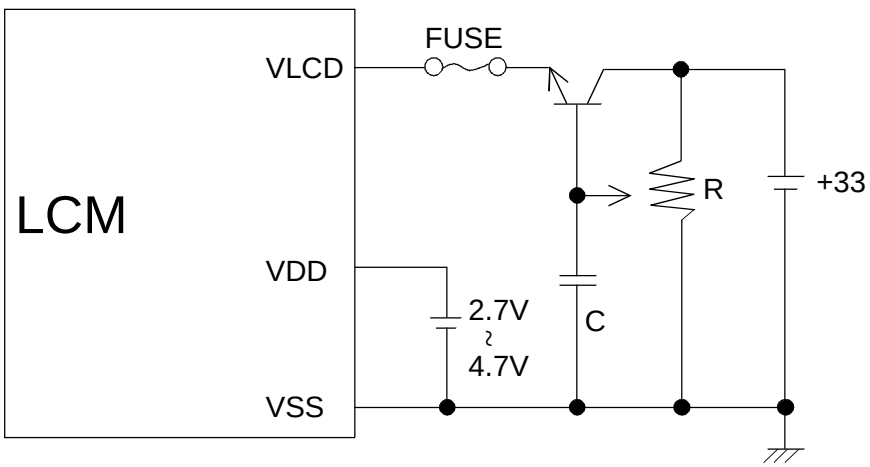


8.3 TIMING OF POWER SUPPLY AND INTERFACE SIGNAL



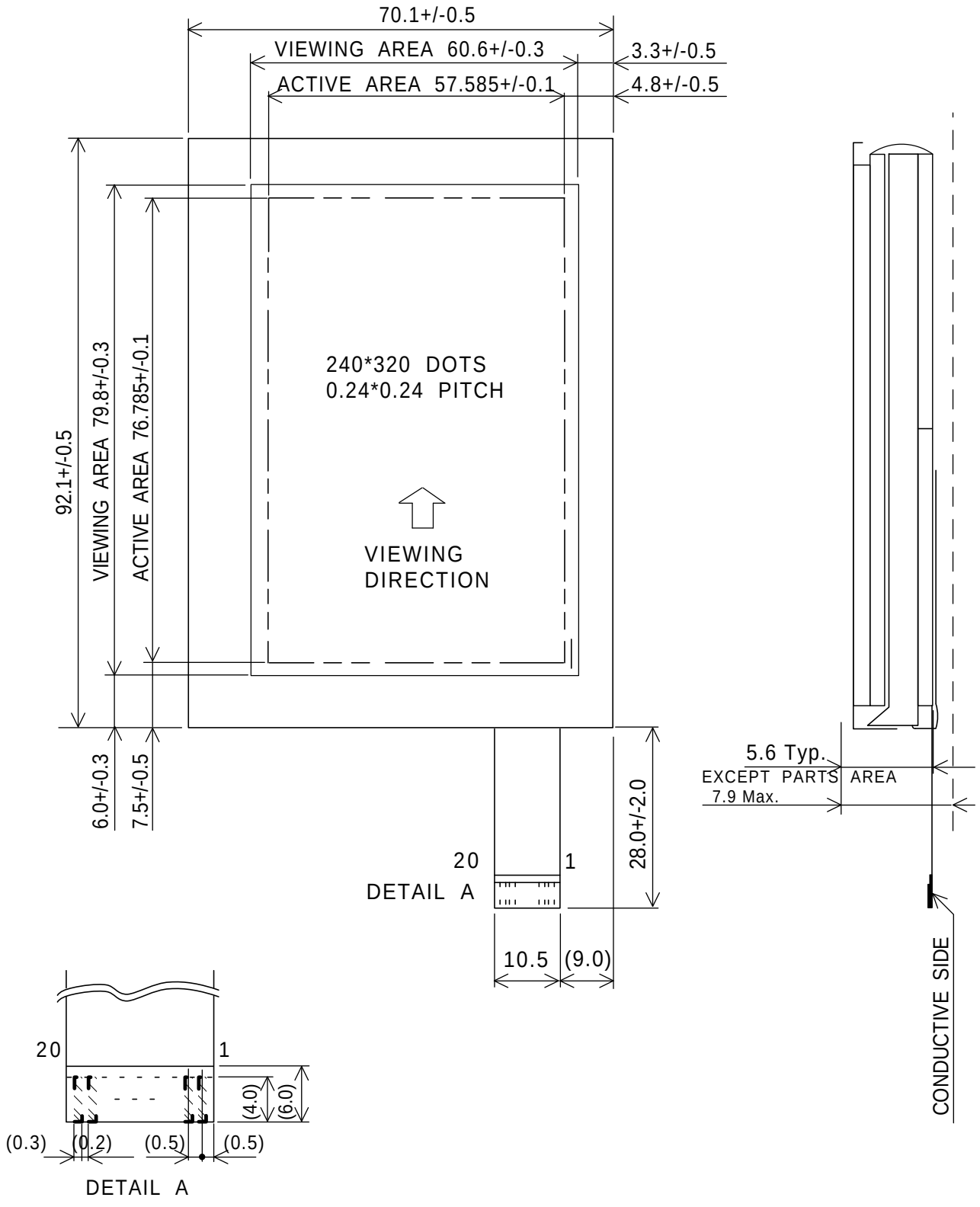
THE MISSING PIXELS MAY OCCUR WHEN THE LCM IS DRIVEN EXCEPT ABOVE POWER INTERFACE TIMING SEQUENCE.

8.4 POWER SUPPLY FOR LCM



9. DIMENSIONAL OUTLINE

9.1 DIMENSIONAL OUTLINE



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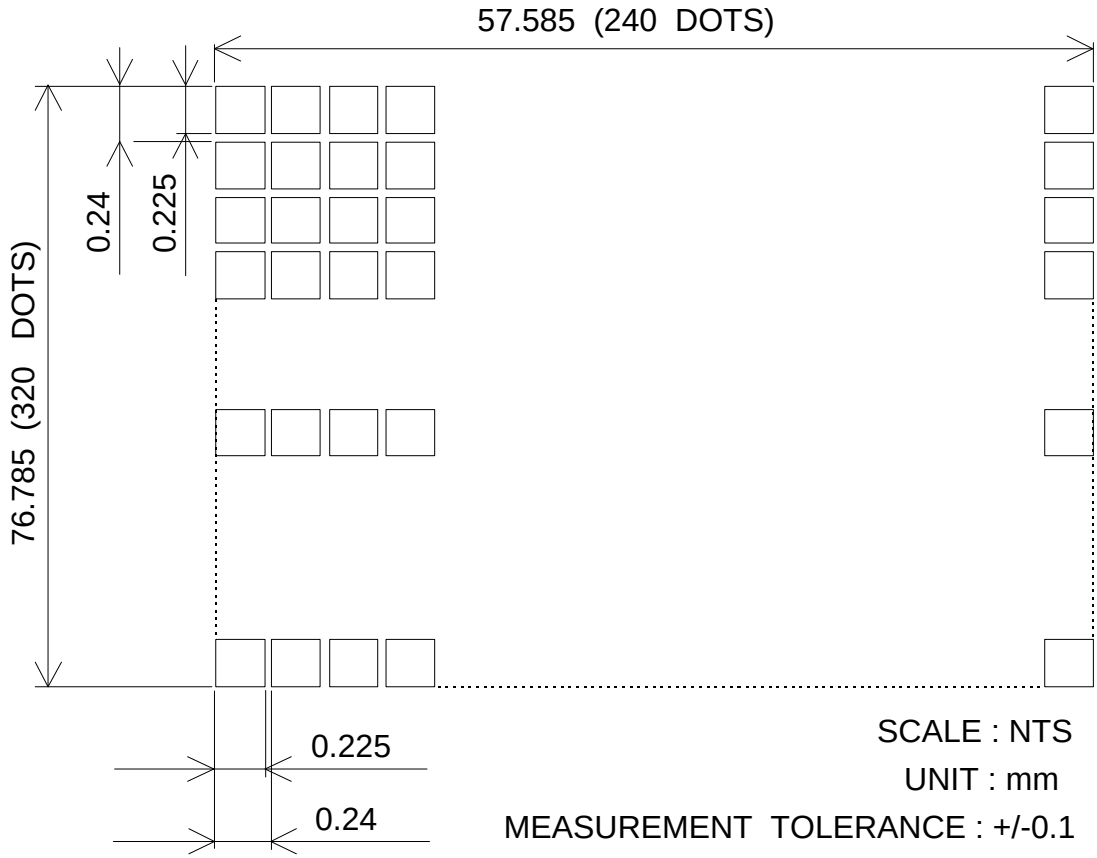
9.2 DISPLAY PATTERN



9.3 INTERNAL PIN CONNECTION

CN1 : FPC

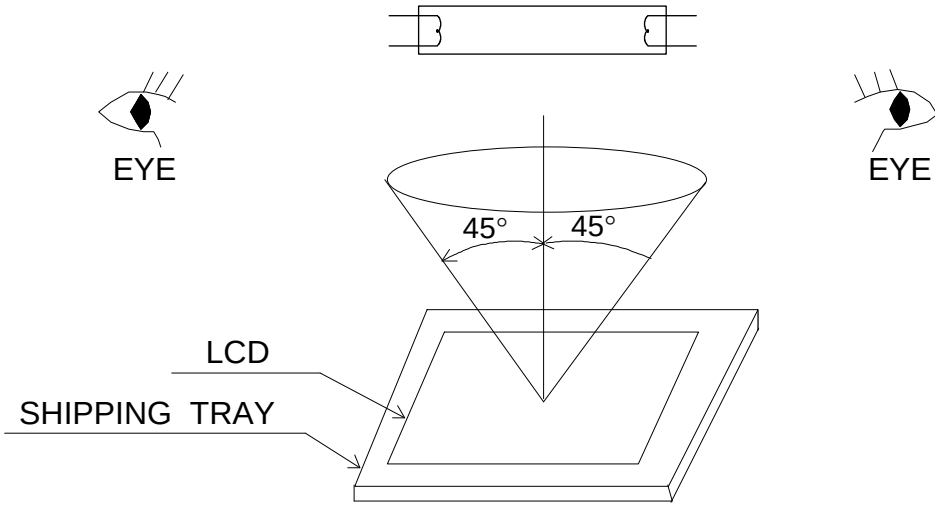
CN1

PIN No.	SIGNAL	LEVEL	FUNCTION
1	VDD	H	POWER SUPPLY FOR LOGIC
2	VSS	-	GROUND
3	VLCD	H	POWER SUPPLY FOR LCD
4	FLM	H	FIRST LINE MARKER
5	$\overline{\text{DISP.OFF}}$	H/L	H:ON / L:OFF
6	M	H/L	SWITCH SIGNAL TO CONVERT LIQUID CRYSTAL DRIVE WAVEFORM INTO AC
7	CL1	H→L	DATA LATCH
8	CL2	H→L	SHIFT CLOCK
9	VSS	-	GROUND
10	D0	H/L	DISPLAY DATA
11	D1	H/L	DISPLAY DATA
12	D2	H/L	DISPLAY DATA
13	D3	H/L	DISPLAY DATA
14	VSS	-	GROUND
15	LED(+)	-	POWER SUPPLY FOR LED
16	LED(-)	-	POWER SUPPLY FOR LED
17	NC	-	NC
18	NC	-	NC
19	NC	-	NC
20	NC	-	NC

10. QUALITY STANDARD

10.1 APPEARANCE INSPECTION CONDITIONS (IN THE EFFECTIVE VIEWING AREA)

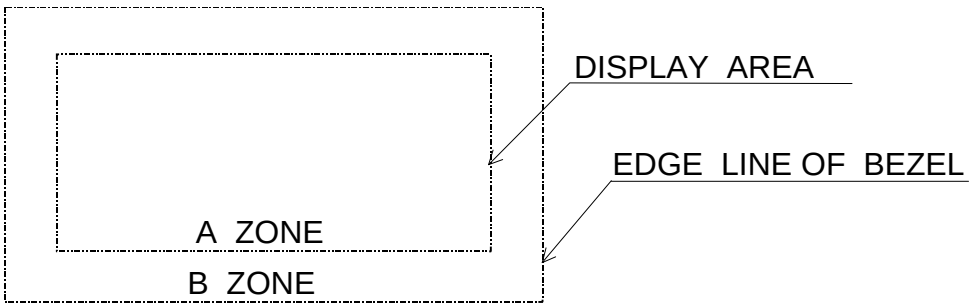
VISUAL INSPECTION UNDER SINGLE 20W FLUORECENT LAMP WITH EYES TO LCD DISTANCE 25cm AND LAMP TO LCD DISTANCE 25 TO 30cm. VIEWING ANGLE SHOULD BE SMALLER THAN 45°.
THE LINE OF SIGHT FOR INSPECTION SHALL BE INSIDE THE HALF SECTION OF A CONE WHICH CONSISTED OF LINE SEGMENT 45° TO THE AXIS WITH VERTEX AT CENTER OF LCD. THE CONE AXIS PERPENDICULAR TO THE LCD AND PASSING THROUGH THE FLUORESCENT LAMP.



10.2 DEFINITION OF EACH ZONE

A ZONE : WITHIN THE DISPLAY AREA SPECIFIED AT PAGE 9-1/2 OF THIS DOCUMENT.

B ZONE : AREA BETWEEN THE EDGE LINE OF BEZEL AND THE DISPLAY AREA LINE SPECIFIED AT PAGE 9-1/2 OF THIS DOCUMENT.



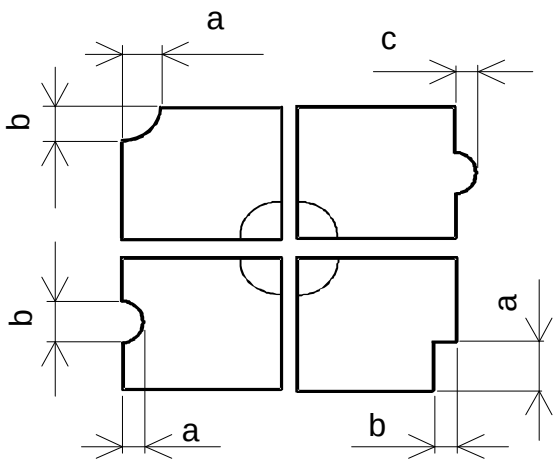
10.3 APPEARENCE SPECIFICATION

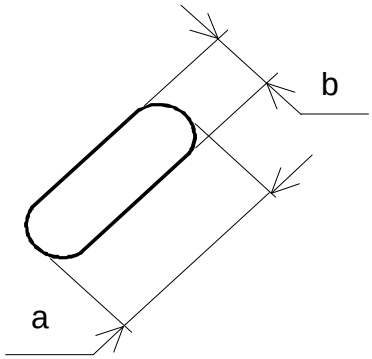
*) IF THE PROBLEM OCCURES,ABOUT THIS ITEM THE RESPONSIBLE PERSON OF BOTH PARTY (CUSTOMER AND HITACHI) WILL DISCUSS MORE DETAIL.

No.	ITEM	CRITERIA				A	B
L C D	SCRATCHES	DISTINGUISHED ONE IS NOT ACCEPTABLE (TO BE JUDGED BY HITACHI LIMITED SAMPLE)				*	-
	DENT	SAME AS ABOVE				*	-
	WRINKLES IN POLARIZER	SAME AS ABOVE				*	-
	BUBBLES	AVERAGE DIAMETER D(mm)		MAXIMUM NUMBER ACCEPTABLE		O	-
		D<=0.2		IGNORE			
		0.2<D<=0.3		12			
		0.3<D<=0.5		3			
	NOTE (1)	0.5<D		NONE			
	STAINS, FOREIGN MATERIALS DARK SPOT	FILAMENTOUS				O	*
		LENGTH L(mm)	WIDTH W(mm)	MAXIMUM NUMBER ACCEPTABLE			
		L<=2.0	W<=0.03	IGNORE			
		L<=3.0	0.03<W<=0.05	6			
		-	0.05<W	NONE			
		ROUND				O	*
		AVERAGE DIA-METER D(mm)	MAXIMUM NUM-BER ACCEPTABLE	MINIMUM SPACE			
		D<0.2	IGNORE	-			
		0.2 <=D<0.33	8	10 mm			
		0.33 <=D	NONE	-			
		THE WHOLE NUMBER	FILAMENTOUS + ROUND = 10				
	NOTE (1) (2)	THOSE WIPED OUT EASILY ARE ACCEPTABLE				O	O
	COLOR TONE	TO BE JUDGED BY HITACHI LIMITED SAMPLE				O	-
	COLOR UNIFORMITY	SAME AS ABOVE				O	-
	PINHOLE	AVERAGE DIAMETER D(mm)		MAXIMUM NUMBER ACCEPTABLE		O	-
		D<=0.15		IGNORE			
		0.15<D<=0.3		10			
	NOTE (1)	C<=0.01		IGNORE			
	CONTRAST IRREGULARITY (SPOT)	AVERAGE DIAMETER D (mm)	CONTRAST	MAXIMUM NUMBER ACCEPTABLE	MINIMUM SPACE		
		D<=0.25	TO BE JUDGED BY HITACHI	IGNORE	-		
		0.25<D<=0.35		10	20mm		
		0.35<D<=0.5		4	20mm		
	NOTE (1)	0.5 <D		NONE	-		

No.	ITEM	CRITERIA				A	B
L C D	CONTRAST IRREGULARITY (LINE) (A PAIR OF SCRATCH) NOTE (2)	WIDTH W(mm)	LENGTH L(mm)	MAXIMUM ACCEPTABLE NUMBER	MINIMUM SPACE	O	-
		W<=0.25	L<=1.2	2	20mm		
		W<=0.2	L<=1.5	3	20mm		
		W<=0.15	L<=2.0	3	20mm		
		W<=0.1	L<=3.0	4	20mm		
		THE WHOLE NUMBER <=6					
	RUBBING SCRATCH	TO BE JUDGED BY HITACHI LIMITED STANDARD				O	-

NOTE (1)





$\frac{a+b}{2}$ =D…AVERAGE DIAMETER
C…SALIENT

(2) DEFINITION OF LENGTH L AND WIDTH W

11. PRECAUTION IN DESIGN

11.1 LC DRIVING VOLTAGE (VLCD) AND VIEWING ANGLE RANGE.
SETTING VLCD OUT OF THE RECOMMENDED CONDITION WILL BE A CAUSE FOR A CHANGE OF VIEWING ANGLE RANGE.

11.2 CAUTION AGAINST STATIC CHARGE
AS THIS MODULE IS PROVIDED WITH C-MOS LSI, THE CARE TO TAKE SUCH A PRECAUTION AS TO GROUNDING THE OPERATOR'S BODY IS REQUIRED WHEN HANDLING IT.

11.3 POWER ON SEQUENCE
INPUT SIGNALS SHOULD NOT BE APPLIED TO LCD MODULE BEFORE POWER SUPPLY VOTAGE IS APPLIED AND REACHES TO SPECIFIED VOLTAGE (2.7~5.5). IF ABOVE SEQUENCE IS NOT KEPT, C-MOS LSIS OF LCD MODULES MAY BE DAMAGED DUE TO LATCH UP PROBLEM.

11.4 PACKAGING

(1) NO. LEAVING PRODUCTS IS PREFERABLE IN THE PLACE OF HIGH HUMIDITY FOR A LONG PERIOD OF TIME. FOR THEIR STORAGE IN THE PLACE WHERE TEMPERATURE IS 35° OR HIGHER, SPECIAL CARE TO PREVENT THEM FROM HIGH HUMIDITY IS REQUIRED. A COMBINATION OF HIGH TEMPERATURE AND HIGH HUMIDITY MAY CAUSE THEM POLARIZATION DEGRADATION AS WELL AS BUBBLE GENERATION AND POLARIZER PEEL-OFF. PLEASE KEEP THE TEMPERATURE AND HUMIDITY WITHIN THE SPECIFIED RANGE FOR USE AND STORING.

(2) SINCE UPPER POLARIZERS AND BEZEL TEND TO BE EASILY DAMAGED, THEY SHOULD BE HANDLED WITH FULL CARE SO AS NOT TO GET THEM TOUCHED, PUSHED OR RUBBED BY A PIECE OF GLASS. TWEEZERS AND ANYTHING ELSE WHICH ARE HARDER THAN A PENCIL LEAD 3H.

(3) AS THE ADHESIVES USED FOR ADHERING UPPER/LOWER POLARIZERS AND BEZEL ARE MADE OF ORGANIC SUBSTANCES WHICH WILL BE DETERIORATED BY A CHEMICAL REACTION WITH SUCH CHEMICALS AS ACETONE, TULUENE, ETHANOLE AND ISOPROPYLALCOHOL. THE FOLLOWING SOLVENTS ARE RECOMMENDED FOR USE:

NORMAL HEXANE

PLEASE CONTACT US WHEN IT IS NECESSARY FOR YOU TO USE CHAMICALS OTHER THAN THE ABOVE.

(4) LIGHTLY WIPE TO CLEAR THE DIRTY SURFACE WITH ABSORBENT COTTON WASTE OR OTHER SOFT MATERIAL LIKE CHAMOIS , SOAKED IN THE CHAMICALS RECOMMENDED WITHOUT SCRUBBING IT HARDLY. TO PREVENT THE DISPLAY SURFACE FROM DAMAGE AND KEEP THE APPEARANCE IN GOOD STATE, IT IS SUFFICIENT, IN GENERAL, TO WIPE IT WITH ABSORBENT COTTON.

(5) IMMEDIATELY WIPE OFF SALIVA OR WATER DROP ATTACHED ON THE DISPLAY AREA BECAUSE ITS LONG PERIOD ADHERANCE MAY CAUSE DEFORMATION OR FADED COLOR ON THE SPOT.

(6) FOGY DEW DEPOSITED ON THE SURFACE AND CONTACY TERMINALS DUE TO COLDENESS WILL BE CAUSE FOR POLARIZER DAMAGE, STAIN AND DIRT ON PRODUCT. WHEN NECESSARY TO TAKE OUT THE PRODUCTS FORM SOME PLACE AT LOW TEMPERATURE FOR TEST, ETC. IT IS REQUIRED FOR THEM TO BE WARMED UP IN A CONTAINER ONCE AT THE TEMPERATURE HIGHER THAN THAT OF ROOM.

(7) TOUCHING THE DISPLAY AREA AND CONTANT TERMINALS WITH BARE HANDS AND CONTAMINATING THEM ARE PROHIBITED, BECAUSE THE STAIN ON THE DISPLAY AREA AND POOR INSULATION BETWEEN TERMINALS ARE OFTEN CAUSED BY BEING TOUCHED BY BARE HANDS. (THERE ARE SOME COSMETICS DETRIMENTAL TO POLARIZERS.)

(8) IN GENERAL THE QUALITY OF GLASS IS FRAGILE SO THAT IT TENDS TO BE CRACKED OR CHIPPED IN HANDLING, SPECIALLY ON ITS PERPHERY. BECAUSE BE CAREFUL NOT TO GIVE IT SHARP SHOCK CAUSED BY DROPPING DOWN, ETC.

11.5 CAUTION FOR HANDING

THIS LCM (240*320) HAS NO METAL FRAME AND FRONT BEZEL TO PROTECT TCP(TAPE CARRIER PACKAGE). TCP DRIVER IS VERY WEAK AGAINST ANY MECHANICAL STRESS. IF SUCH STRESS APPLIED, OPEN CIRCUIT OF TCP DRIVER MAY OCCUR. AND IT CAN'T BE REPAIRED. PLEASE NOTICE THAT THIS LCM SHOULD BE HANDLED WITH ENOUGH CARE AS FOLLOWS.

(1) WHEN HANDLING, HOLD LCD GLASS TO AVOID DAMAGEING TCP. DO NOT HOLD PCB(PRINTED CIRCUIT BOARD).

(2) AFTER INCOMING INSPECTION OF THIS LCM, WHEN TAKING OFF INTERFACE CABLE, BE CAREFUL NOT TO MAKE ANY MECHANICAL STRESS TO TCP, SUCH AS BENDING AND TWISTING.

11.6 CAUTION FOR OPERATION

(1) IT IS AN INDISPENSABLE CONDITION TO DRIVE LCD'S WITHIN THE SPECIFIED VOLTAGE LIMIT SINCE THE HIGHER VOLTAGE THAN THE LIMIT CAUSES THE SHORTER LCD LIFE . AN ELECTROCHEMICAL REACTION DUE TO DIRECT CURRENT CAUSES LCD'S UNDESIRABLE DETERIORATION, SO THAT THE USE OF DIRECT CURRENT DRIVER SHOULD BE AVOIDED.

(2) RESPONSE TIME WILL BE EXTREMELY DELAYED AT LOWER TEMPERATURE THAN THE OPERATING TEMPERATURE RANGE AND ON THE OTHER HAND AT HIGHER TEMPERATURE LCD'S SHOW DARK BULE COLOR IN THEM . HOWEVER THOSE PHENOMENA DO NOT MEAN MALFUNCTION OR OUT OF ORDER WITH LCD'S WHICH WILL COME BACK IN THE SPECIFIED OPERATING TEMPERATURE RANGE.

(3) IF THE DISPLAY AREA IS PUSHED HARD DURING OPERATION , SOME FONT WILL BE ABNORMALLY DISPLAYED BUT IT RESUMES NORMAL CONDITION AFTER TURNING OFF ONCE.

(4) A SLIGHT DEW DEPOSITING ON TERMINALS IS A CAUSE FOR ELECTROCHEMICAL REACTION RESULTING IN TERMINAL OPEN CIRCUIT. USAGE UNDER THE RELATIVE CONDITION OF 40°C 50%RH OR LESS IS REQUIRED.

11.7 STORAGE

IN CASE OF STORING FOR A LONG PERIOD OF TIME (FOR INSTANCE, FOR YEARS) FOR THE PURPOSE OF REPLACEMENT USE , THE FOLLOWING WAYS ARE RECOMMENDED.

(1) STORAGE IN A PLOYETHYLENE BAG WITH THE OPENING SEALED SO AS NOT TO ENTER FRESH AIR OUTSIDE IN IT , AND WITH NO DESICCANT.

(2) PLACING IN A DARK PLACE WHERE NEITHER EXPOSURE TO DIRECT SUNLIGHT NOR LIGHT IS, KEEPING TEMPERATURE IN THE RANGE FROM 0 DEGREE C TO 35 DEGREE C

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(3) STORING WITH NO TOUCH ON POLARIZER SURFACE BY ANYTHING ELSE. (IT IS RECOMMENDED TO STORE THEM AS THEY HAVE BEEN CONTAINED IN THE INNER CONTAINER AT THE TIME OF DELIVERY ROM US.)

11.8 SAFETY

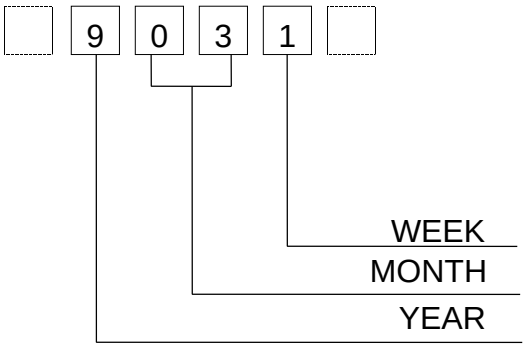
(1) IT IS RECOMMENDABLE TO CRASH DAMAGED OR UNNECESSARY LCDS INTO PIECES AND WASH OFF LIQUID CRYSTAL BY EITHER OF SOLVENTS SUCH AS ACETONE AND ETHANOL, WHICH SHOUD BE BURNED UP LATER.

(2) WHEN ANY LIQUID LEAKED OUT OF A DAMAGED GLASS CELL COMES IN CONTACT WITH YOUR HANDS, PLEASE WASH IT OFF WELL WITH SOAP AND WATER.

12. DESIGNATION OF LOT MARK

LOT MARK

LOT MARK IS CONSISTED OF 4 DIGHT NUMBER.



YEAR	FIGURE IN LOT MARK
1998	8
1999	9
2000	0
2001	1
2002	2

NOTE 1. SOME PRODUCTS HAVE ALPHABET AT THE END OR THE FIRST.

MONTH	FIGURE IN LOT MARK	MONTH	FIGURE IN LOT MARK
JAN.	01	JULY.	07
FEB.	02	AUG.	08
MAR.	03	SEPT.	09
APR.	04	OCT.	10
MAY.	05	NOV.	11
JUNE.	06	DEC.	12

WEEK (DAY IN CALENDAR	FIGURE IN LOT MARK
1~7	1
8~14	2
9~21	3
22~28	4
29~31	5

LOCATION OF LOT MARK : ON THE BACK SIDE OF LCM

9 0 3 1 T

T : MADE IN TAIWAN.

13. PRECAUTIPON FOR USE

(1) A LIMIT SAMPLE SHOULD BE PROVIDED BY THE BOTH PARTIES ON AN OCCASION WHEN THE BOTH PARTIES AGREED ITS NECESSITY. JUDGEMENT BY A LIMIT SAMPLE SHALL TAKE EFFECT AFTER THE LIMIT SAMPLE HAS BEEN ESTABLISHED AND CONFIRMED BY THE BOTH PARTIES.

(2) ON THE FOLLOWING OCCASIONS, THE HANDLING OF THE PROBLEM SHOULD BE DECIDED THROUGH DISCUSSION AND AGREEMENT BETWEEN RESPONSIBLE PERSONS OF THE BOTH PARTIES.

(1) WHEN A QUESTION IS ARISEN IN THE SPECIFICATIONS.

(2) WHEN A NEW PROBLEM IS ARISEN WHICH IS NOT SPECIFIED IN THIS SPECIFICATIONS.

(3) WHEN AN INSPECTION SPECIFICATIONS CHANGE OR OPERATING CONDITION CHANGE IN CUSTOMER IS REPORTED TO HITACHI, AND SOME PROBLEM IS ARISEN IN THIS SPECIFICATION DUE TO THE CHANGE.

(4) WHEN A NEW PROBLEM IS ARISEN AT THE CUSTOMER‘S OPERATING SET FOR SAMPLE EVALUATION IN THE CUSTOMER SITE.

THE PRECAUTION THAT SHOULD BE OBSERVED WHEN HANDLING LCM HAVE BEEN EXPLAINED ABOVE. IF ANY POINTS ARE UNCLEAR OR IF YOU HAVE ANY REQUESTS , PLEASE CONTACT HITACHI.