

NAN YA PLASTICS CORPORATION

SPECIFICATION OF
LCD MODULE
PRODUCT NO.: LMC9AH193CDS

SPEC. NO.: LM193-0F- \triangle

CUSTOMER
APPROVED BY
DATE:

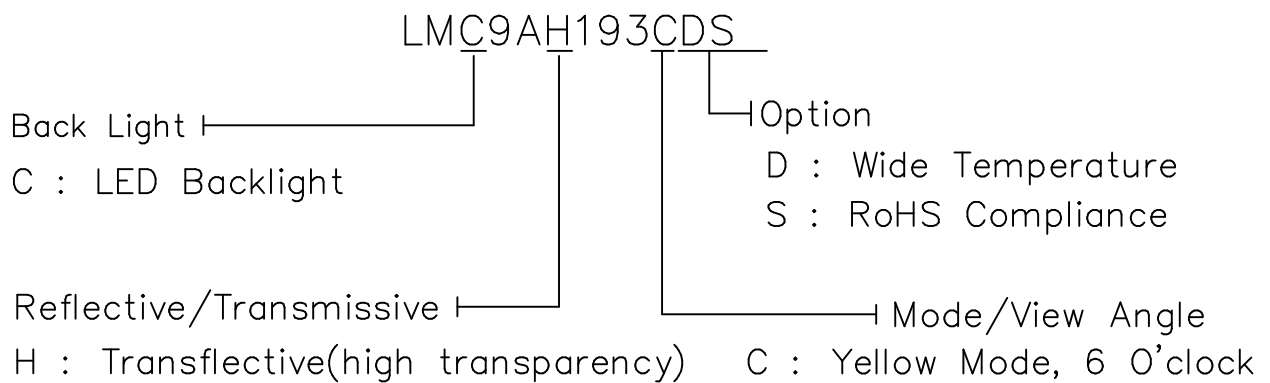
LCD DEPARTMENT
ELECTRONIC MATERIALS DIVISION
NAN YA PLASTICS CORPORATION
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EDITED ON : July.25. 2006

Q.C. DEPT.	DESIGN MANAGER	DESIGN CHECK	DESIGNER
			J.P Weng

1. MECHANICAL DATA

NO	ITEM	CONTENTS	UNIT
1	Product No.	LMC9AH193CDS	-
2	Module Size	92.0(W) X106.0(H) X MAX15.0(D)	mm
3	Dot Size	0.5 (W) x 0.5 (H)	mm
4	Dot Pitch	0.55 (W) x 0.55 (H)	mm
5	Number of Dots	128 (W) x 128 (H)	Dot
6	Duty	1/128	-
7	LCD Display Mode	STN : Yellow Mode	-
8	Rear Polarizer	Transflective(high transparency)	-
9	Viewing Direction	6	O'clock
10	Backlight	LED	-
11	Controller IC	T6963CFG-0101 or Compatible	-
12	Weight	120(Approx.)	g
13	Soldering	Lead Free	-



RoHS Compliance.

Nan Ya guarantees that this project doesn't include any materials (6 materials) or includes less than specified quantities which are regulated by RoHS Compliance.

2. ABSOLUTE MAXIMUM RATINGS

(1) ELECTRICAL ABSOLUTE RATINGS

V_{SS}=0V

ITEM	SYMBOL	MIN	MAX	UNIT	COMMENT
Power Supply for Logic	VDD-VSS	-0.3	7.0	V	
Input Voltage	V _I	-0.3	VDD+0.3	V	
Static Electricity	-	-	-		Note 1

Note 1 LCM should be grounded during handling LCM.

(2) ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

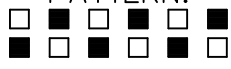
ITEM	WIDE TEMP.			
	OPERATING		STORAGE	
	MIN.	MAX.	MIN.	MAX.
Ambient Temperature	-20	70	-40	80
Humidity (Without Condensation)	Note 2,4		Note 3,4	

Note 2 $T_a \leq 70^\circ\text{C}$: 75%RH max

Note 3 Please refer to item of reliability test

Note 4 Background color will change slightly depending on ambient temperature.
That phenomenon is reversible.

3. ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
Power Supply for Logic	VDD	—	4.5	5	5.5	V	
Input Voltage	VIH	H level	VDD-0.8	—	VDD	V	
	VIO	L level	0	—	0.8	V	
Recommended LC Driving Voltage	VDD-V0	DUTY= 1/128	-20°C	19.5	19.9	20.3	V
			0°C	18.9	19.3	19.7	
			25°C	18.6	19.0	19.4	
			50°C	18.4	18.8	19.2	
			70°C	18.1	18.5	18.9	
Power Supply Current for LCM	IDD	VDD-V0=19.0V	—	40	60	mA	
	IEE	PATTERN: 	—	1.5	2.5		
LCM Surface Luminance	VBL = 5.0V (R20,R21 = 10Ω)	PATTERN: (Dots All On)	—	1.5	—	cd/m ²	
		PATTERN: (Dots All Off)	3.5	4.7	—		

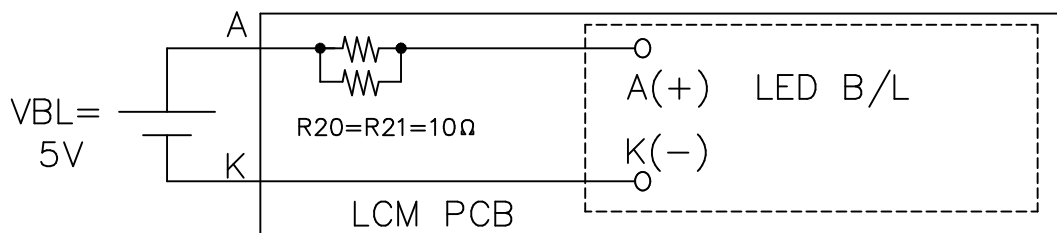
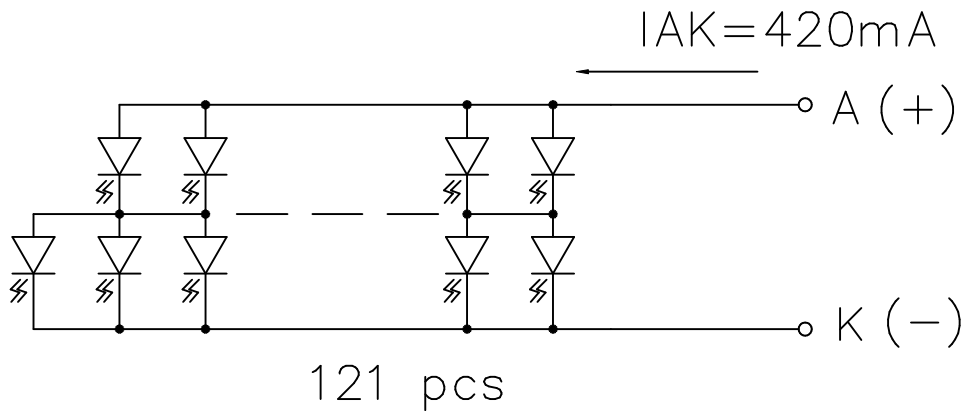
3-2.ELECTRICAL CHARACTERISTICS OF BACKLIGHT

Used LED Rating (Constant Current Driving)

Temp.=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Peak forward current	I_P	-	-	915	mA	-
Maximum reverse voltage	V_R	-	-	8	V	-
Applied forward current	I_{AK}	-	420	-	mA	-
Applied forward voltage	V_{AK}	4.0	4.2	4.6	V	-
LED power consumption	P_F	-	-	4.2	W	-
LED life time	L_L	-	40000	-	hrs	at $I_{AK} = 420 \text{ mA}$ (*1)

(*1) LED life time is defined as follows : The final brightness is at 50% of original brightness.



4.OPTICAL CHARACTERISTICS

AT Vop

ITEM		Cr(Contrast Ratio)										θ (Viewing Angle)		ϕ (Viewing Angle)	
		-20℃		0℃		25℃		50℃		70℃		25℃		25℃	
MODE		MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.
H	C	2.0	2.5	2.5	3.5	3.0	4.0	2.0	2.5	1.5	2.0	-	(F) 30 (R) 25	-	(L) 25 (R) 25
Note		NOTE 6										NOTE 5			

NOTE :

H: Transflective(high transparency)

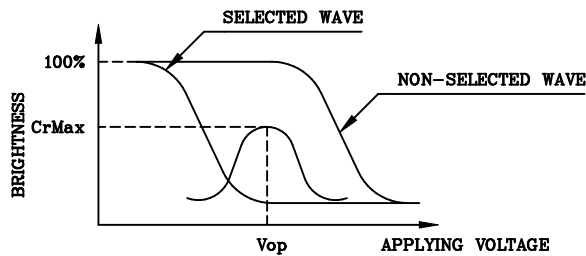
C: Yellow Mode 6 O'clock

AT $\phi=0^\circ$ $\theta=0^\circ$

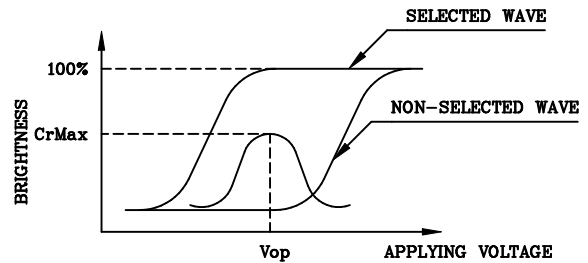
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	NOTE
Response Time (rise)	Tr	-20℃	1300	1600	2400	ms	NOTE 2
		0℃	500	650	1000		
		25℃	160	200	300		
		50℃	80	100	150		
		70℃	50	60	90		
Response Time (fall)	Tf	-20℃	1100	1400	2100	ms	NOTE 2
		0℃	300	350	530		
		25℃	100	120	180		
		50℃	55	70	110		
		70℃	30	40	60		

(NOTE 1)

Definition of Operation Voltage(Vop)



(positive type)



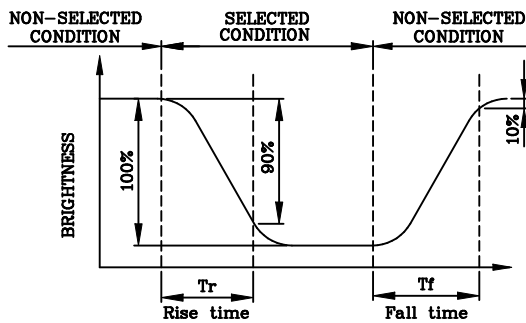
(negative type)

*Conditions

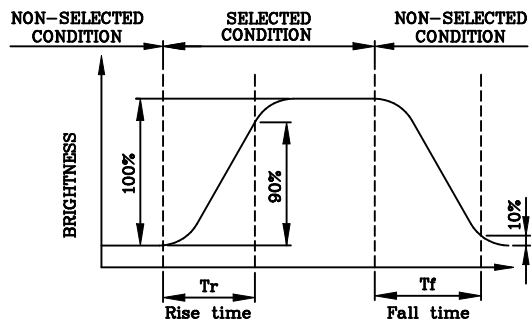
Viewing Angle : 0
Frame Frequency : 70Hz
Applying Waveform : 1/N duty 1/a bias

(NOTE 2)

Definition of Response Time(Tr,Tf)



(positive type)



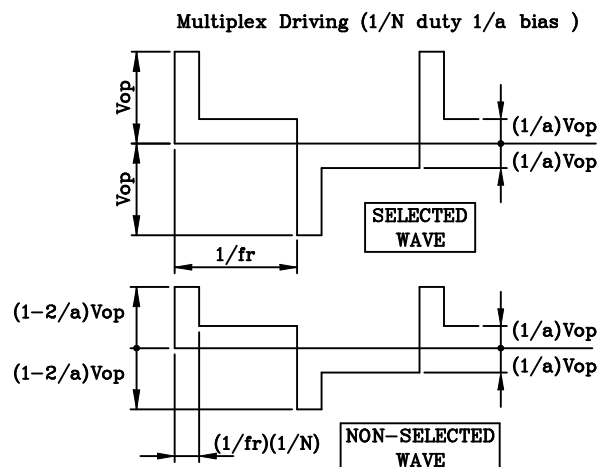
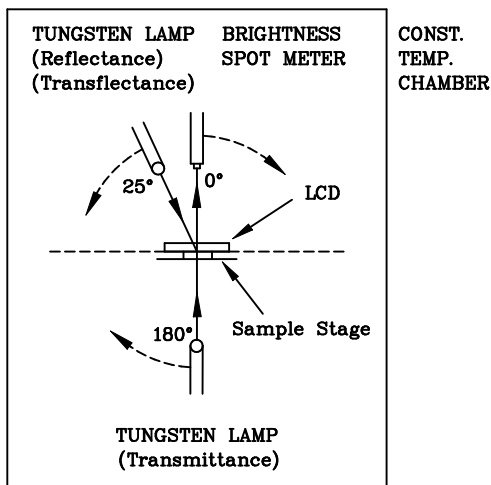
(negative type)

*Conditions

Operating Voltage : Vop
Viewing Angle (θ,φ) : (0,0)
Frame Frequency : 70Hz
Applying Waveform : 1/N duty 1/a bias

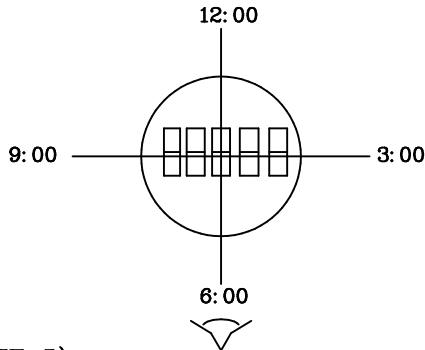
(NOTE 3)

Description of Measuring Equipment and Driving Waveforms



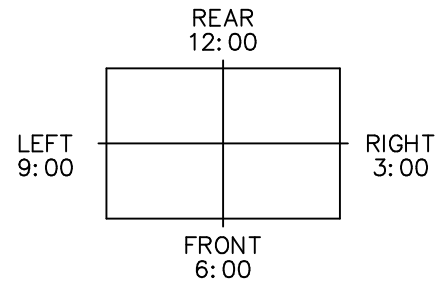
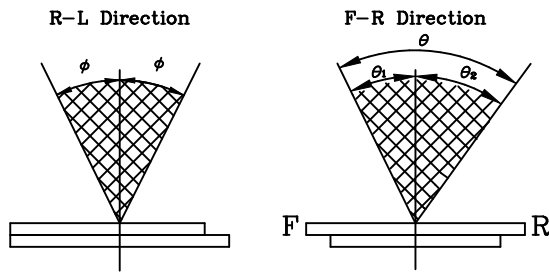
(NOTE 4)

Definition of Viewing Direction



(NOTE 5)

Definition of Viewing Angle



*For This Product
 The Viewing Direction Is 6 O'clock
 So $\theta_1 > \theta_2$

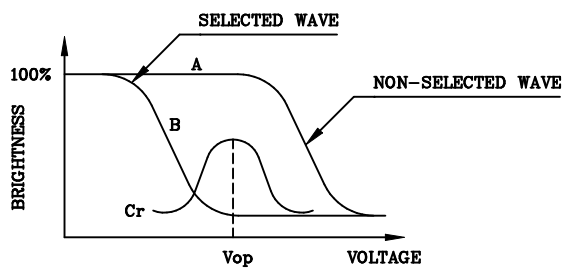
$$\theta = \theta_1 + \theta_2$$

*Conditions

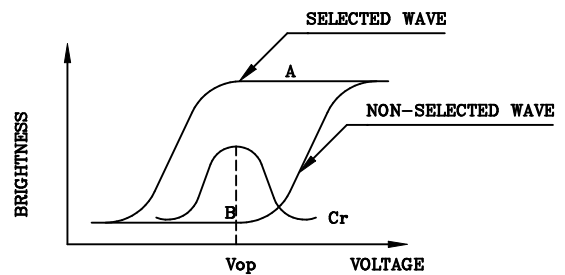
Operating Voltage : V_{op}
 Frame Frequency : 70Hz
 Applying Waveform : 1/N duty 1/a bias
 Contrast Ratio : larger than 2

(NOTE 6)

Definition of Contrast Ratio (Cr)



(positive type)



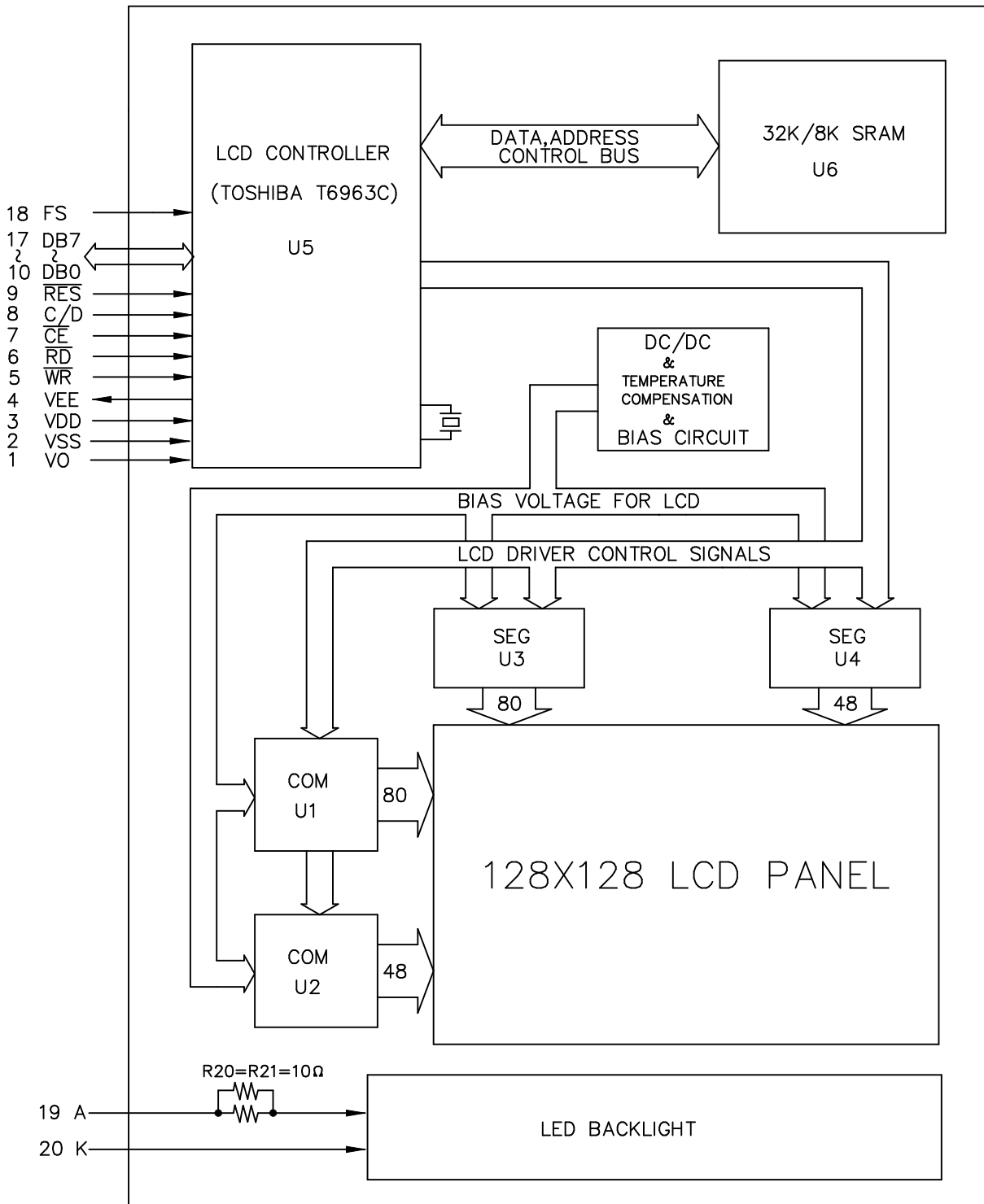
(negative type)

$$\text{Contrast Ratio : } Cr = A/B$$

*Conditions

Viewing Angle : 0
 Frame Frequency : 70Hz
 Applying Waveform : 1/N duty 1/a bias

5. BLOCK DIAGRAM



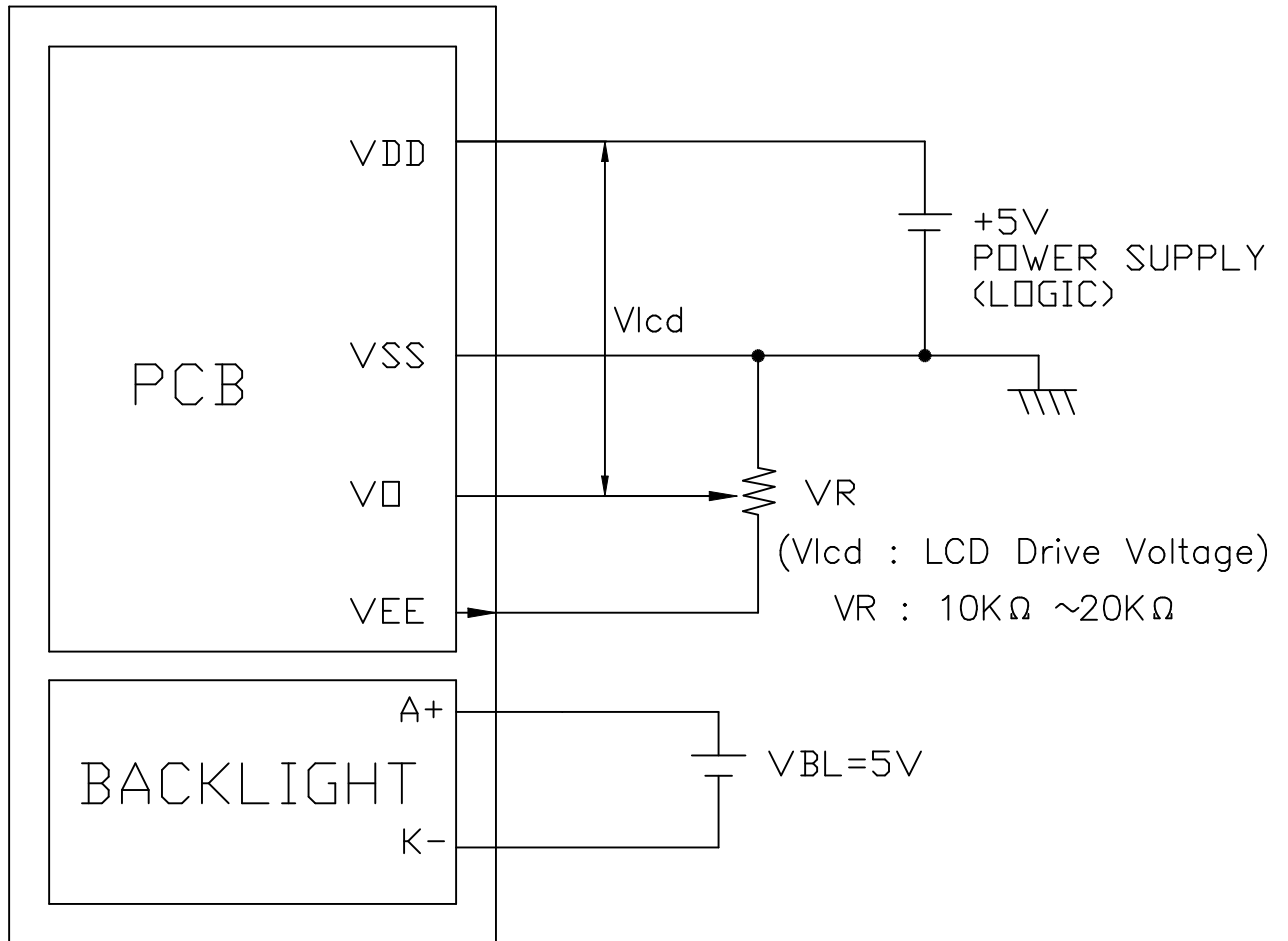
6. INTERNAL PIN CONNECTION

Pin Head(10x2) : Pitch 2.54mm

No	Symbol	Function	
1	Vo	Adjust LCD Contrast	
2	VSS	0V	Ground
3	VDD	+5V	Power Supply for Logic
4	VEE	LCD Contrast Voltage Output	
5	\overline{WR}	L	Data Write
6	\overline{RD}	L	Data Read
7	\overline{CE}	L	Chip Enable
8	C/D	H/L	H=Command ; L=Data
9	\overline{RST}	L	Reset
10	DB0	H/L	Data Bus
11	DB1	H/L	
12	DB2	H/L	
13	DB3	H/L	
14	DB4	H/L	
15	DB5	H/L	
16	DB6	H/L	
17	DB7	H/L	
18	FS	H/L	Font Select
19	A(+)	Power Supply for LED/EL	
20	K(-)	Power Supply for LED/EL	

7. POWER SUPPLY

LCM



8. TIMING CHARACTERISTICS

8-1. INTERFACE TIMING

ITEM	ITEM	CONDITION	MIN.	MAX.	UNIT
C/D SET UP TIME	t_{CDS}	Fig.	100	-	ns
C/D HOLD TIME	t_{CDH}	Fig.	10	-	ns
$\overline{CE}, \overline{RD}, \overline{WR}$ CLOCK WIDTH	t_{CP}, t_{RP}, t_{WP}	Fig.	80	-	ns
DATA SET UP TIME	t_{DS}	Fig.	80	-	ns
DATA HOLD TIME	t_{DH}	Fig.	40	-	ns
ACCESS TIME	t_{ACC}	Fig.	-	150	ns
DATA OUTPUT HOLD TIME	t_{OH}	Fig.	10	50	ns

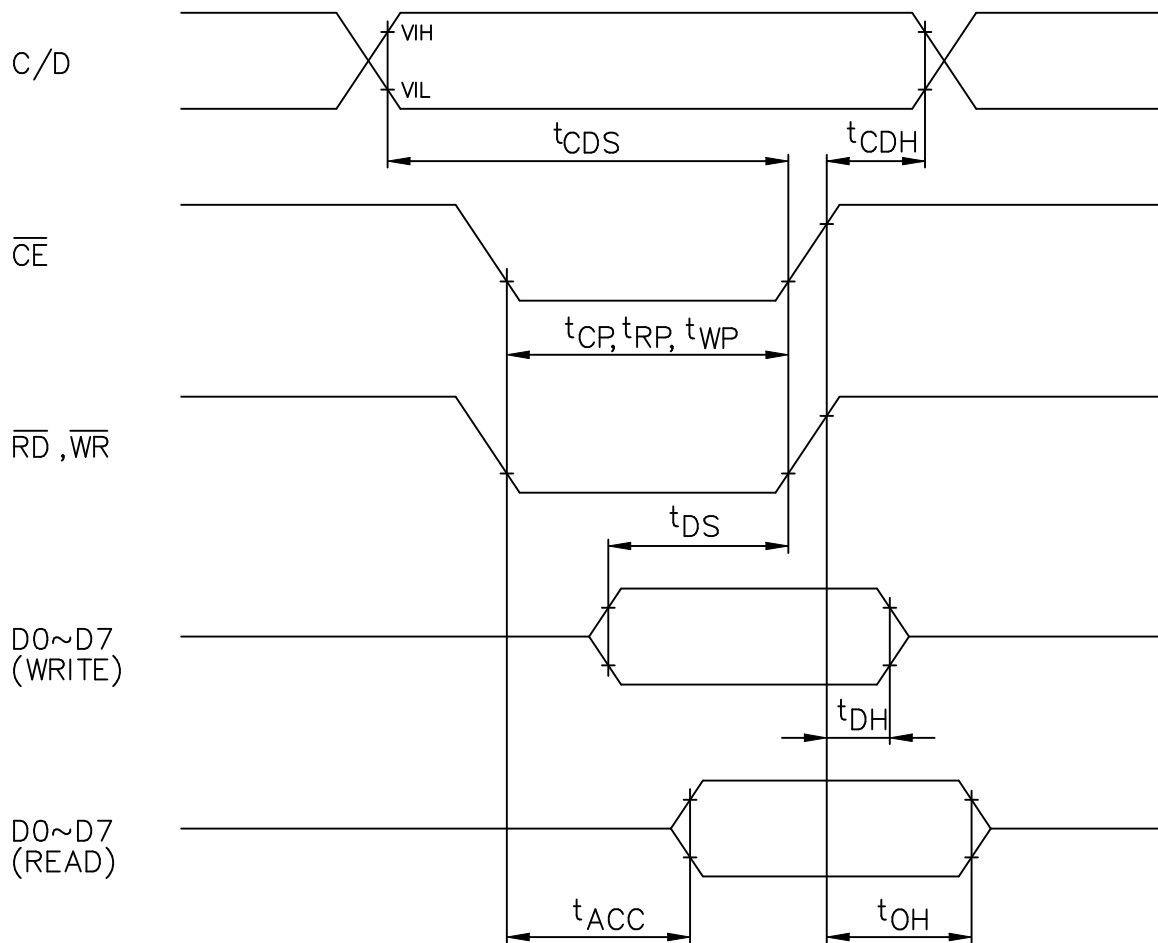
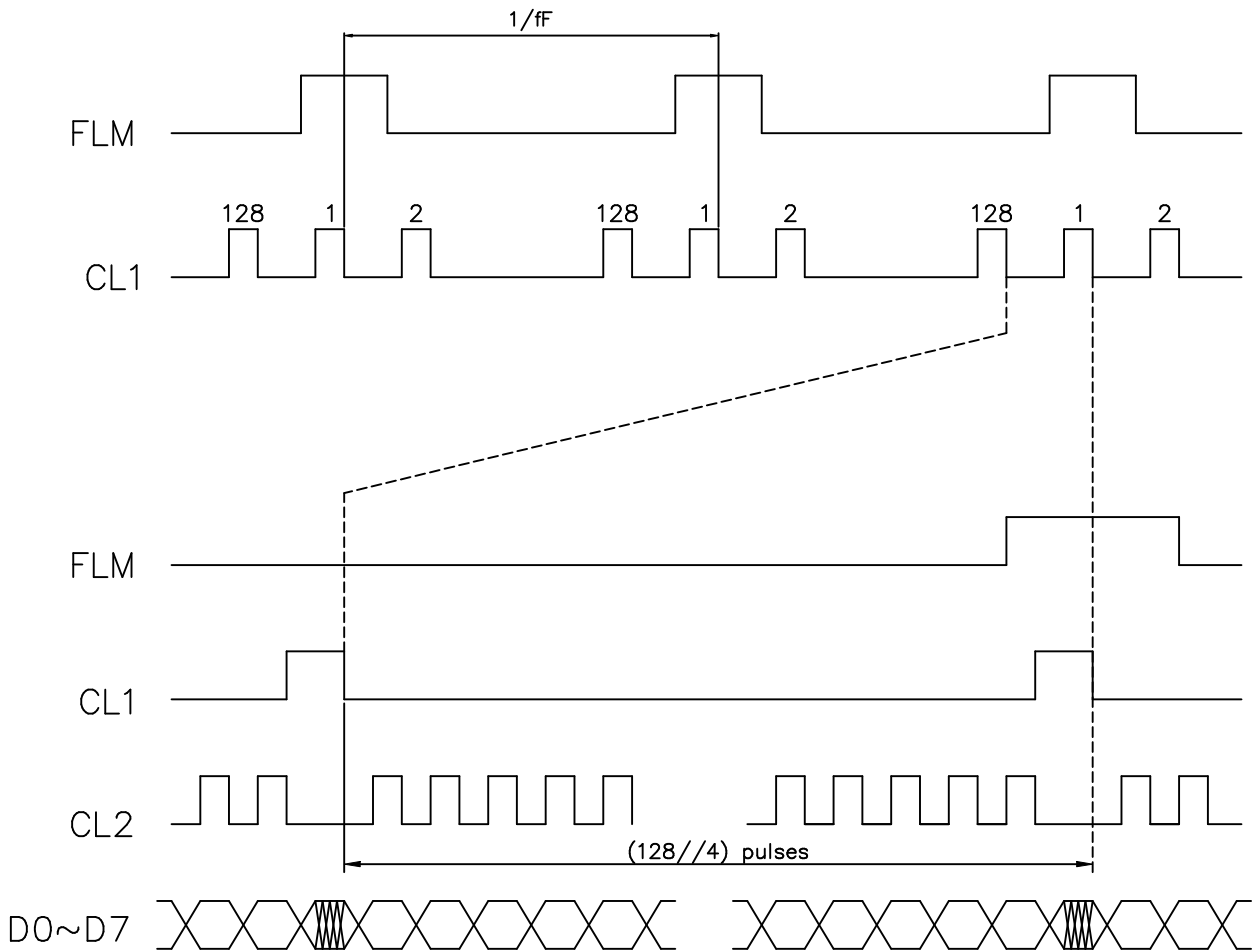
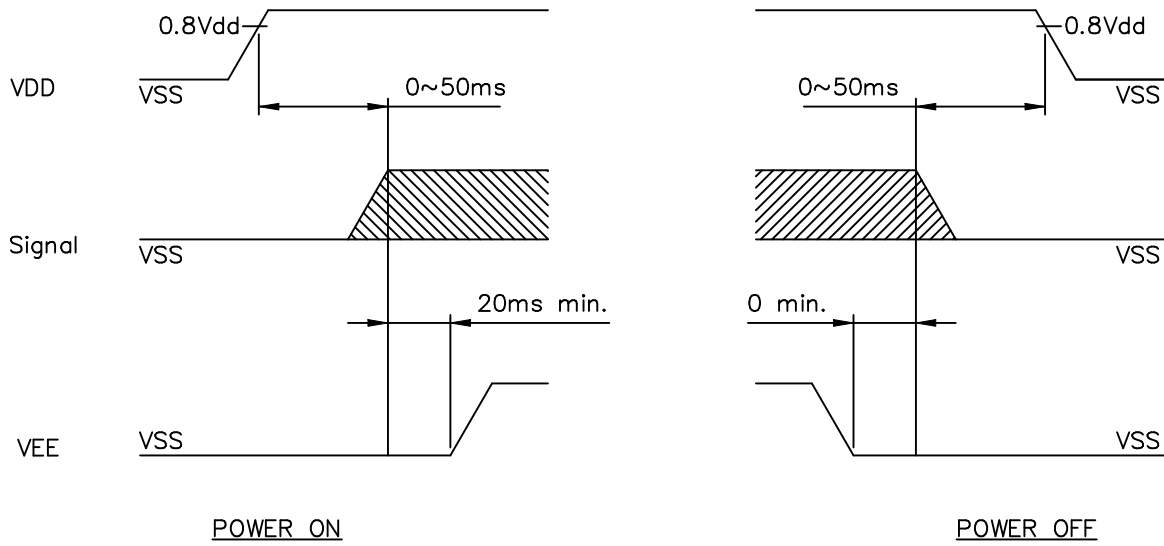


Fig. INTERFACE TIMING CHART

8-2. TIMING CHART OF INPUT SIGNAL

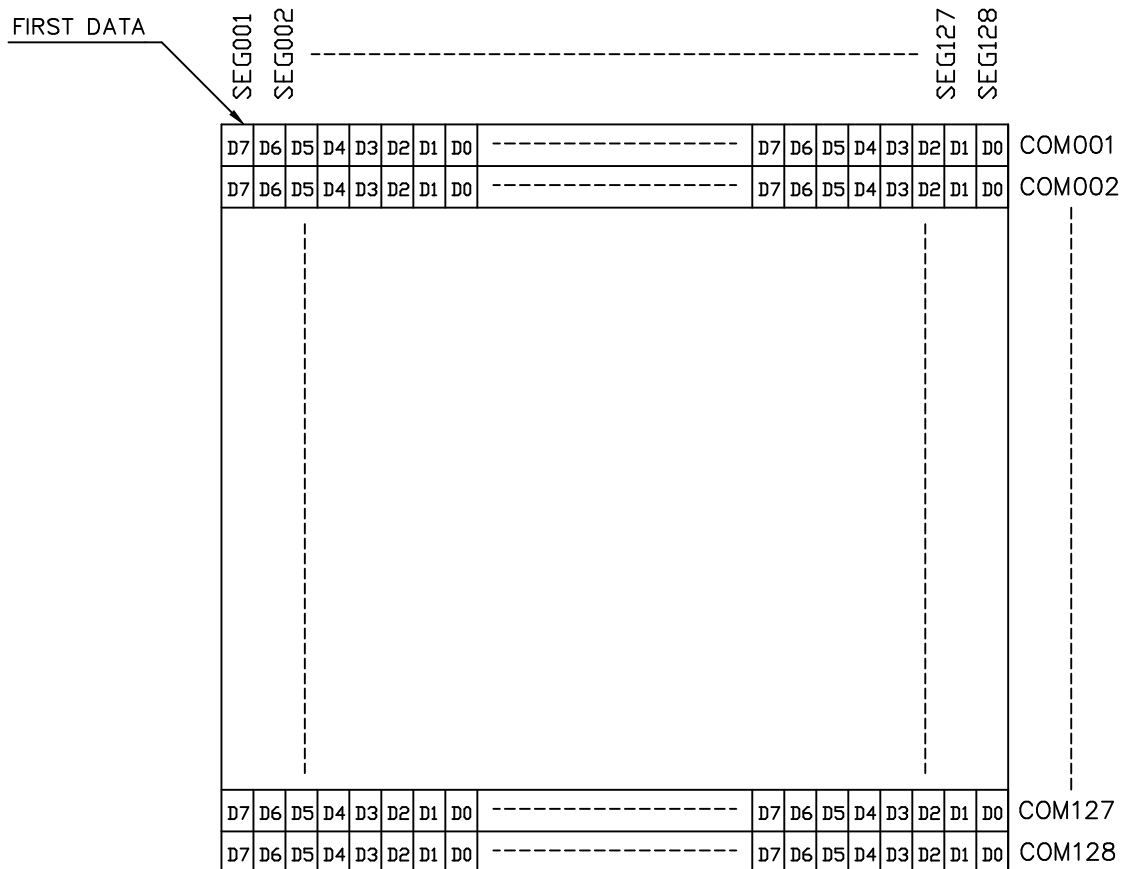


8-3. POWER ON/OFF TIMING



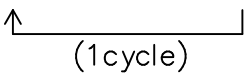
The missing pixels may occur when the LCM is driven beyond above power ON/OFF timing sequence.

8-4. DISPLAY PATTERN



9. RELIABILITY TEST

WIDE TEMPERATURE RELIABILITY TEST

NO	ITEM	CONDITION			STANDARD	NOTE
1	High Temp. Storage	80°C	120Hrs		Appearance without defect	
2	Low Temp. Storage	-40°C	120Hrs		Appearance without defect	
3	High Temp. & High Humi. Storage	60°C 90%RH	120Hrs		Appearance without defect	
4	High Temp. Operating Display	70°C	120Hrs		Appearance without defect	
5	Low Temp. Operating Display	-20°C	120Hrs		Appearance without defect	
6	Thermal Shock	-20°C, 30min → 70°C, 30min  (1cycle)			Appearance without defect	10 cycles

Inspection Provision

1.Purpose

The NAN YA inspection provision provides outgoing inspection provision and its expected quality level based on our outgoing inspection of NAN YA LCD produces.

2.Applicable Scope

The NAN YA inspection provision is applicable to the arrangement in regard to outgoing inspection and quality assurance after outgoing.

3.Technical Terms

3-1 NAN YA Technical Terms



4.Outgoing Inspection

4-1 Inspection Method

MIL-STD-105E Level II Regular inspection

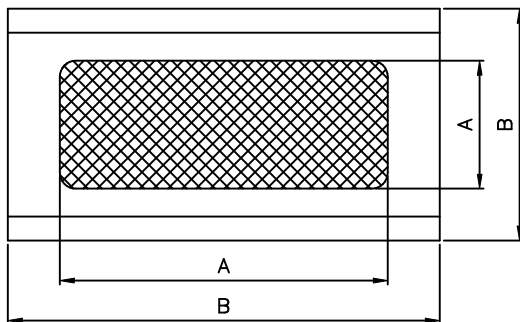
4-2 Inspection Standard

	Item		AQL(%)	Remarks
Major Defect	Dots	Opens Shorts Erroneous operation	0.4	faults which substantially lower the practicality and the initial purpose difficult to achieve.
	Solder appearance	Shorts Loose		
	Cracks	Display surface cracks		

	Dimensions	External from Dimensions	0.4	
Minor Defect	Inside the glass	Black spots	0.65	faults which appear to pose almost no obstacle to the practicality, effective use, and operation.
	Polarizing plate	Scratches, foreign Matter, air bubbles, and peeling		
	Dots	Pinhole, deformation		
	Color tone	Color unevenness		
	Solder appearance	Cold solder Solder projections		

4-3 Inspection Provisions
*Viewing Area Definition

Fig. 1



A : Zone Viewing Area
B : Zone Glass Plate Out Line

*Inspection place to be 500 to 1000 lux illuminance uniformly without glaring.
The distance between luminous source(daylight fluorescent lamp and cool white fluorescent lamp) and a sample to be 30cm to 50cm.

*Test and measurement are performed under the following conditions, unless otherwise specified.

Temperature	20± 15°C
Humidity	65± 20%R.H..
Pressure	860~1060hPa(mmbar)

In case of doubtful judgment, it is performed under the following conditions.

Temperature	20± 2°C
Humidity	65± 5%R.H..
Pressure	860~1060hPa(mmbar)

5.Specification for quality check

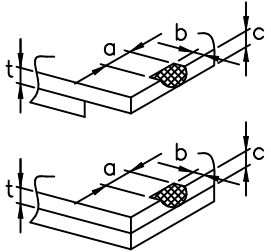
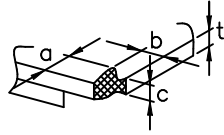
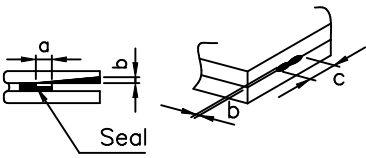
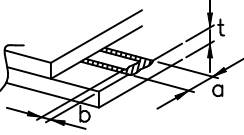
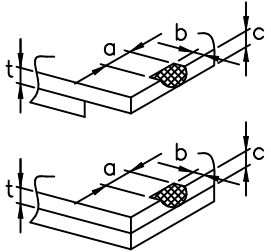
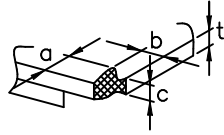
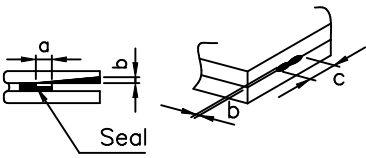
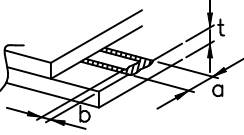
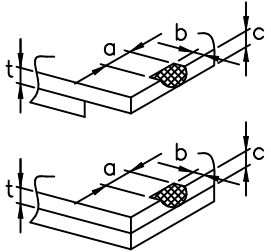
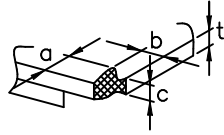
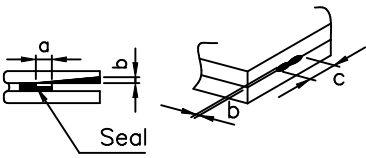
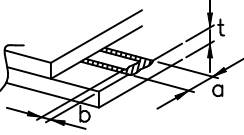
5-1 Electrical characteristics

NO.	Item	Criterion
1.	Non operational	Fail
2.	Miss operating	Fail
3.	Missing dot	Fail
4.	Contrast irregular	Fail
5.	Response time	Within Specified value
6.	LED backlight turn on/off	Within Specified value

5-2 External Appearance Defect

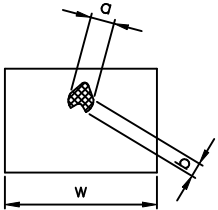
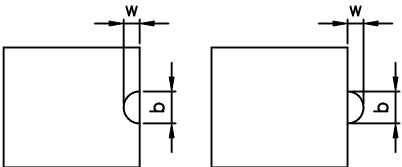
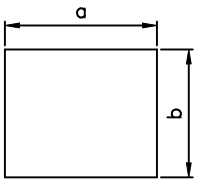
NO.	Item	Criterion																		
1.	Black spots, foreign matter, and white spots (Including light leakage due to pinholes of polarizing plates, etc.)	<p>(1)-1-Spots(At non lighting condition)</p> <table border="1" data-bbox="730 477 1377 763"> <thead> <tr> <th>Average Diameter(mm):D</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td>$D \leq 0.1$</td> <td>Ignore</td> </tr> <tr> <td>$0.1 < D \leq 0.2$</td> <td>5</td> </tr> <tr> <td>$0.2 < D \leq 0.3$</td> <td>2</td> </tr> <tr> <td>$0.3 < D$</td> <td>0</td> </tr> </tbody> </table> <p>Number of total pieces is set to within 5 pieces.</p> <p>Note that when there are 2 pieces or more, they are not to be concentrated. Set as: Average diameter = (Long diameter + Short diameter)/2</p> <p>(1)-2-Blurred Spots(At lighting condition)</p> <table border="1" data-bbox="730 1189 1377 1429"> <thead> <tr> <th>Average Diameter(mm):D</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td>$D \leq 0.3$</td> <td>Ignore</td> </tr> <tr> <td>$0.3 < D \leq 0.75$</td> <td>5</td> </tr> <tr> <td>$0.75 < D$</td> <td>0</td> </tr> </tbody> </table> <p>Number of total pieces is set to within 5 pieces.</p> <p>Note that when there are 2 pieces or more, they are not to be concentrated. Set as: Average diameter = (Long diameter + Short diameter)/2</p>	Average Diameter(mm):D	Number of pieces permitted	$D \leq 0.1$	Ignore	$0.1 < D \leq 0.2$	5	$0.2 < D \leq 0.3$	2	$0.3 < D$	0	Average Diameter(mm):D	Number of pieces permitted	$D \leq 0.3$	Ignore	$0.3 < D \leq 0.75$	5	$0.75 < D$	0
Average Diameter(mm):D	Number of pieces permitted																			
$D \leq 0.1$	Ignore																			
$0.1 < D \leq 0.2$	5																			
$0.2 < D \leq 0.3$	2																			
$0.3 < D$	0																			
Average Diameter(mm):D	Number of pieces permitted																			
$D \leq 0.3$	Ignore																			
$0.3 < D \leq 0.75$	5																			
$0.75 < D$	0																			

1.	Line	<p>(1)-1-Lines(At non lighting condition)</p> <table border="1" data-bbox="730 427 1473 712"> <thead> <tr> <th>Width(mm): W</th> <th>Length(mm):L</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td>$W \leq 0.03$</td> <td>Ignore</td> <td>Ignore</td> </tr> <tr> <td>$0.03 < W \leq 0.08$</td> <td>$L \leq 4$</td> <td>2</td> </tr> <tr> <td>$0.08 < W \leq 0.1$</td> <td>$L \leq 1$</td> <td>1</td> </tr> </tbody> </table> <p>Object exceeding 0.1mm follow the standards of the spots form. Note that when there are 2 pieces or more, they are not to be concentrated.</p> <p>(1)-2-Blurred Lines(At lighting condition)</p> <table border="1" data-bbox="730 1016 1473 1301"> <thead> <tr> <th>Width(mm): W</th> <th>Length(mm):L</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td>$W \leq 0.03$</td> <td>Ignore</td> <td>Ignore</td> </tr> <tr> <td>$0.03 < W \leq 0.08$</td> <td>$L \leq 3$</td> <td>6</td> </tr> <tr> <td>$0.08 < W$</td> <td>$3 < L$</td> <td>None</td> </tr> </tbody> </table> <p>Object exceeding 0.1mm follow the standards of the spots form. Note that when there are 2 pieces or more, they are not to be concentrated.</p>	Width(mm): W	Length(mm):L	Number of pieces permitted	$W \leq 0.03$	Ignore	Ignore	$0.03 < W \leq 0.08$	$L \leq 4$	2	$0.08 < W \leq 0.1$	$L \leq 1$	1	Width(mm): W	Length(mm):L	Number of pieces permitted	$W \leq 0.03$	Ignore	Ignore	$0.03 < W \leq 0.08$	$L \leq 3$	6	$0.08 < W$	$3 < L$	None
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$W \leq 0.03$	Ignore	Ignore																								
$0.03 < W \leq 0.08$	$L \leq 3$	6																								
$0.08 < W$	$3 < L$	None																								
2.	Scratches(Glass, reflection plates, and polarizing plates)	In accordance with black spots. (At non lighting condition)																								
3.	Color irregular	Not remarkable color irregular.																								

<p>4. Air bubbles polarizing plates, and reflection plates</p>	<table border="1" data-bbox="730 383 1246 667"> <tr> <th data-bbox="730 383 991 524">Average Diameter (mm): D</th> <th data-bbox="991 383 1246 524">Number of pieces permitted</th> <td data-bbox="1246 383 1498 667" rowspan="2">Average diameter = (Long diameter + Short diameter)/2</td> </tr> <tr> <td data-bbox="730 524 991 667">D ≤ 0.3</td> <td data-bbox="991 524 1246 667">Ignore</td> </tr> <tr> <td data-bbox="730 667 991 779">0.3 < D</td> <td data-bbox="991 667 1246 779">0</td> <td></td> </tr> </table> <p data-bbox="730 689 1498 779">Note that when there are 4 pieces or more, they are not to be concentrated.</p>	Average Diameter (mm): D	Number of pieces permitted	Average diameter = (Long diameter + Short diameter)/2	D ≤ 0.3	Ignore	0.3 < D	0			
Average Diameter (mm): D	Number of pieces permitted	Average diameter = (Long diameter + Short diameter)/2									
D ≤ 0.3	Ignore										
0.3 < D	0										
<p>5. Cracks</p>	<table border="1" data-bbox="683 779 1498 1964"> <tr> <td data-bbox="683 779 1086 1171"> <p>(1) General crack</p>  </td> <td data-bbox="1086 779 1498 1171"> <p>$a \leq 5$ $b \leq 2$ $c \leq t$</p> <p>Where, a and b are ignored when less than or equal 0.5. The numbers of pieces are set at up to 5 pieces.</p> </td> </tr> <tr> <td data-bbox="683 1171 1086 1361"> <p>(2) Corner crack</p>  </td> <td data-bbox="1086 1171 1498 1361"> <p>$a \leq 2.5$ $b \leq 2.5$ $c \leq t$ $a + b \leq 4$</p> </td> </tr> <tr> <td data-bbox="683 1361 1086 1641"> <p>(3) Seal portion crack</p>  </td> <td data-bbox="1086 1361 1498 1641"> <p>$a \leq \text{The seal width} \times 1/3$ $b \leq t \times 2/3$ $c \leq 5$</p> <p>The numbers of pieces are set at up to 5 pieces.</p> </td> </tr> <tr> <td data-bbox="683 1641 1086 1877"> <p>(4) ITO Pin crack</p>  </td> <td data-bbox="1086 1641 1498 1877"> <p>$a \leq 5$ $b \leq 1/3 \text{ pin length}$ $c \leq t$</p> </td> </tr> <tr> <td data-bbox="683 1877 1086 1964"> <p>(5) Progressive cracks</p> </td> <td data-bbox="1086 1877 1498 1964"> <p>All taken to be unacceptable.</p> </td> </tr> </table>	<p>(1) General crack</p> 	<p>$a \leq 5$ $b \leq 2$ $c \leq t$</p> <p>Where, a and b are ignored when less than or equal 0.5. The numbers of pieces are set at up to 5 pieces.</p>	<p>(2) Corner crack</p> 	<p>$a \leq 2.5$ $b \leq 2.5$ $c \leq t$ $a + b \leq 4$</p>	<p>(3) Seal portion crack</p> 	<p>$a \leq \text{The seal width} \times 1/3$ $b \leq t \times 2/3$ $c \leq 5$</p> <p>The numbers of pieces are set at up to 5 pieces.</p>	<p>(4) ITO Pin crack</p> 	<p>$a \leq 5$ $b \leq 1/3 \text{ pin length}$ $c \leq t$</p>	<p>(5) Progressive cracks</p>	<p>All taken to be unacceptable.</p>
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<p>(5) Progressive cracks</p>	<p>All taken to be unacceptable.</p>										

6.	Outer dimensions	Should be with in the tolerance.
7.	Newton ring(touch panel)	Orbicular of interference fringes is not allowed in the optimum contrast within the active area under viewing angle.
8.	Soldering	Should be no defective soldering such as shorting, loose terminal cold solder, peeling of printed circuit board pattern, improper mouting position, etc.

5-3 Dot Appearance Defect

NO.	Item	Criteria
1.	Pinhole	 <p>Dot display a and b are each $\leq 0.2\text{mm}$ The overall total is taken be with in 10 units. Note that they are not to be concentrated.</p>
2.	Missing	 <p>Dot display a and b are each $\leq 0.2\text{mm}$ The overall total is taken to be with in 10 units.</p>
3.	Thick and thin display	 <p>Taken to be within $\pm 1.5\%$ of display character width(a) and height(b).</p>

NOTICE:

• SAFETY

- 1.If the LCD panel breaks, be careful not to get the liquid crystal to touch your skin.
- 2.If the liquid crystal touches your skin or clothes, please wash it off immediately by using soap and water.

• HANDLING

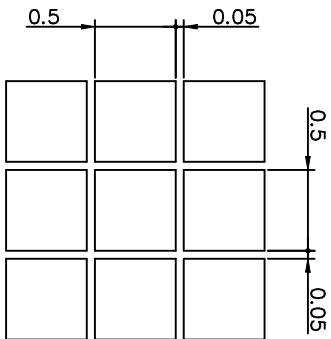
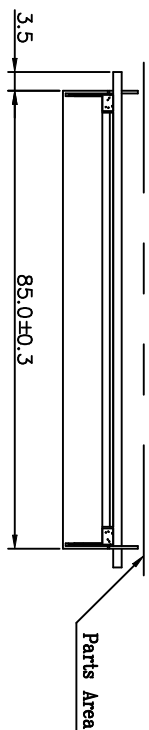
- 1.Avoid static electricity which can damage the CMOS LSI.
- 2.Do not remove the panel or frame from the module.
- 3.The polarizing plate of the display is very fragile. So, please handle it very carefully.
- 4.Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of plate.
- 5.Do not use ketonics solvent & Aromatic solvent, use a soft cloth soaked with a cleaning naphtha solvent.

• STORAGE

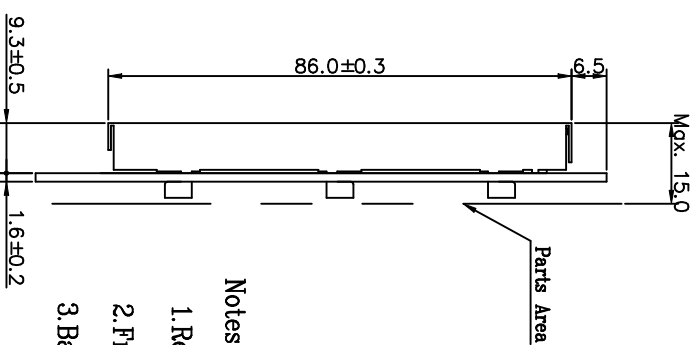
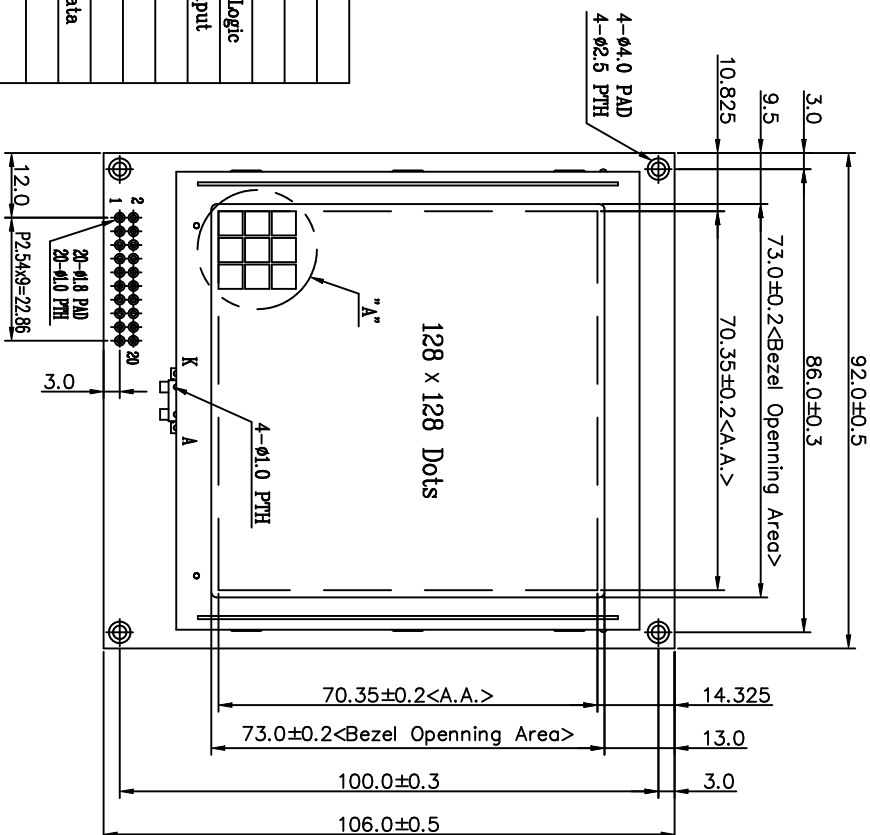
- 1.Store the panel or module in a dark place where the temperature is $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$ and the humidity is below 65% RH.
- 2.Do not place the module near organics solvents or corrosive gases.
- 3.Do not crush, shake, or jolt the module.

• TERMS OF WARRANT

- 1.Acceptance inspection period
The period is within one month after the arrival of contracted commodity at the buyer's factory site.
- 2.Applicable warrant period
The period is within twelve months since the date of shipping out under normal using and storage conditions.



Detail "A"
(Scale 30:1)



- Notes :
1. Resolution : 128 x 128 Dots
 2. Frame : SECC (0.5 t)
 3. Backlight : LED (Yellow-Green)

GENERAL TOLERANCE LIST

DIMENSION	TOLERANCE
$L \leq 6$	± 0.25 (mm)
$6 < L \leq 18$	± 0.3 (mm)
$18 < L \leq 50$	± 0.4 (mm)
$50 < L \leq 125$	± 0.5 (mm)
$125 < L$	± 0.6 (mm)
ANGLE	$\pm 1^\circ$ (DEG)

View Direction



Pin No.	Symbol	Level	Function
1	V0	-	Adjust LCD Contrast
2	VSS	-	0V Ground
3	VDD	-	+5V Power Supply for Logic
4	VEE	-	LCD Contrast Voltage Input
5	WR	L	Data Write
6	RD	L	Data Read
7	CE	L	Chip Enable
8	C/D	H/L	H : Command ; L : Data
9	RST	L	Reset
10	DB0		(LSB)
11	DB1		
12	DB2		
13	DB3		
14	DB4		
15	DB5		
16	DB6		
17	DB7		(MSB)
18	FS	H/L	Font Select
19	A(+)	-	Power Supply for LED
20	K(-)	-	Power Supply for LED

REV. NO.	DESCRIPTION	DATE	DESIGN	CHECK	APPROVE

南亞塑膠工業股份有限公司
NAN YA PLASTICS CORPORATION

製 品 圖

LMC9AH193CDS

APPROVE: _____ DATE: _____ THIRD ANGLE P.

CHECK: _____ SCALE: 1/1 UNIT: mm

DESIGN: _____ SCALE: 1/1 UNIT: mm

DRAWN: _____ SCALE: 1/1 UNIT: mm

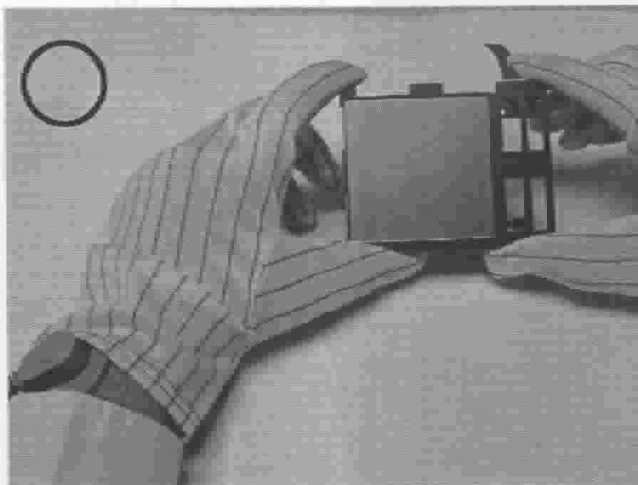
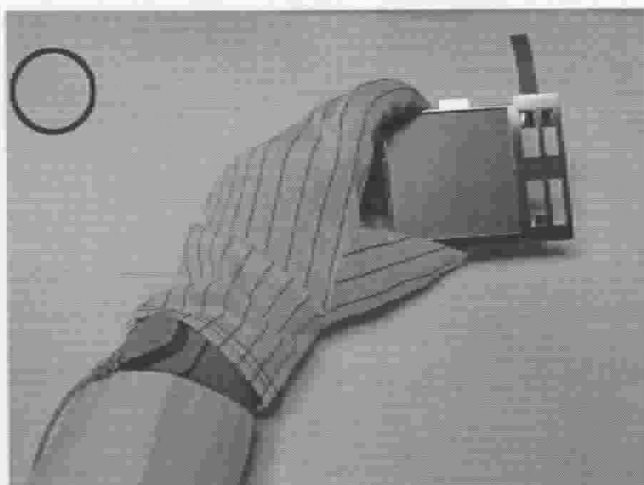
DWG NO. M193FD0A

THE NOTES OF LCM USING

LCM is easy to damage.

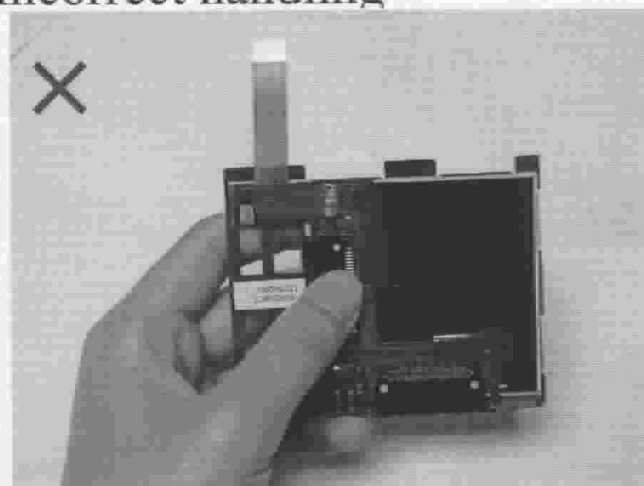
Please follow the notes as bellows, and be careful of handling!

Correct handling

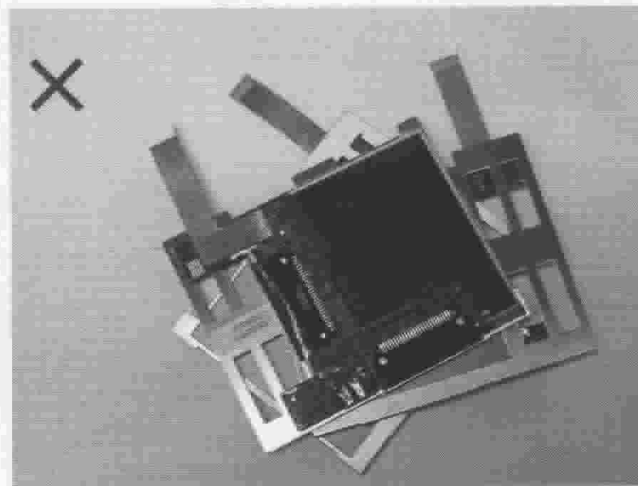


As above picture, please handle with glove by LCM edges and full EOS/ESD protection.

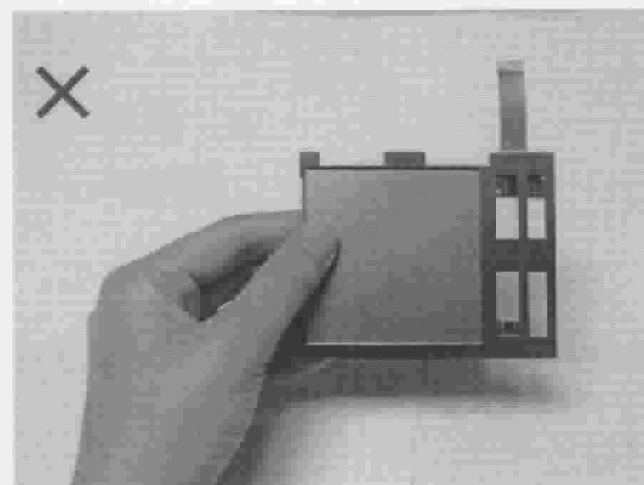
Incorrect handling



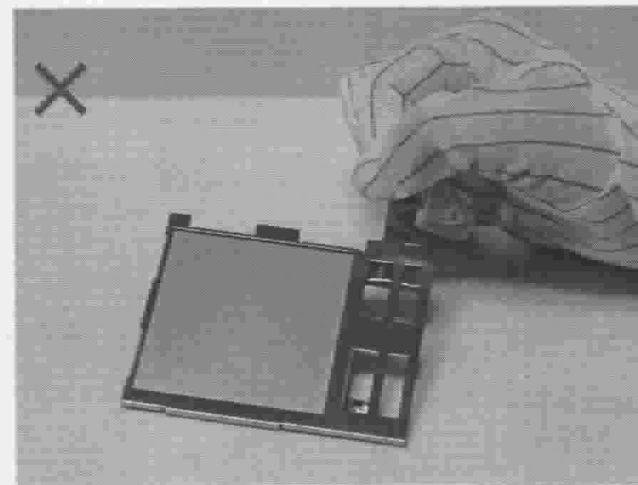
Please don't touch IC directly.



Please don't put one on another LCM.



Please don't hold the surface of LCM.



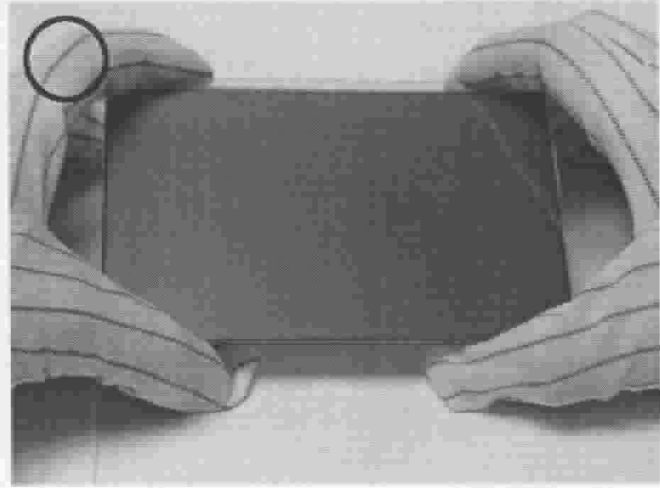
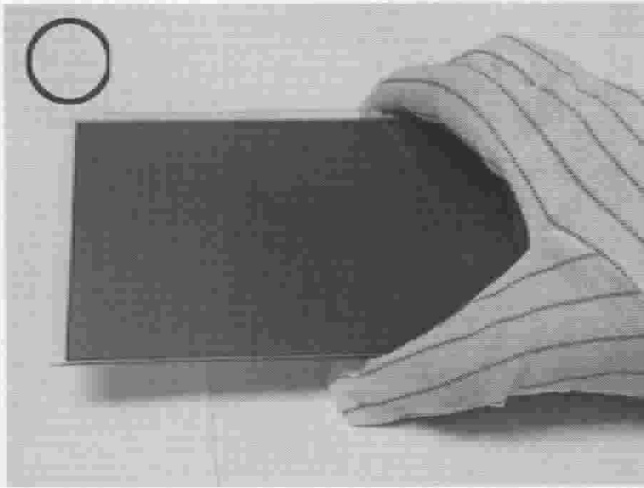
Please don't stretch interface of output.

THE NOTES OF LCD USING

LCD is easy damage.

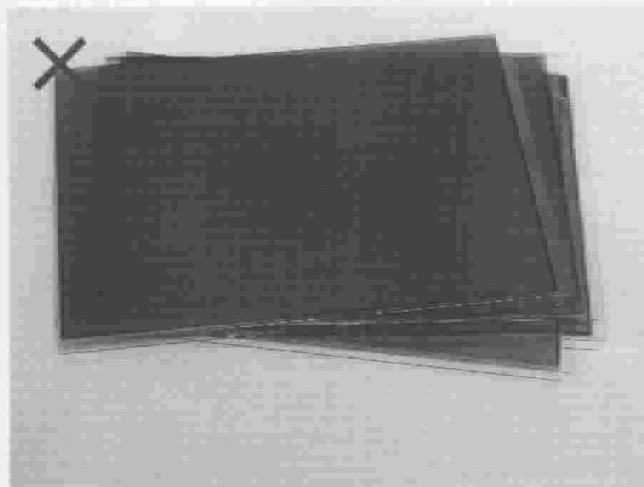
Please follow notes as bellows, and be careful of handling!

Correct handling

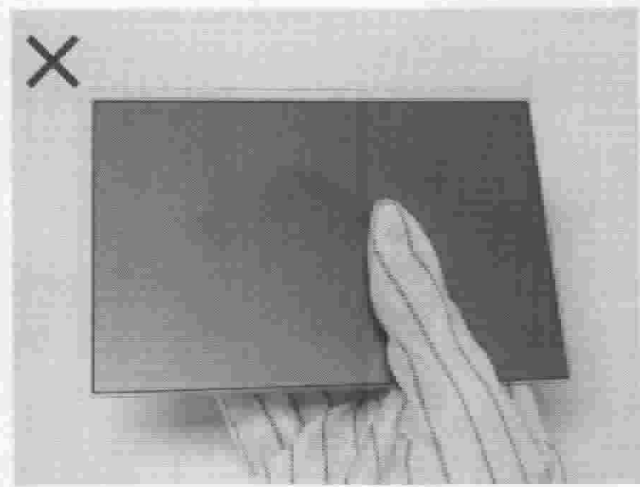


As above picture, please handle with glove by LCD edges and full EOS/ESD protection.

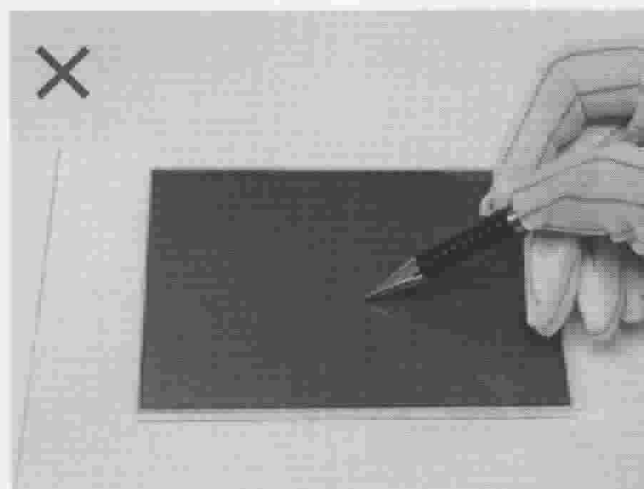
Incorrect handling



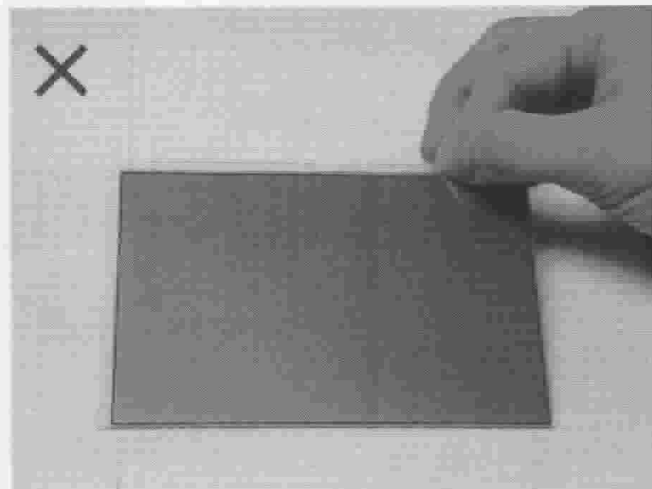
Please don't put one on another LCD.



Please don't hold the surface of LCD.



Please don't operate with sharp stick such as sharp pencil.



Please don't touch ITO glass without anti-static gloves.

