NAN YA PLASTICS CORPORATION

SPECIFICATION OF
LCD MODULE
PRODUCT NO.: LMBJ6N273S1DS_

SPEC. NO.: LM273-1A-△2

CUSTOMER
APPROVED BY
DATE:

LCD DEPARTMENT
ELECTRONIC MATERIALS DIVISION
NAN YA PLASTICS CORPORATION
201, TUNG HWA N. ROAD, TAIPEI
TEL: 886-2-27122211 EXT. 5993~5995
FAX: 886-2-27178253
E-mail: lcdsales@npc.com.tw

EDITED ON : MAY. 11, 2007

DESIGN MANAGER	DESIGN MANAGER	DESIGN CHECK	DESIGNER
			J.P Weng

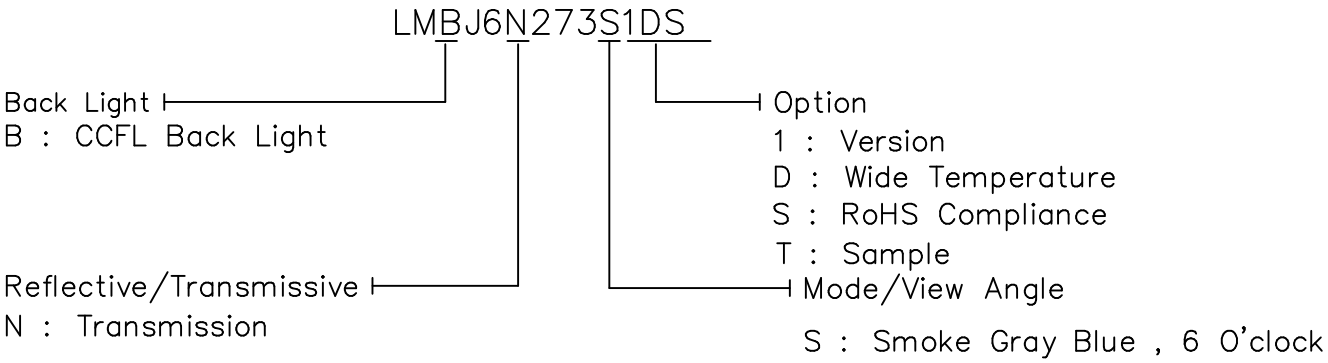
RECORDS OF REVISION

SPEC. NO. : LM273-1A

DATE	REVISED NO.	REF. PAGE	SUMMARY	DESIGN	CHECK
11.09.06	0	1~25/25	First Issue	J.P Weng	Louis Lee
12.29.06	1	3	Modified LCM Current	J.P Weng	Louis Lee
05.11.07	2	25	Modified PCB hole	J.P Weng	

1. MECHANICAL DATA

NO	ITEM	CONTENTS	UNIT
1	Product No.	LMBJ6N273S1DS_	–
2	Module Size	180(W) X 65(H) X MAX20(D)	mm
3	Dot Size	0.49 (W) x 0.49 (H)	mm
4	Dot Pitch	0.53 (W) x 0.53 (H)	mm
5	Number of Dots	240 (W) x 64 (H)	Dot
6	Duty	1/64	–
7	LCD Display Mode	STN, Somke Gray Blue	–
8	Rear Polarizer	Transmission	–
9	Viewing Direction	6	O'clock
10	Backlight	CCFL	–
11	Weight	173(approx.)	g
12	Controller IC	AX6963	–
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

VSS=0V Standard

ITEM	SYMBOL	MIN	MAX	UNIT	COMMENT
Power Supply for Logic	VCC−VSS	−0.3	7.0	V	
Power Supply for LCD	VCC−VLCD	−0.3	15.0	V	
Input Voltage	VI	−0.3	VCC	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 Ta ≦ 70℃ : 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

3-1. ELECTRICAL CHARACTERISTICS OF LCM

ITEM		SYMBOL	CONDITION		MIN.	TYP.	MAX.	UNIT
Power Supply for Logic		VCC	Ta=25°C		4.5	5.0	5.5	V
Input Voltage		VIH	H level		0.7VCC	–	VCC	V
		VIO	L level		0	–	0.3VCC	V
Recommended LC Driving Voltage (Wide Temp. LCM)		VCC–VLCD (Vop)	Duty= 1/64	–20°C	12.0	12.3	12.6	V
				0°C	11.8	12.1	12.4	
				25°C	11.7	12.0	12.3	
				50°C	11.4	11.7	12.0	
				70°C	11.1	11.4	11.7	
Power Supply Current		IDD	FLM=70 Hz VCC=5.0 V VCC–VLCD=12 V Ta=25°C PATTERN :		–	14.5	21	mA
		IEE			–	7.5	12	
LCM	Surface Luminance	Ta=25°C Inverter: TDK CXA-L10L Vin=11.3V I_L=5mA	PATTERN: (Dots All Off)		–	50	–	cd/m²
			PATTERN: (Dots All On)		160	200	–	

3-2.ELECTRICAL CHARACTERISTICS OF BACKLIGHT

Used CCFL Rating Temp.=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Lamp voltage	V_L	–	382	–	Vrms	–
Lamp current	I_L	3.0	5.0	6.0	mArms	–
Lamp power consumption	P_L	–	2.1	–	W	(*1)
Starting voltage	Vs	–	–	900	Vrms	At 25°C
		–	–	1170	Vrms	At 0°C
Lamp life time	L_L	40000	–	–	hrs	IL = 5.0mArms(*2)

(*1) Power consumption excluded inverter loss .

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

(*3) a. Please follow the table of Lamp Characteristics shown above if not to use the inverter recommended by Nan Ya .

b. If customers want to design inverter by themselves , please inform Nan Ya to offer the detail lamp specification .

3-3.ELECTRICAL CHARACTERISTICS OF RECOMMENDED INVERTER TDK CXA-L10L

3-3-1 GENERAL SPECIFICATIONS

OPERATION TEMPERATURE : -10°C~60°C

STORAGE TEMPERATURE : -20°C~85°C

DIMENSION : 56.0(L)mm x 29.0(W)mm x MAX 19.5(H)mm

3-3-2 PIN ASSIGNMENTS

INPUT (CN1) CONNECTOR :

NO.	FUNCTION
1	VIN
2	GND

OUTPUT (CN2) CONNECTOR :

NO.	FUNCTION
3	OUT1
4	OUT2
5	OUT GND

3-3-3 RELATIONSHIP BETWEEN VIN & TUBE CURRENT

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Input Voltage	VIN	–	11.3	–	V	
Tube Current	IL	–	5	–	mA	

Note : Inverter must be used in the range of VIN Input Voltage. If it doesn't used in this range, the electrical characteristics of backlight would not be to guarantee.

4. OPTICAL CHARACTERISTICS

AT V_{OP}

ITEM / MODE		Cr(Contrast Ratio)										θ(Viewing Angle)		φ(Viewing Angle)	
		−20℃		0℃		25℃		50℃		70℃		25℃		25℃	
		MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.
N	S	4.5	5.0	5.0	5.5	5.5	7.0	4.0	5.0	2.0	2.5	−	F: 40 R: 30	−	±35
Note		NOTE 6										NOTE 5			

Note:

N : Transmission

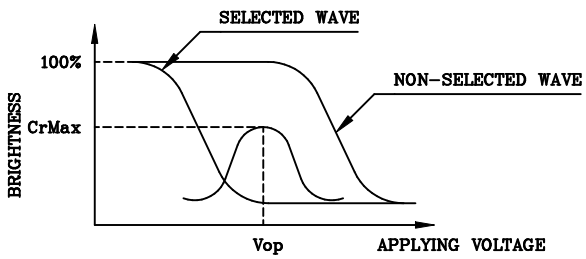
S : Smoke Gray (Blue), 6 O'Clock

AT $\phi=0°$ $\theta=0°$

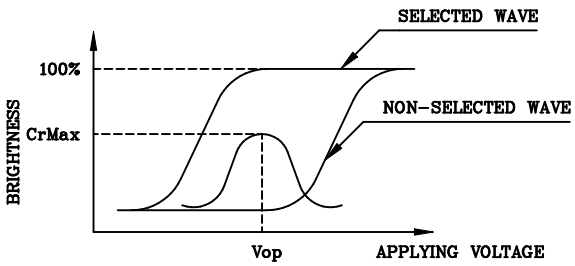
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	NOTE
Response Time (rise)	Tr	−20°C	760	950	1450	mS	NOTE 2
		0°C	160	200	300		
		25°C	70	80	120		
		50°C	50	60	110		
		70°C	35	40	60		
Response Time (fall)	Tf	−20°C	1050	1300	1950	mS	NOTE 2
		0°C	670	820	1250		
		25°C	150	170	260		
		50°C	50	60	90		
		70°C	35	40	60		

(NOTE 1)

Definition of Operation Voltage(Vop)



(positive type)



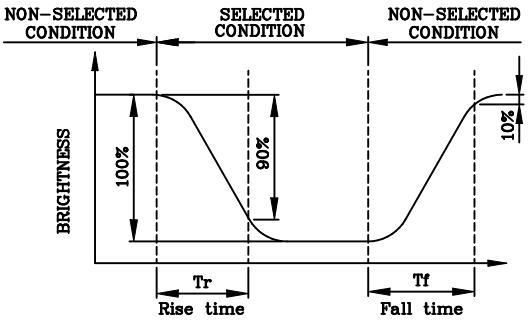
(negative type)

*Conditions

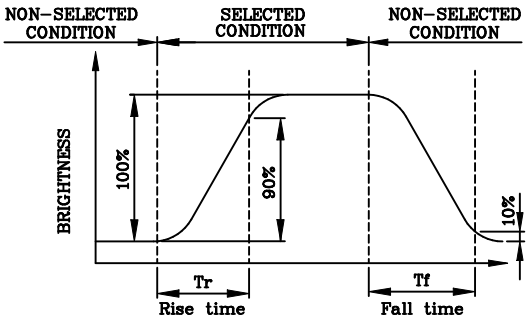
Viewing Angle : 0
Frame Frequency : 70Hz
Applying Waveform : 1/N duty 1/a bias

(NOTE 2)

Definition of Response Time(Tr,Tf)



(positive type)



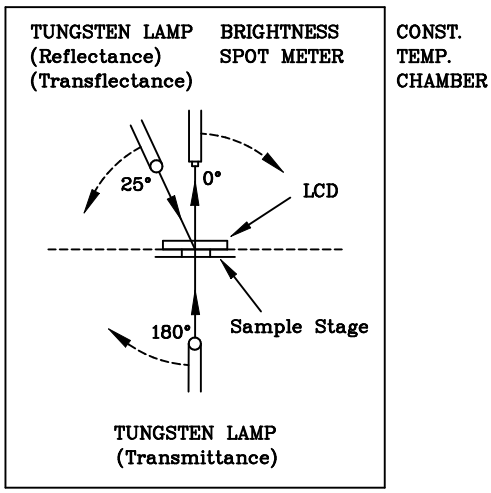
(negative type)

*Conditions

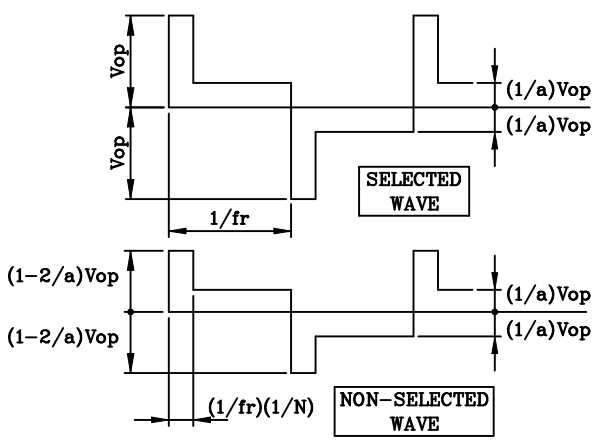
Operating Voltage : Vop
Viewing Angle (θ,ϕ) : (0,0)
Frame Frequency : 70Hz
Applying Waveform : 1/N duty 1/a bias

(NOTE 3)

Description of Measuring Equipment and Driving Waveforms

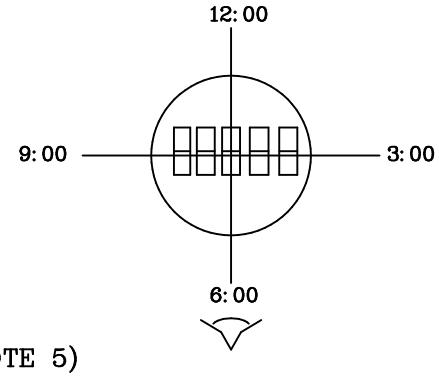


Multiplex Driving (1/N duty 1/a bias)



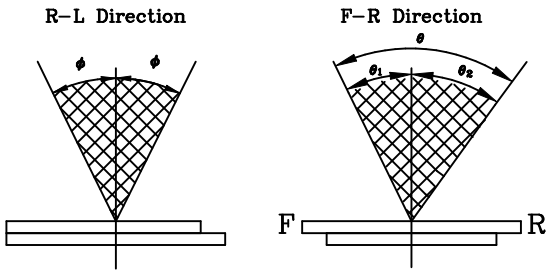
(NOTE 4)

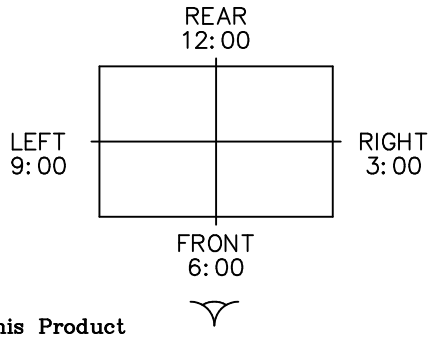
Definition of Viewing Direction



(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 : Vop

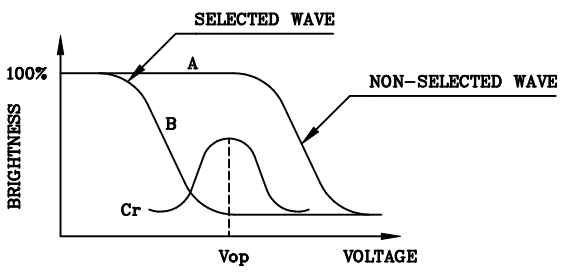
Frame Frequency : 70Hz

Applying Waveform : 1/N duty 1/a bias

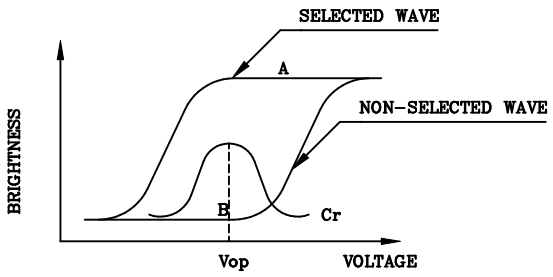
Contrast Ratio : larger than 2

(NOTE 6)

Definition of Contrast Ratio (Cr)



(positive type)



(negative type)

Contrast Ratio : Cr=A/B

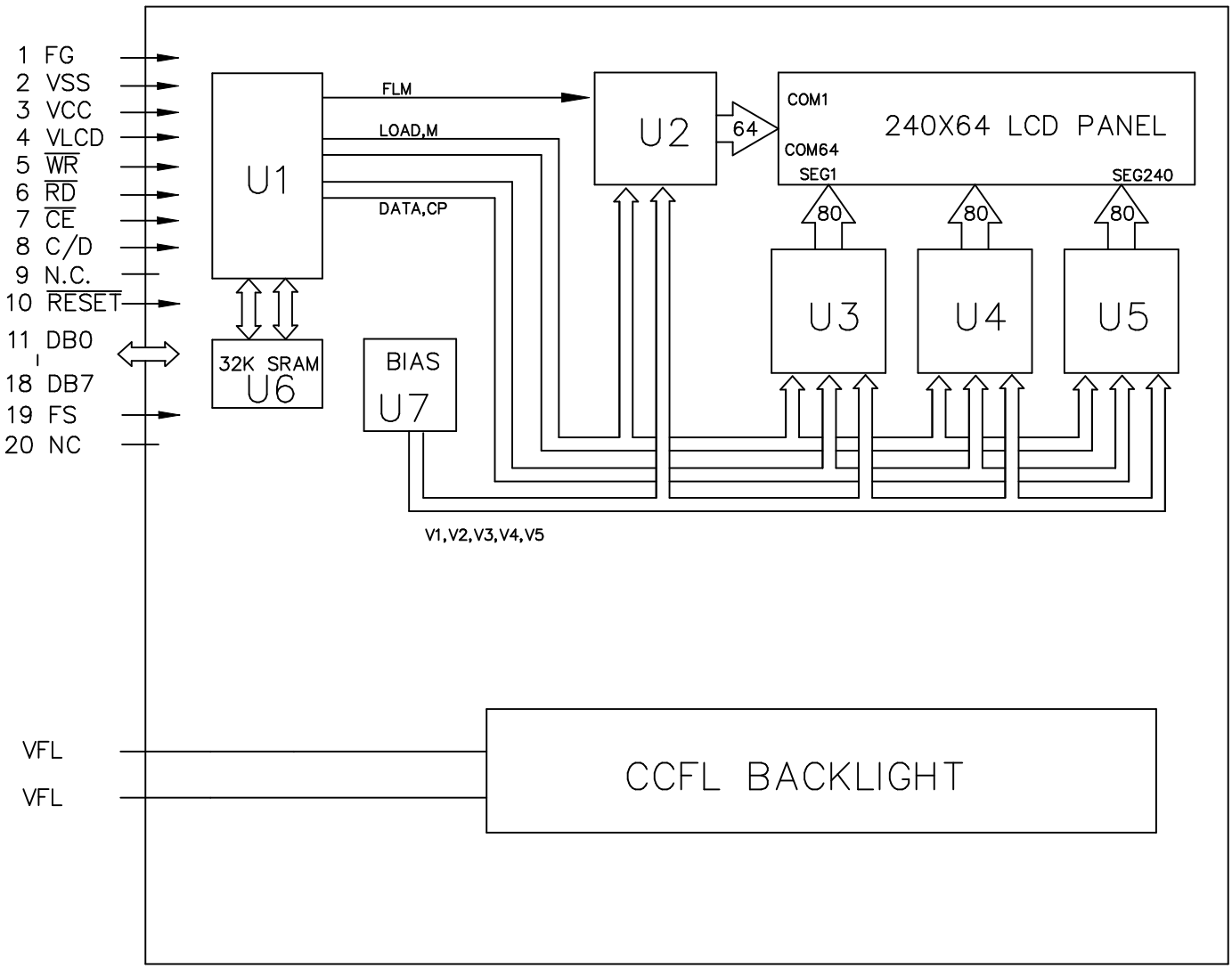
*Conditions

Viewing Angle : 0

Frame Frequency : 70Hz

Appying Waveform : 1/N duty 1/a bias

5. BLOCK DIAGRAM



6. INTERNAL PIN CONNECTION

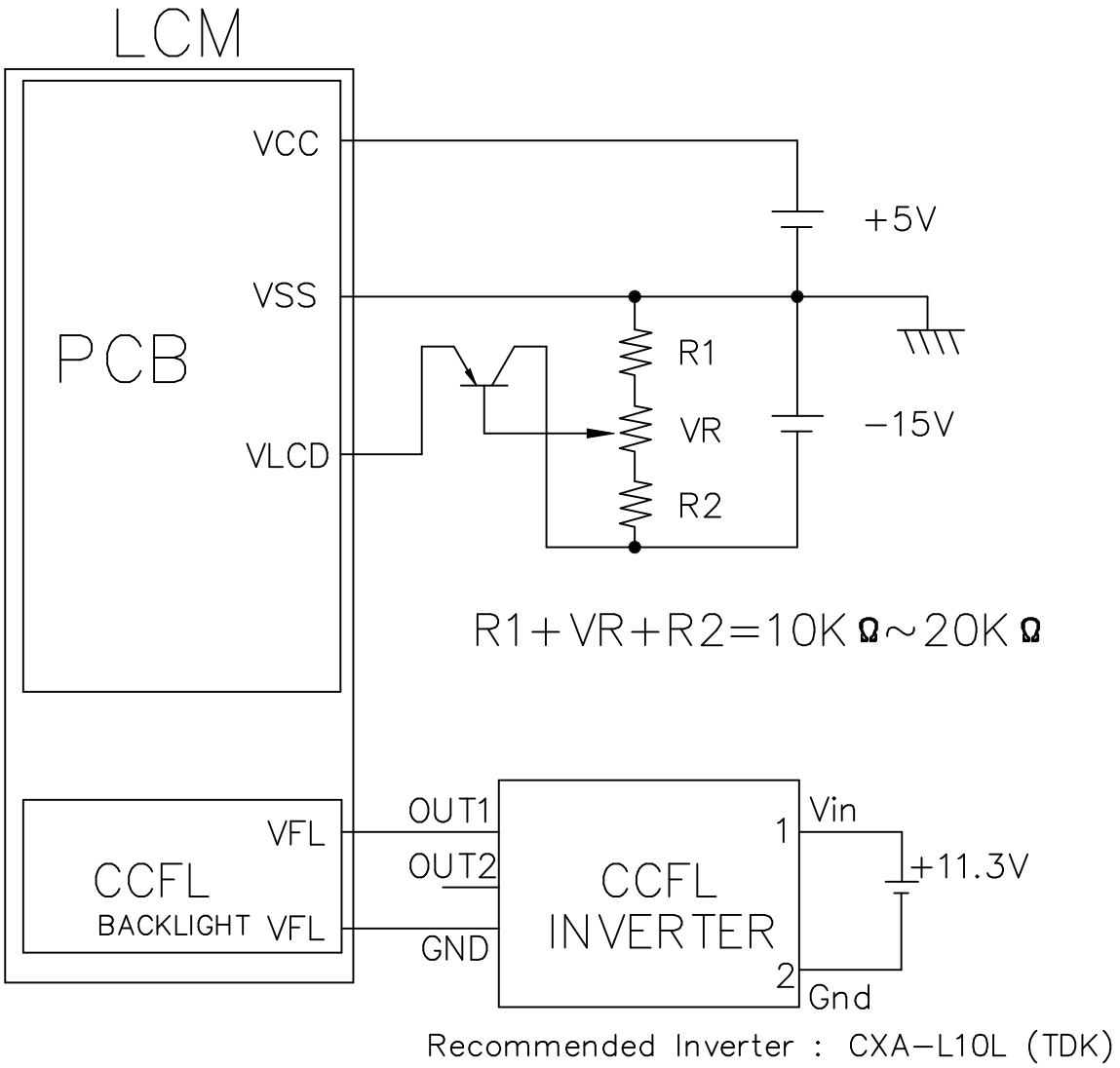
CN1 : Pitch 2.54 mm

Pin No.	Symbol	Function
1	FG	Frame Ground
2	VSS	Ground (0V)
3	VCC	Power Supply for Logic Circuit (+)
4	VLCD	LCD Drive Voltage (−)
5	$\overline{WR}$	Write Data
6	$\overline{RD}$	Read Data
7	$\overline{CE}$	Chip Enable
8	C/D	Code / Data
9	NC	No Connection
10	$\overline{RESET}$	Reset Active "L"
11	DB0	Data Bus Line
12	DB1	
13	DB2	
14	DB3	
15	DB4	
16	DB5	
17	DB6	
18	DB7	
19	FS	Font Select H : 6 x 8 ; L : 8 x 8
20	NC	No Connection

CCFL : Pitch 3.96mm (H8800 Series Housings)
Mating Connector : P8800I or P8800L Series

Pin No.	Symbol	Function
1	HOT	Power Supply for CCFL (HOT)
2	NC	No Connection
3	NC	No Connection
4	GND	Power Supply for CCFL (GND)

7.POWER SUPPLY



Recommended Inverter : CXA-L10L (TDK)

8. TIMING CHARACTERISTICS

8-1 INTERFACE TIMING

@VCC = 5V±10%

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

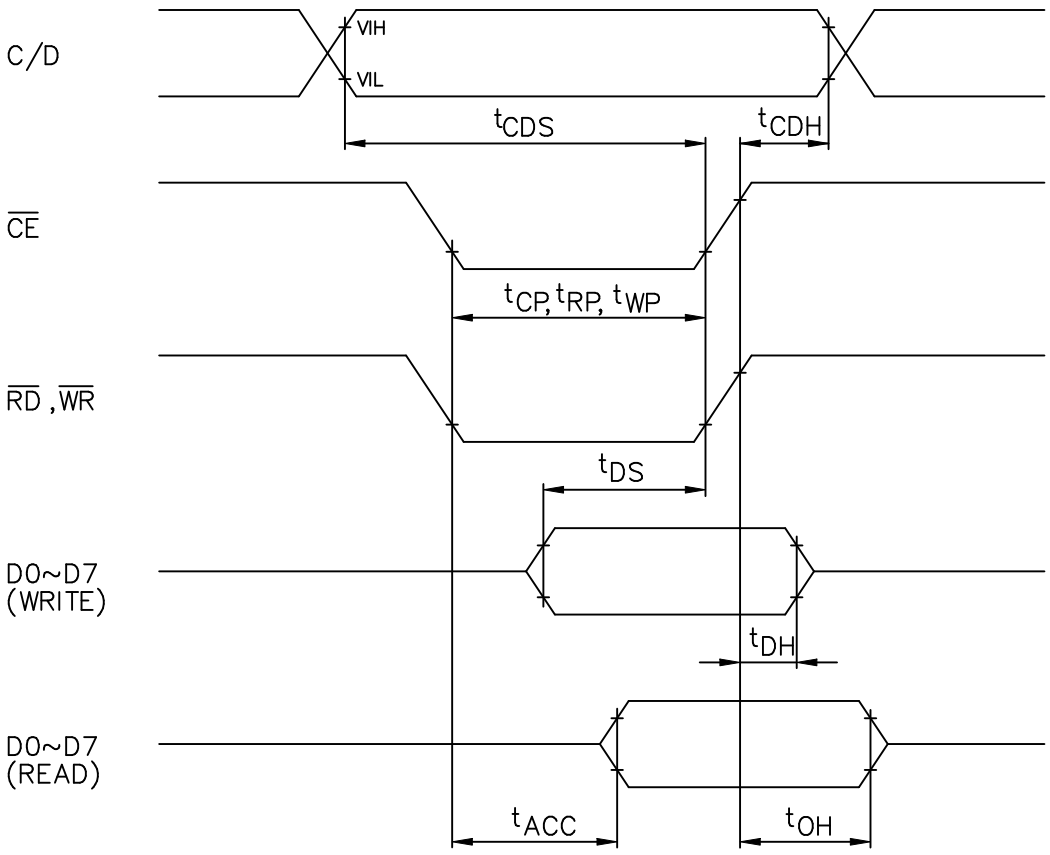
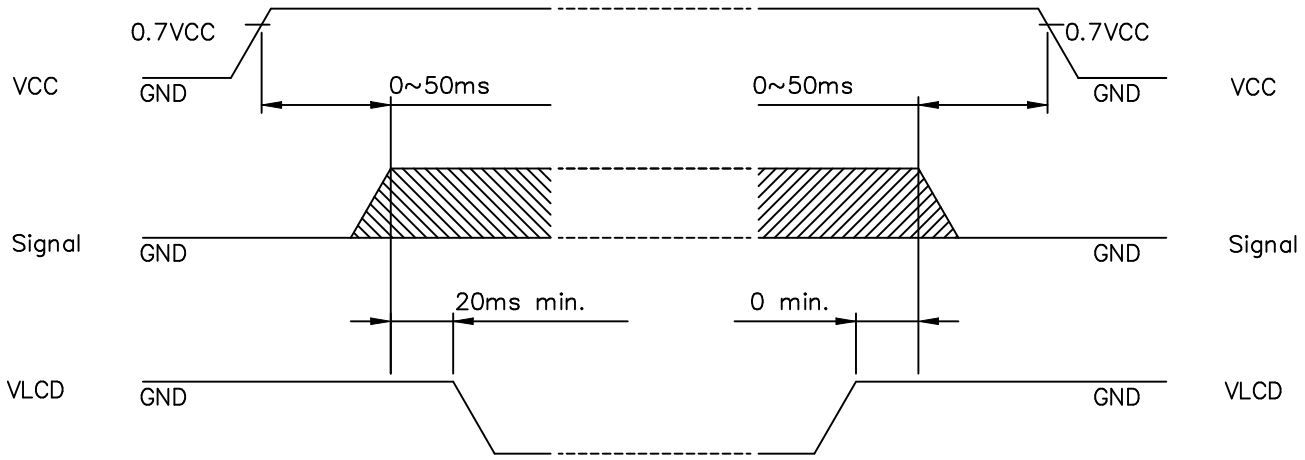


Fig. INTERFACE TIMING CHART

8-2 POWER ON/OFF TIMING

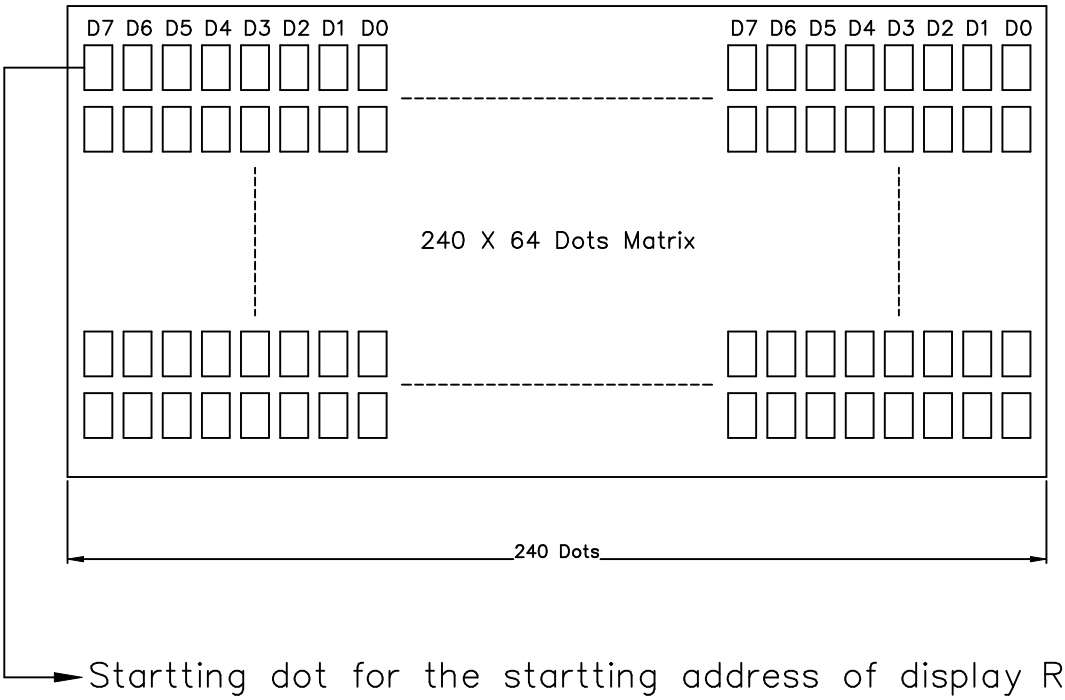


POWER ON

POWER OFF

The missing pixels may occur when the LCM is driven beyond above power interface sequence.

8-3 DISPLAY PATTERN



D0~D7 are 8 bits transmitted data, where D0 is LSB and D7 is MSB.

8-4.COMMAND LIST

COMMAND	CODE	D1	D2	FUNCTION
REGISTER SET	00100001	X address	X address	Cursor pointer set
	00100010	Data	OOH	Offset register set
	00100100	Low address	High address	Address pointer set
CONTROL WORD SET	01000000	Low address	High address	Text home address set
	01000001	Columns	OOH	Text area set
	01000010	Low address	High address	Graphic home address set
	01000011	Columns	OOH	Graphic area set
MODE SET	1000X000	—	—	"OR" mode
	1000X001	—	—	"EXOR" mode
	1000X011	—	—	"AND" mode
	1000X100	—	—	"Text attribute" mode
	10000XXX	—	—	Internal CG ROM mode
	10001XXX	—	—	External CG RAM mode
DISPLAY MODE	10010000	—	—	Display off
	1001XX10	—	—	Cursor on, blink off
	1001XX11	—	—	Cursor on, blink on
	100101XX	—	—	Text on, graphic off
	100110XX	—	—	Text off, graphic on
	100111XX	—	—	Text on, graphic on
CURSOR PATTERN SELECT	10100000	—	—	1 line cursor
	10100001	—	—	2 lines cursor
	10100010	—	—	3 lines cursor
	10100011	—	—	4 lines cursor
	10100100	—	—	5 lines cursor
	10100101	—	—	6 lines cursor
	10100110	—	—	7 lines cursor
	10100111	—	—	8 lines cursor
DATA AUTO READ/WRITE	10110000	—	—	Data auto write set
	10110001	—	—	Data auto read set
	10110010	—	—	Auto reset
DATA READ WRITE	11000000	Data	—	Data write and ADP increment
	11000001	—	—	Data read and ADP increment
	11000010	Data	—	Data write and ADP decrement
	11000011	—	—	Data read and ADP decrement
	11000100	Data	—	Data write and ADP nonvariable
	11000101	—	—	Data read and ADP nonvariable
SCREEN PEEK	11100000	—	—	Screen peek
SCREEN COPY	11101000			Screen copy
BIT SET/RESET	11110XXX	—	—	bit reset
	11111XXX	—	—	bit set
	1111X000	—	—	bit0(LSB)
	1111X001	—	—	bit1
	1111X010	—	—	bit2
	1111X011	—	—	bit3
	1111X100	—	—	bit4
	1111X101	—	—	bit5
	1111X110	—	—	bit6
	1111X111	—	—	bit7(MSB)

* STATUS READ

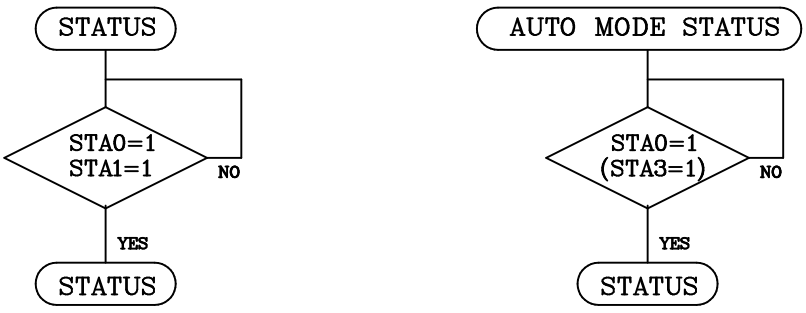
Before sending data (read/write), command it is necessary to check the status.

AX6963 status word format is following :

LSB	D0	STA0	Check capability of command execution	0: Disable 1: Enable
	D1	STA1	Check capability of data read/write	0: Disable 1: Enable
	D2	STA2	Check capability of auto mode data read	0: Disable 1: Enable
	D3	STA3	Check capability of arto mode data write	0: Disable 1: Enable
	D4	STA4	Not use	
	D5	STA5	Check capability of controller operation	0: Disable 1: Enable
	D6	STA6	Error flag. Using screen peek/copy command	0: Disable 1: Enable
MSB	D7	STA7	Check the condition blink	0: Disable 1: Enable

Note 1: It is necessary to check STA0 and STA1 at the same time. The error is happened by sending data at executing command.
Note 2: The status check will be enough to check STA0/STA1.
Note 3: STA2/STA3 are valid in auto mode STA0/STA1 are invalid.

Status checking flow



Note 4: It is impossible to save status check in the case of command of MSB0. To have the delay time cannot be save status check. The interrupt of hardware is happened at the end of lines. If command of MSB0 is sent in this period, the command executing is waited. The state of waiting doesn't disregarded or rewrites data of waiting command.

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

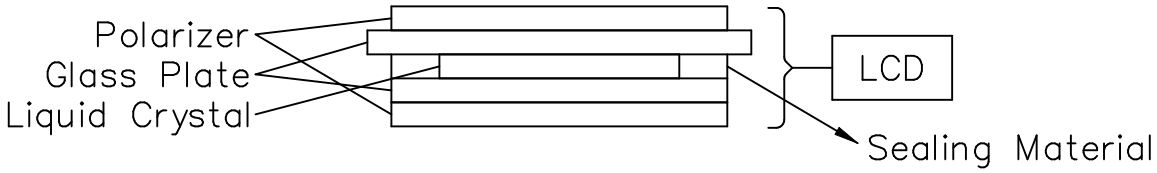
The NAN YA inspection provision provides outgoing inspection provision and its expected quality level based on our outgoing inspection of NAN YA LCD produces.

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 Ispection Method

MIL-STD-105E Level Ⅱ Regular inspection

4-2 Inspection Standard

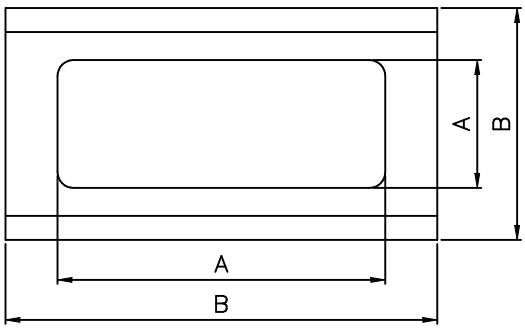
	Item		AQL(%)	Remarks
Major Defect	Dots	Opens Shorts Erroneous operation	0.4	faults which substantially lower the practicality and the initial purpose difficult to achieve.
	Solder appearance	Shorts Loose		
	Cracks	Display surface cracks		

	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.

Otherwise specfied.

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± 15°C
Humidity	65± 20%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.	CCFL backlight turn on/off	Within Specified Value

5-2 External Appearance Defect

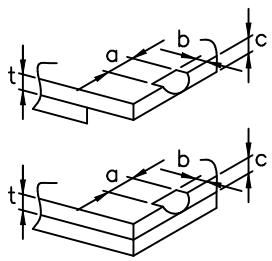
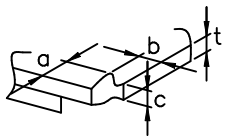
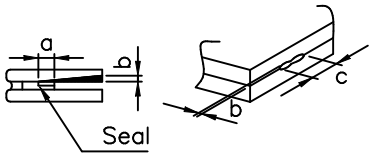
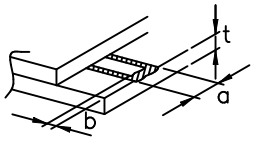
<table>
<tr><th>NO.</th><th>Item</th><th>Criterion</th></tr>
<tr><td>1.</td><td>Black spots, foreign matter, and white spots (Including light leakage due to pinholes of polarizing plates, etc.)</td><td>(1)-1-Spots
<table><tr><th>Average Diameter(mm): D</th><th>Number of pieces permitted</th></tr><tr><td>D≦0.1</td><td>Ignore</td></tr><tr><td>0.1<D≦0.2</td><td>5</td></tr><tr><td>0.2<D≦0.3</td><td>2</td></tr><tr><td>0.3<D</td><td>0</td></tr></table>Number of total pieces is set to within 5 pieces.

Note that when there are 2 pieces or more, they are not to be concentrated. Set as: Average diameter = (Long diameter + Short diameter)/2

(1)-2-Blurred Spots(At lighting condition)
<table><tr><th>Average Diameter(mm): D</th><th>Number of pieces permitted</th></tr><tr><td>D≦0.3</td><td>Ignore</td></tr><tr><td>0.3<D≦0.75</td><td>5</td></tr><tr><td>0.75<D</td><td>0</td></tr></table>Number of total pieces is set to within 5 pieces.

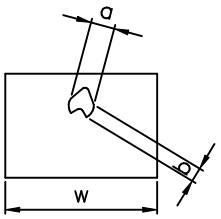
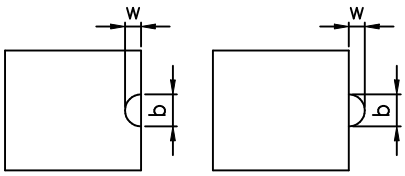
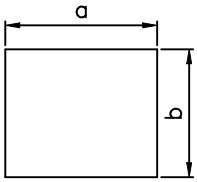
Note that when there are 2 pieces or more, they are not to be concentrated. Set as: Average diameter = (Long diameter + Short diameter)/2</td></tr>
</table>

<table>
<tr><td>1.</td><td>Line</td><td>(1)-1-Lines(At non lighting condition)
<table><tr><th>Width(mm): W</th><th>Length(mm): L</th><th>Number of pieces permitted</th></tr><tr><td>W≦0.03</td><td>Ignore</td><td>Ignore</td></tr><tr><td>0.03<W≦0.08</td><td>L≦4</td><td>2</td></tr><tr><td>0.08<W≦0.1</td><td>L≦1</td><td>1</td></tr></table>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.
(1)-2-Blurred Lines(At lighting condition)
<table><tr><th>Width(mm): W</th><th>Length(mm): L</th><th>Number of pieces permitted</th></tr><tr><td>W≦0.03</td><td>Ignore</td><td>Ignore</td></tr><tr><td>0.03<W≦0.08</td><td>L≦3</td><td>6</td></tr><tr><td>0.08<W</td><td>3<L</td><td>None</td></tr></table>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.</td></tr>
<tr><td>2.</td><td>Scratches(Glass, reflection plates, and polarizing plates)</td><td>In accordance with black spots.
(At non lighting condition)</td></tr>
<tr><td>3.</td><td>Color irregular</td><td>Not remarkable color irregular.</td></tr>
</table>

<table>
<tr><td>4.</td><td>Air bubbles polarizing plates, and reflection plates</td><td colspan="2">
<table>
<tr><th>Average Diameter (mm): D</th><th>Number of pieces permitted</th></tr>
<tr><td>D≦0.3</td><td>Ignore</td></tr>
<tr><td>0.3<D</td><td>0</td></tr>
</table>
Average diameter = (Long diameter + Short diameter)/2
Note that when there are 4 pieces or more, they are not to be concentrated.
</td></tr>
<tr><td rowspan="5">5.</td><td rowspan="5">Cracks</td><td>(1)General crack
 
</td><td>a≦5
b≦2
c≦t
Where, a and b are ignored when less that or equal 0.5. The numbers of pieces are set at up to 5 pieces.</td></tr>
<tr><td>(2)Corner crack
 
</td><td>a≦2.5
b≦2.5
c≦t
a+b≦4</td></tr>
<tr><td>(3)Seal portion crack
 
</td><td>a≦The seal widthx1/3
b≦tx2/3
c≦5
The numbers of pieces are set at up to 5 pieces.</td></tr>
<tr><td>(4)ITO Pin crack
 
</td><td>a≦5
b≦1/3 pin length
c≦t</td></tr>
<tr><td>(5)Progressive cracks</td><td>All taken to be unacceptable.</td></tr>
</table>

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	 Dot display a and b are each ≦0.2mm The overall total is taken be with in 10 units. Note that they are not to be concentrated.
2.	Missing	 Dot display a and b are each ≦0.2mm The overall total is taken to be with in 10 units.
3.	Thick and thin display	 Taken to be within±1.5% of display character width(a) and height(b).

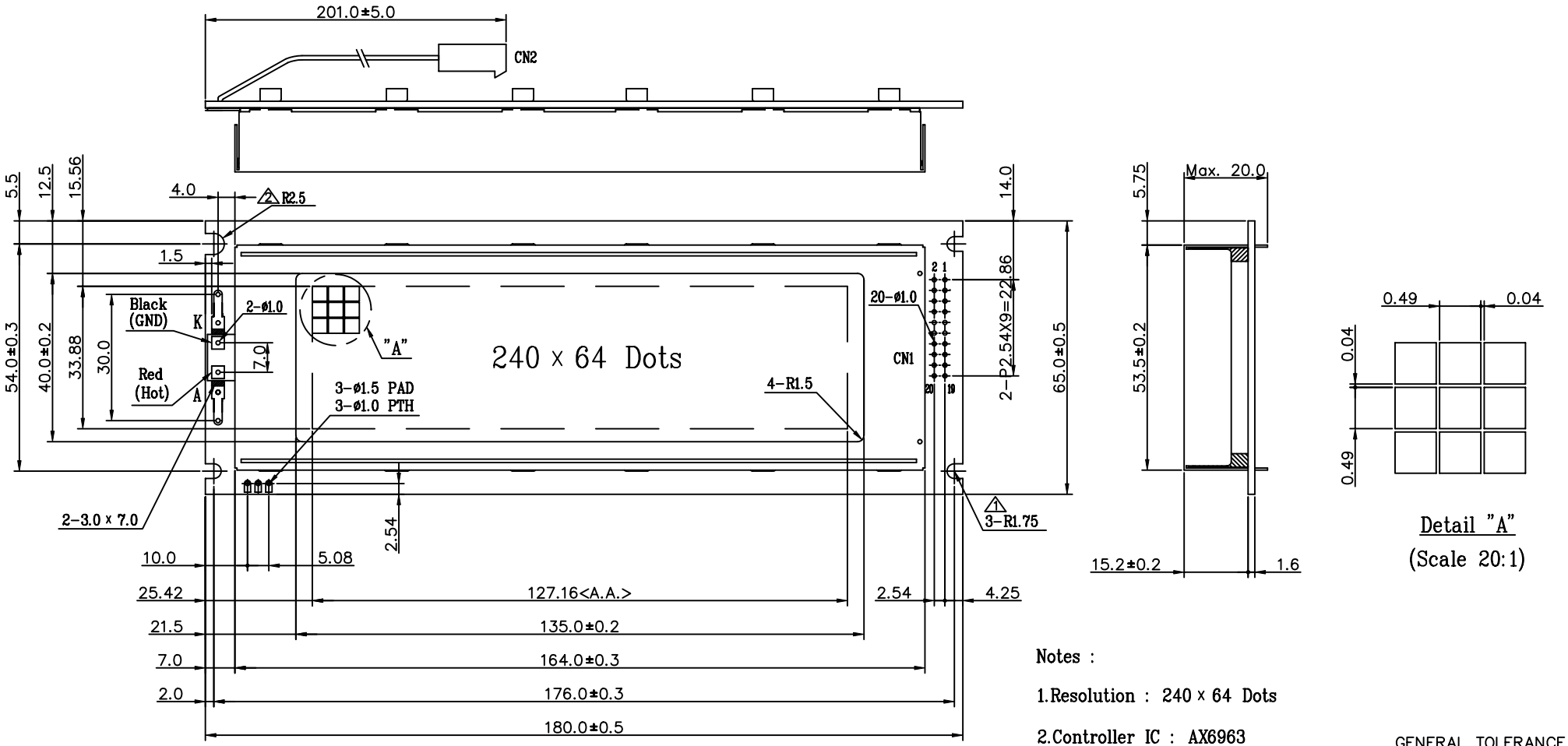
NOTICE:

- 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°C±5°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.



View Direction

Notes :

1. Resolution : 240 x 64 Dots
2. Controller IC : AX6963
3. Backlight : CCFL
4. Frame : SPCC (0.5 t)

CN1 : Pitch 2.54 mm

Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	FG	Frame Ground	11	DB0	Data Bus Line
2	VSS	Ground (0V)	12	DB1	
3	VCC	Power Supply for Logic Circuit (+)	13	DB2	
4	VLCD	LCD Drive Voltage (-)	14	DB3	
5	$\overline{WR}$	Write Data	15	DB4	
6	$\overline{RD}$	Read Data	16	DB5	
7	$\overline{CE}$	Chip Enable	17	DB6	
8	C/D	Code / Data	18	DB7	
9	NC	No Connection	19	FS	Font Select H : 6 x 8 ; L : 8 x 8
10	$\overline{RESET}$	Reset Active "L"	20	NC	No Connection

CN2 : Pitch 3.96 mm

Pin No.	Symbol	Function
1	HOT	Power Supply for CCFL (HOT)
2	NC	No Connection
3	NC	No Connection
4	GND	Power Supply for CCFL (GND)

REV. NO.	DESCRIPTION	DATE	DESIGN	CHECK	APPROVE
5					
4					
3					
2	Modified PCB hole	96.5.10	C.B.Lan		
1	Modified PCB hole	96.4.26	C.B.Lan	Louis Lee	L.C.Wu

GENERAL TOLERANCE LIST

DIMENSION	TOLERANCE
L ≤ 6	±0.25 (mm)
6 < L ≤ 18	±0.3 (mm)
18 < L ≤ 50	±0.4 (mm)
50 < L ≤ 125	±0.5 (mm)
125 < L	±0.6 (mm)
ANGLE	±1° (DEG)

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

製 品 圖

LMBJ6N273S1DS_

	NAME	DATE	THIRD ANGLE P.
APPROVE	Tony Chou	95.11.13	
CHECK	Y. C. Liu	95.11.09	
DESIGN	C. B. Lan	95.11.09	SCALE UNIT
DRAWN	C. B. Lan	95.11.09	1/1 mm

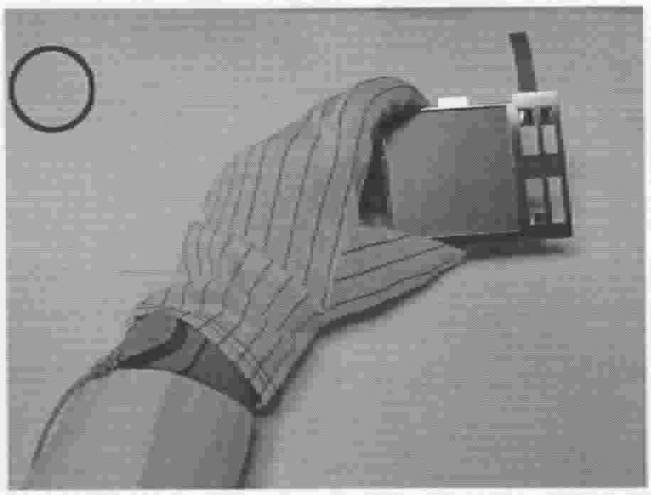
DWG NO. M273AD1A 1/1 2

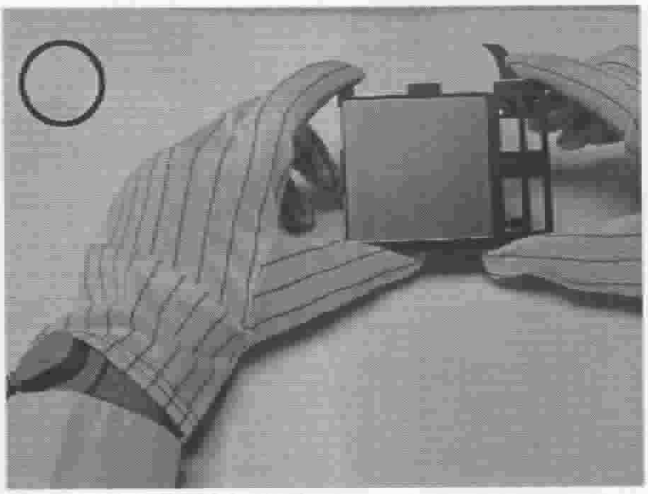
THE NOTES OF LCM USING

LCM is easy to damage.

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

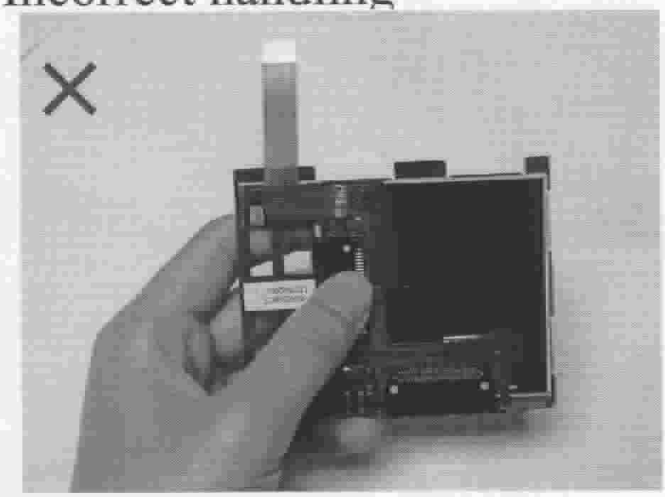
Correct handling



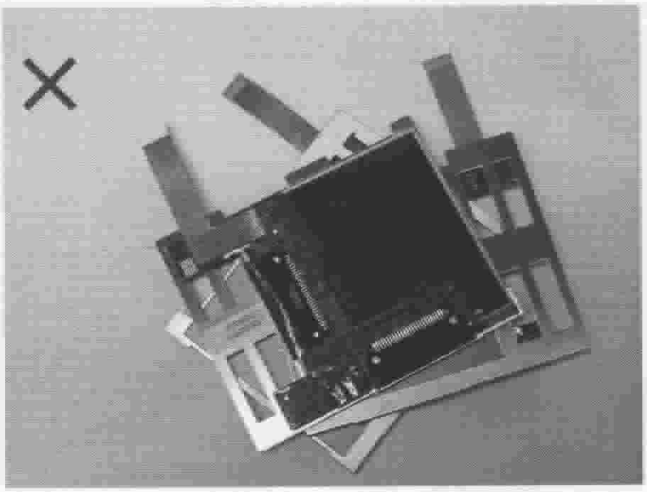


As above picture, please handle with glove by LCM edges and full EOS/ESD protection.

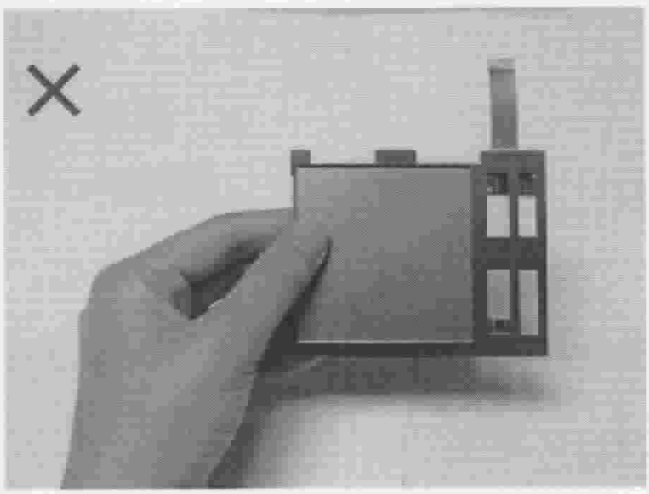
Incorrect handling



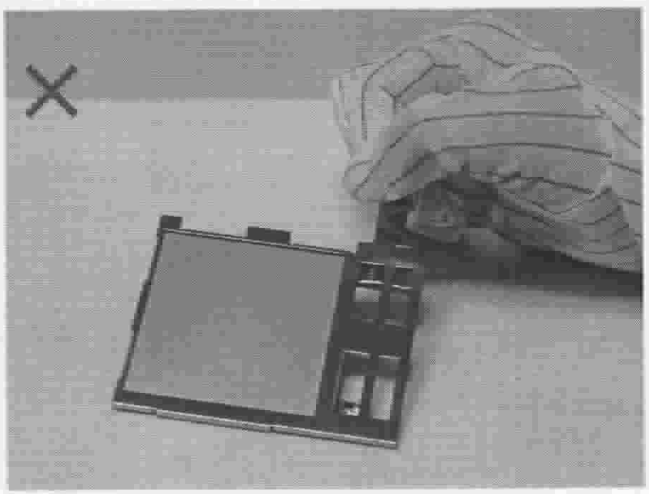
Please don't touch IC directly.



Please don't put one on another LCM.



Please don't hold the surface of LCM.

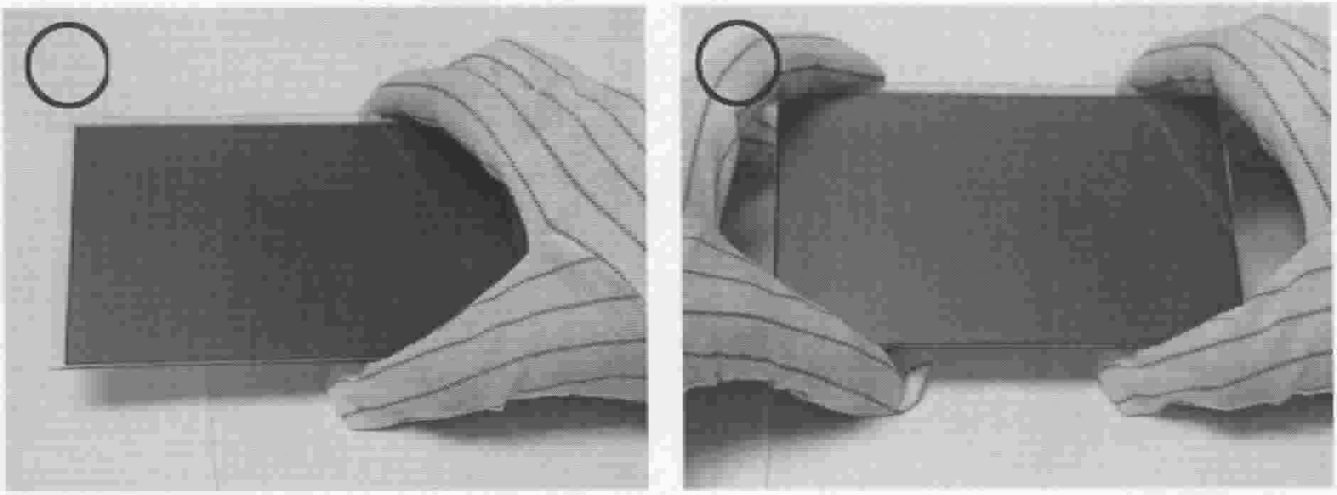


Please don't stretch interface of output.

THE NOTES OF LCD USING

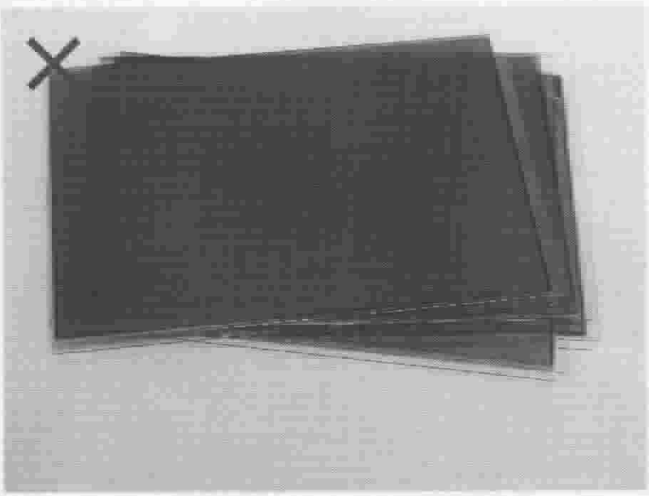
LCD is easy damage.
Please follow notes as bellows, and be careful of handling!

Correct handling

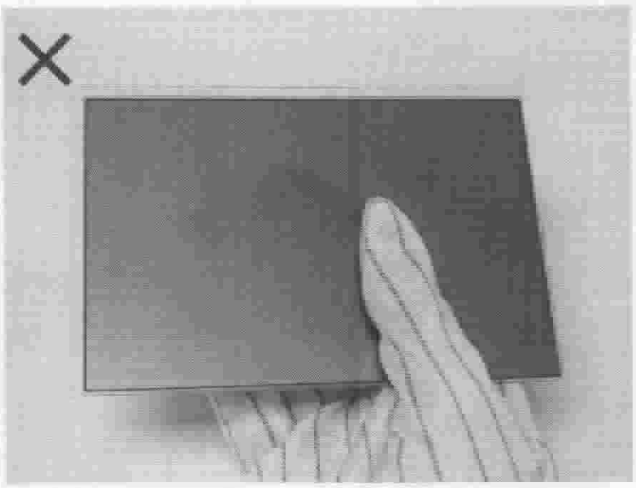


As above picture, please handle with glove by LCD edges and full EOS/ESD protection.

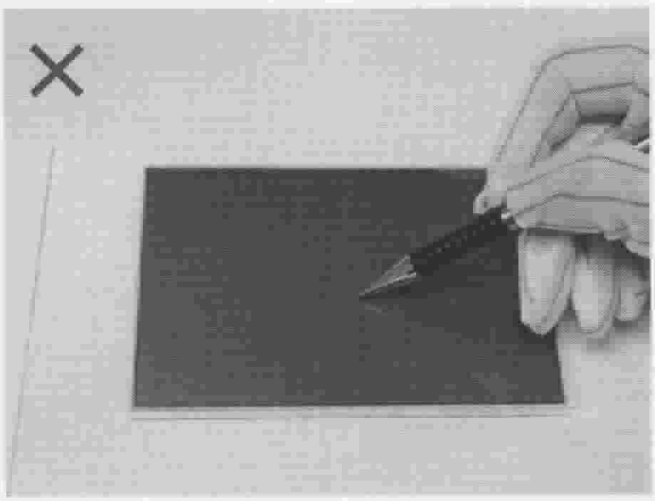
Incorrect handling



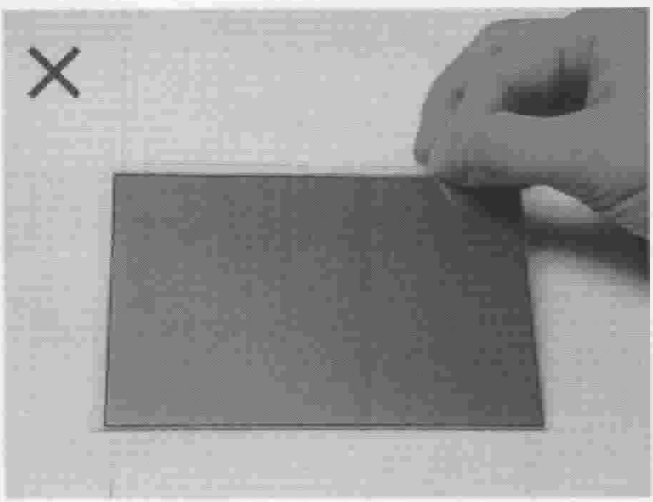
Please don't put one on another LCD.



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.