

NAN YA PLASTICS CORPORATION

SPECIFICATION OF
LCD MODULE
PRODUCT NO.: LMBFAH410J1CD_

SPEC. NO.: LM410-1A-

CUSTOMER
APPROVED BY
DATE:

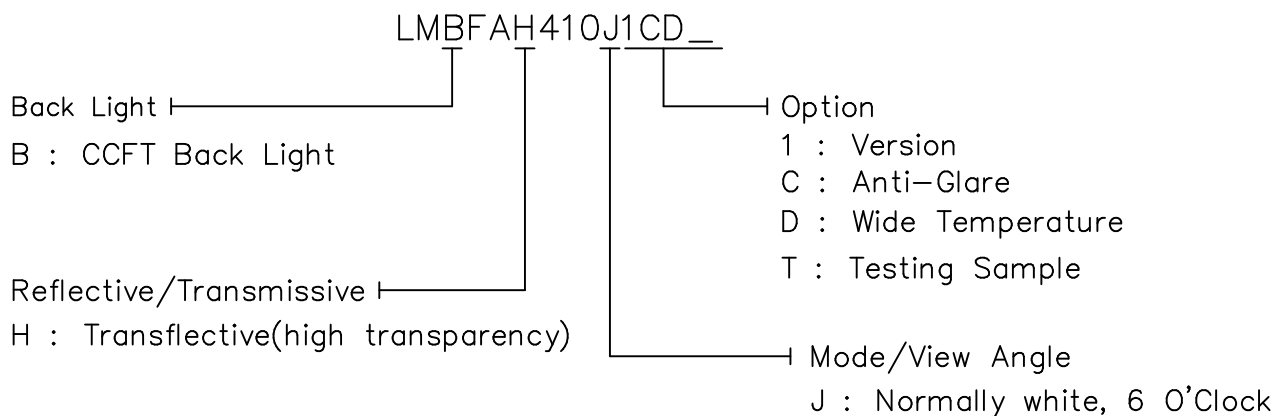
LCD DEPARTMENT
ELECTRONIC MATERIALS DIVISION
NAN YA PLASTICS CORPORATION
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EDITED ON : JUNE.12.2006

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

1. MECHANICAL DATA

NO	ITEM	CONTENTS	UNIT
1	Product No.	LMBFAH410J1CD_	-
2	Module Size	159.4(W) X 101.0(H) X MAX11.0(D)	mm
3	Dot Size	0.47 (W) x 0.47 (H)	mm
4	Dot Pitch	0.5 (W) x 0.5 (H)	mm
5	Number of Dots	240 (W) x 128 (H)	Dot
6	Duty	1/128	-
7	LCD Display Mode	FSTN: Normally White / Positive Image	-
8	Rear Polarizer	Transflective(high transparency)	-
9	Viewing Direction	6	O'clock
10	Backlight	CCFL	-
11	Controller	AX6963	-
12	DC/DC Converter	Excluded	-
13	Weight	169 (approx.)	g



3. ELECTRICAL CHARACTERISTICS

ITEM		SYMBOL	CONDITION		MIN.	TYP.	MAX.	UNIT
Power Supply for Logic		VDD-VSS	-		4.5	5.0	5.5	V
Recommended LC Driving Voltage		VDD-VO	Duty=1/128	-20°C	18.6	18.9	19.2	V
				0°C	17.0	17.3	17.6	
				25°C	16.0	16.3	16.6	
				50°C	15.1	15.4	15.7	
				70°C	14.6	14.9	15.2	
Input Voltage		VIH	H level		0.8VDD	-	VDD	V
		VIL	L level		0	-	0.2VDD	V
Power Supply Current		IDD	FLM = 70 Hz VDD = 5.0 V VDD-VO = 16.3V		-	11	17	mA
		IEE	PATTERN : <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>		-	2.2	3.3	mA
LCM	Surface Luminance	L	CXA-L10L Vin=10.5V IL=5mA	All On	-	50	100	cd/m ²
				All Off	200	250	-	

3-2.ELECTRICAL CHARACTERISTICS OF BACKLIGHT

Used CCFL Rating

Temp.=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Lamp voltage	V _L	-	337	-	Vrms	-
Lamp current	I _L	4.0	5.0	6.0	mArms	-
Lamp power consumption	P _L	-	1.93	-	W	(*1)
Starting voltage	V _s	-	-	940	Vrms	At 25°C (*3)
		-	-	1230	Vrms	At 0°C (*3)
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) Start-up Voltage means the lowest voltage (after output capacitor) at lighting on stable time under darkness environment (under 0.1 lux).

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 : MAX.44 (L)mm x MAX. 21(W)mm x MAX. 18(H)mm

3-3-2 PIN ASSIGNMENTS

INPUT (CN1) CONNECTOR :

OUTPUT (CN2) CONNECTOR :

NO.	FUNCTION
1	VIN
2	GND

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	-	10.5	-	V	
Tube Current	IL	-	5	-	mA	

4.OPTICAL CHARACTERISTICS

AT Vop

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.
H	J	2	3	2.8	4	3.5	5	2	3	1.4	2	-	F: 40 R: 25	-	±30
Note		NOTE 6										NOTE 5			

Note:

H : Transflective(high transparency)

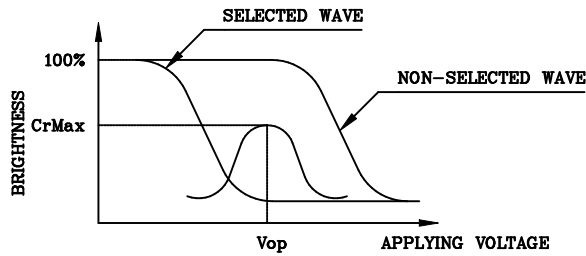
J: Normally White , 6 O'clock

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

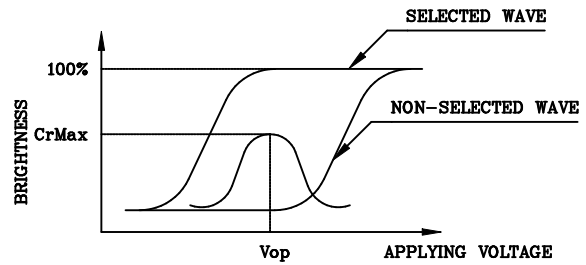
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	NOTE
Response Time (rise)	Tr	-20℃	2500	3200	4800	ms	NOTE 2
		0℃	400	500	750		
		25℃	145	180	270		
		50℃	95	120	180		
		70℃	55	70	100		
Response Time (fall)	Tf	-20℃	2800	3600	5400	ms	NOTE 2
		0℃	560	700	1000		
		25℃	175	220	330		
		50℃	40	50	75		
		70℃	32	40	60		

(NOTE 1)

Definition of Operation Voltage(Vop)



(positive type)



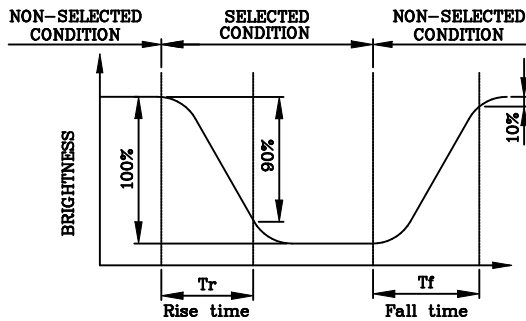
(negative type)

*Conditions

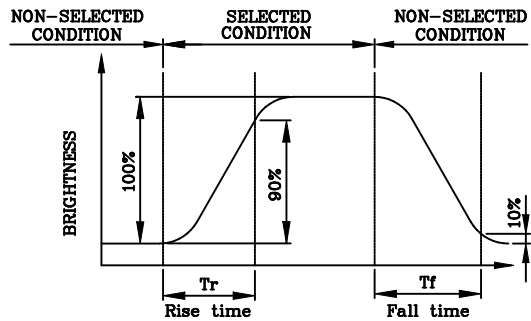
Viewing Angle : 0
Frame Frequency : 70Hz
Applying Waveform : 1/N duty 1/a bias

(NOTE 2)

Definition of Response Time(Tr,Tf)



(positive type)



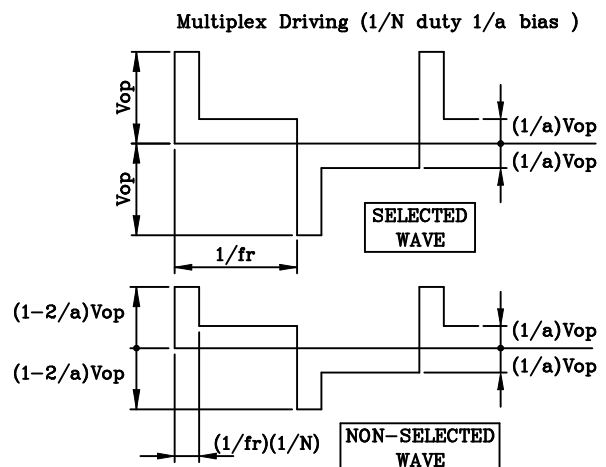
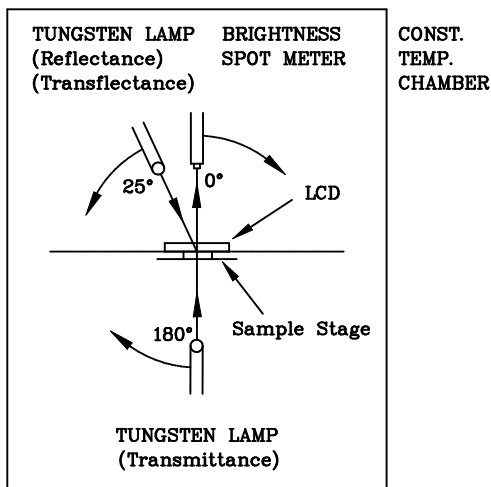
(negative type)

*Conditions

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

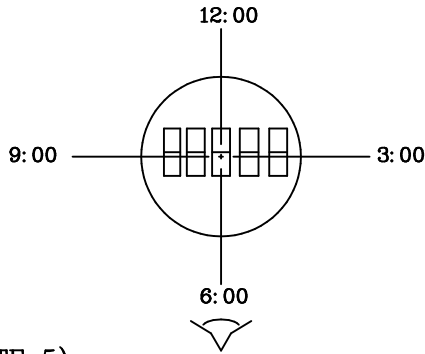
(NOTE 3)

Description of Measuring Equipment and Driving Waveforms



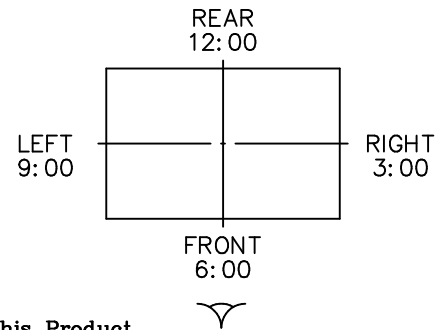
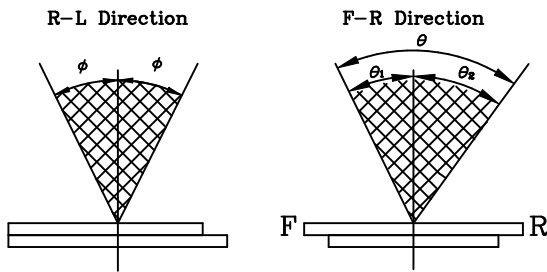
(NOTE 4)

Definition of Viewing Direction



(NOTE 5)

Definition of Viewing Angle



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

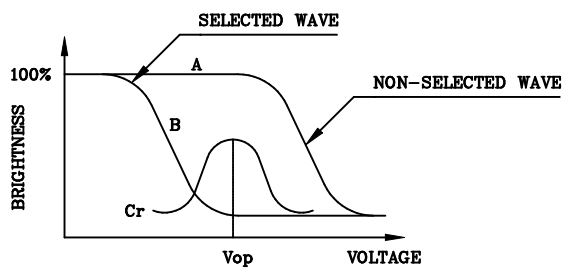
$$\theta = \theta_1 + \theta_2$$

*Conditions

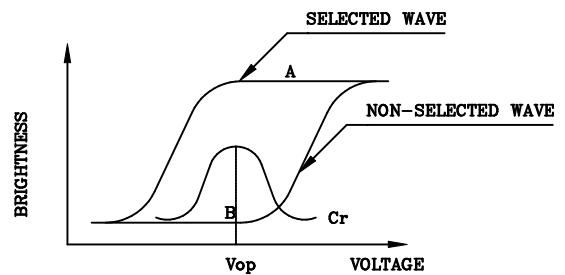
Operating Voltage : V_{op}
 Frame Frequency : 70Hz
 Applying Waveform : 1/N duty 1/a bias
 Contrast Ratio : larger than 2

(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

6. INTERNAL PIN CONNECTION

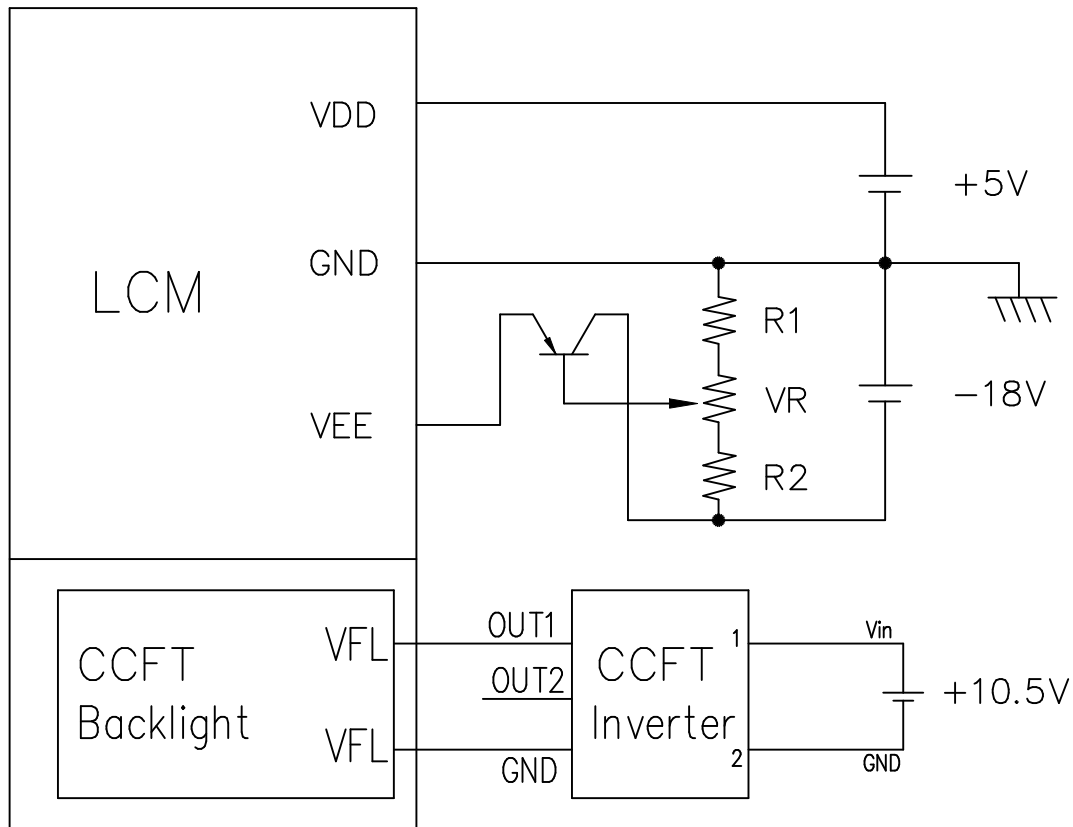
CN1:

PinNo.	Symbol	Level	Function
1	V _{SS}	—	GROUND(0V)
2	V _{DD}	—	POWER SUPPLY FOR LOGIC CIRCUIT(+5V)
3	V _O	—	POWER SUPPLY FOR LCD DRIVING(-V)
4	C/D	H/L	CONTROL DATA / DISPLAY DATA
5	/WR	L	WRITE
6	/RD	L	READ
7	DB0	H/L	DISPLAY DATA
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	/CS	L	CHIP SELECT
16	/RST	L	RESET
17	VEE	—	POWER SUPPLY FOR LCD DRIVE(-17V)
18	D.OFF	—	NC FOR ON,GND FOR OFF
19	FS	H/L	FONT SELECT V _{DD} : 6X8 PIXELS/CHARACTER V _{SS} : 8X8 PIXELS/CHARACTER
20	RV	—	Hardware Reverse

CN2 : M63M83-04(MITSUMI) OR COMPATIBLE

PIN NO	SYMBOL	LEVEL	FUNCTION
1	GND	—	CFL GND
2	NC	—	NO CONNECTION
3	NC	—	NO CONNECTION
4	H.V	—	POWER SUPPLY FOR CFL

7. POWER SUPPLY



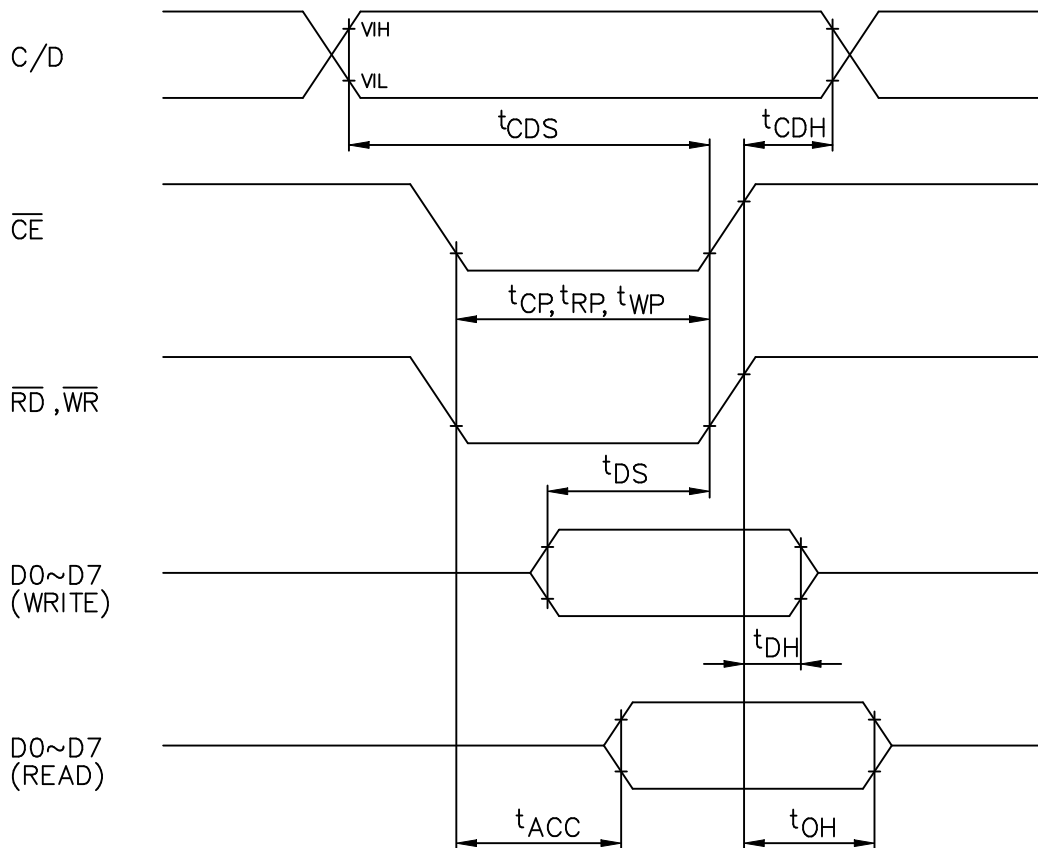
1. $R1 + VR + R2 = 10K \sim 20K$
2. Recommended CCFL Inverter : TDK CXA-L10L
 @ $V_{in} = 10.5V$

8. TIMING CHARACTERISTICS

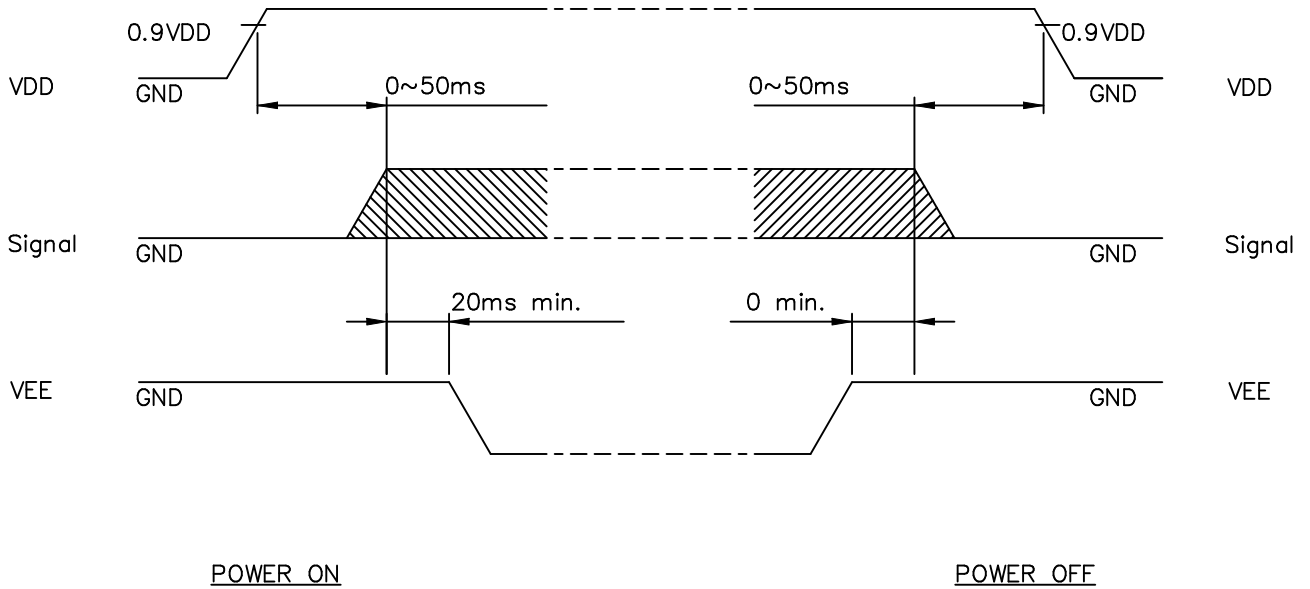
8-1 INTERFACE TIMING

@VDD = 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

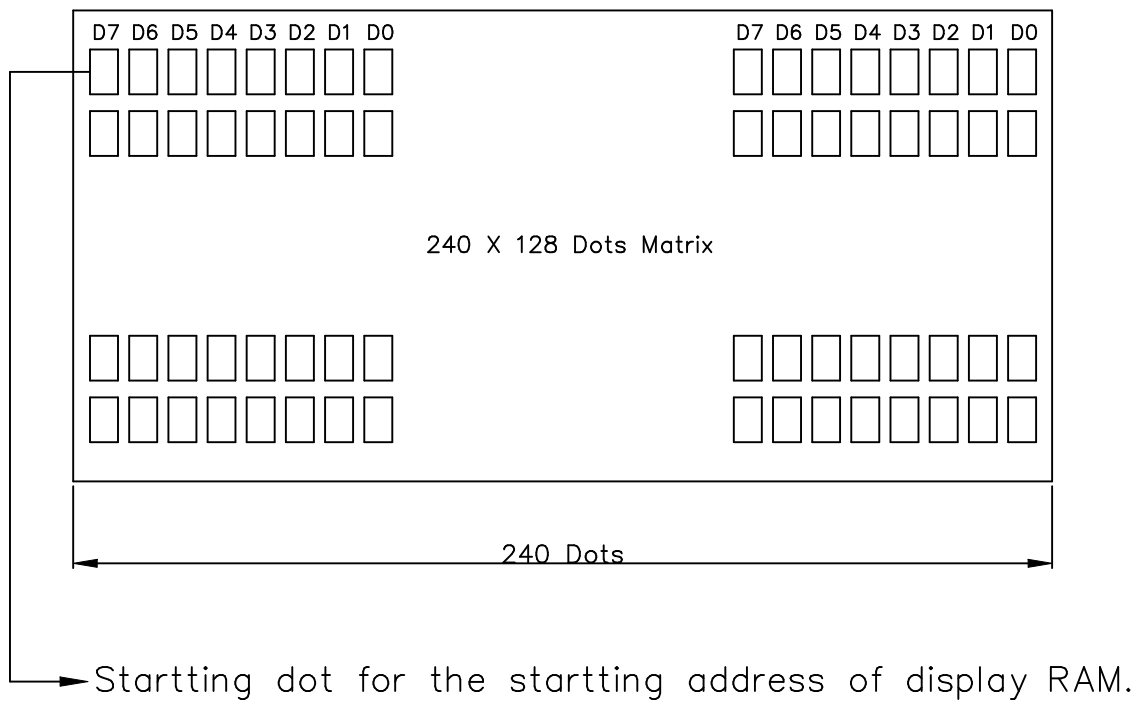


8-2. POWER ON/OFF TIMING



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

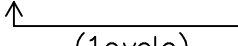
8-3 DISPLAY PATTERN



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

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	$-20^{\circ}\text{C}, 30\text{min} \rightarrow 70^{\circ}\text{C}, 30\text{min}$  (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

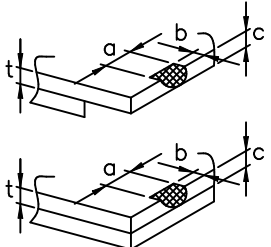
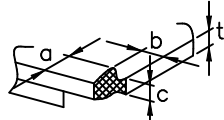
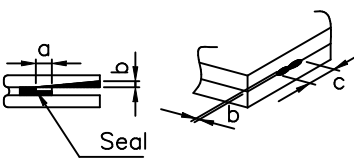
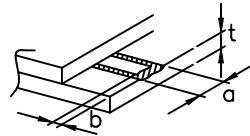
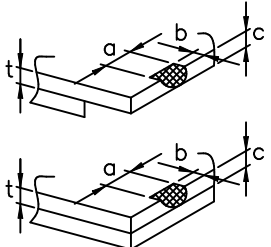
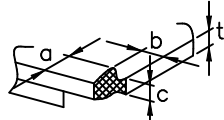
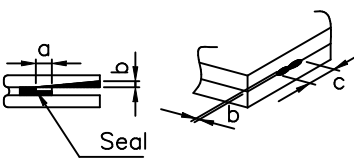
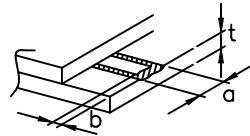
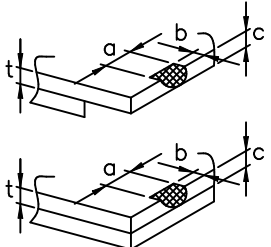
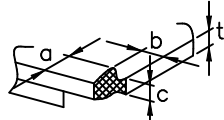
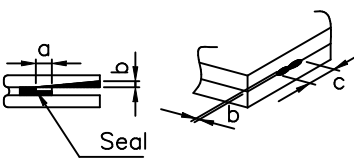
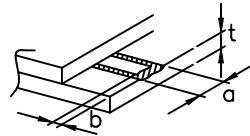
4-2 Inspection Standard

	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		

5-2 External Appearance Defect

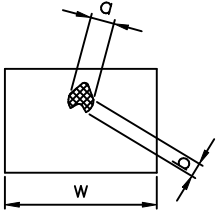
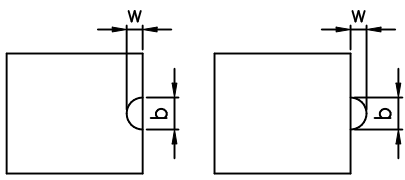
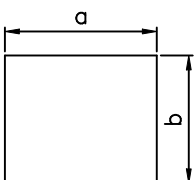
NO.	Item	Criterion																		
1.	Black spots, foreign matter, and white spots (Including light leakage due to pinholes of polarizing plates, etc.)	<p>(1)-1-Spots(At non lighting condition)</p> <table border="1" data-bbox="730 477 1377 763"> <thead> <tr> <th>Average Diameter(mm):D</th> <th>Number 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 1019 1473 1303"> <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
Width(mm): W	Length(mm):L	Number of pieces permitted																								
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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> </tr> <tr> <td data-bbox="730 524 991 568">$D \leq 0.3$</td> <td data-bbox="991 524 1246 568">Ignore</td> </tr> <tr> <td data-bbox="730 568 991 667">$0.3 < D$</td> <td data-bbox="991 568 1246 667">0</td> </tr> </table> <p data-bbox="1246 383 1498 613">Average diameter = (Long diameter + Short diameter)/2</p> <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	$D \leq 0.3$	Ignore	$0.3 < D$	0					
Average Diameter (mm): D	Number of pieces permitted												
$D \leq 0.3$	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 1167"> <p>(1) General crack</p>  </td> <td data-bbox="1086 779 1498 1167"> <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 1167 1086 1361"> <p>(2) Corner crack</p>  </td> <td data-bbox="1086 1167 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 1630"> <p>(3) Seal portion crack</p>  </td> <td data-bbox="1086 1361 1498 1630"> <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 1630 1086 1877"> <p>(4) ITO Pin crack</p>  </td> <td data-bbox="1086 1630 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 colspan="2" 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

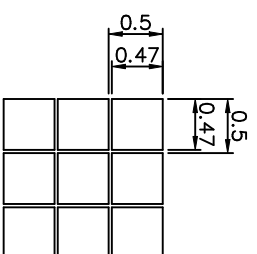
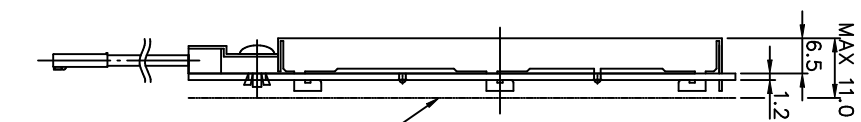
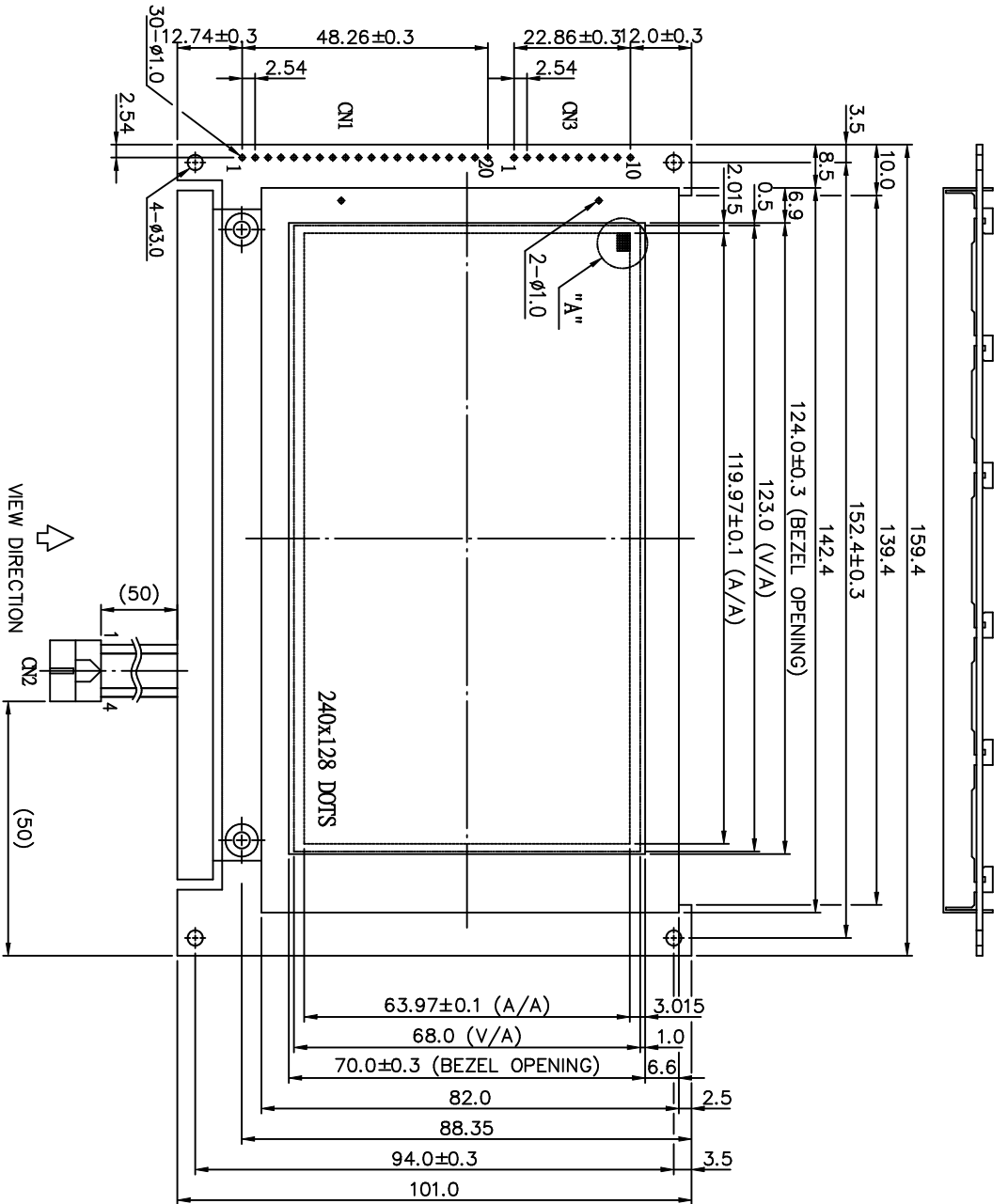
- 1.Avoid static electricity which can damage the CMOS LSI.
- 2.Do not remove the panel or frame from the module.
- 3.The polarizing plate of the display is very fragile. So, please handle it very carefully.
- 4.Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of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



"A" DETAIL
S = 20:1

- NOTE:
1. RESOLUTION : 240x128 DOTS
 2. BACKLIGHT : CCFL (WHITE)
 3. GLASS THICKNESS : 0.7mm
 4. FRAME MATERIAL : SECC (t=0.5)

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)



製品圖

IMBF4H41011CD

NAME	DATE	THIRD ANGLE P
APPROVE		
CHECK		
DESIGN	95.04.11	SCALE UNIT
DRAWN	95.04.11	1/1 mm

Pin No	Symbol	Function
1	VSS	GROUND (0V)
2	VDD	POWER SUPPLY FOR LOGIC CIRCUIT (+5V)
3	VO	POWER SUPPLY FOR LCD DRIVE
4	C/D	CONTROL DATA / DISPLAY DATA
5	/WR	WRITES
6	/RD	READS
7	DB0	
8	DB1	
9	DB2	
10	DB3	DISPLAY DATA
11	DB4	
12	DB5	
13	DB6	
14	DB7	
15	CS	CHIP SELECT

Pin No	Symbol	Function
16	RES	RESET
17	VEE	POWER SUPPLY FOR LCD DRIVE
18	D OFF	NO/DISPLAY (AND) DISPLAY OFF
19	FS	FONT SELECT
20	RV	Hardware Reverse

CN2 : M63M83-04 (MITSUBISHI)

Pin No	Symbol	Function
1	GND	CTL (GND)
2	N/C	-
3	N/C	-
4	H/V	POWER SUPPLY FOR CTL

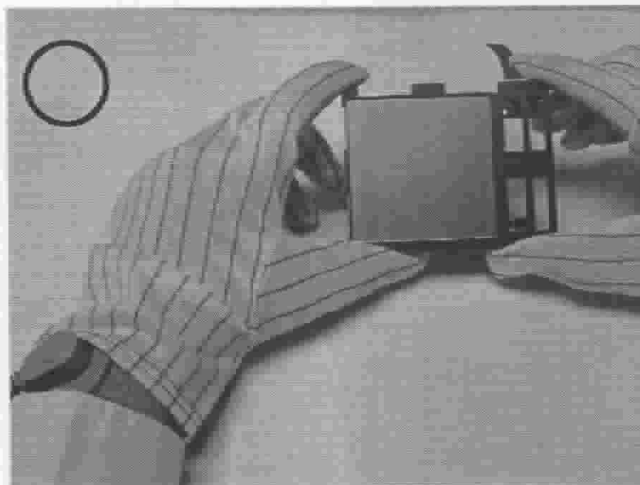
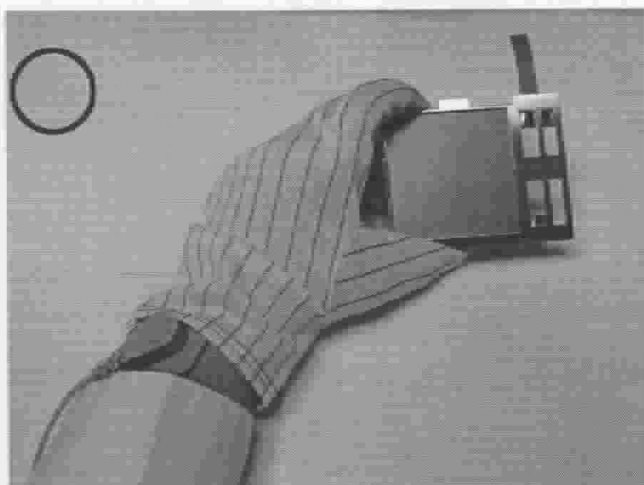
REV. NO.	DESCRIPTION	DATE	DESIGN	CHECK	APPROVE	DWG. NO.
△						M4110A11A

THE NOTES OF LCM USING

LCM is easy to damage.

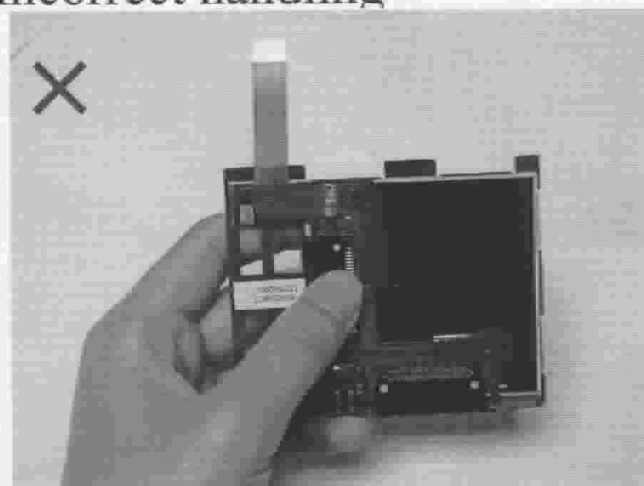
Please follow the notes as bellows, and be careful of handling!

Correct handling

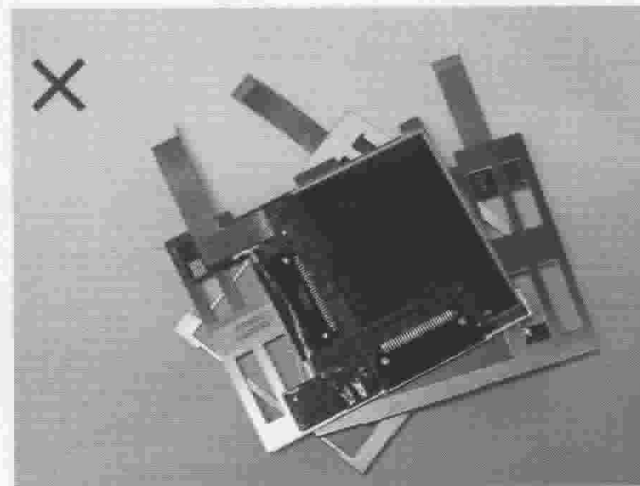


As above picture, please handle with glove by LCM edges and full EOS/ESD protection.

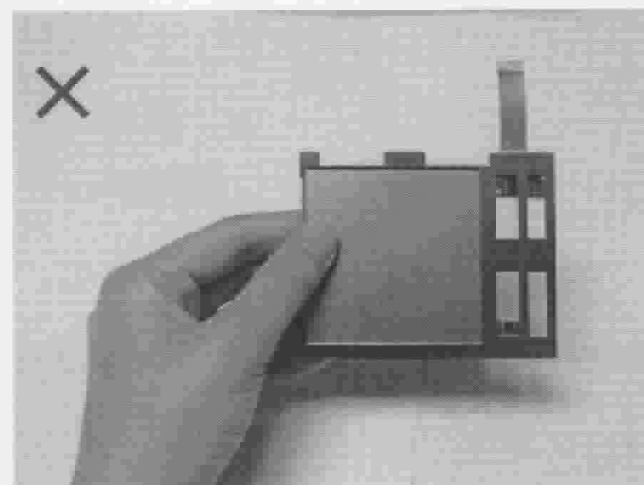
Incorrect handling



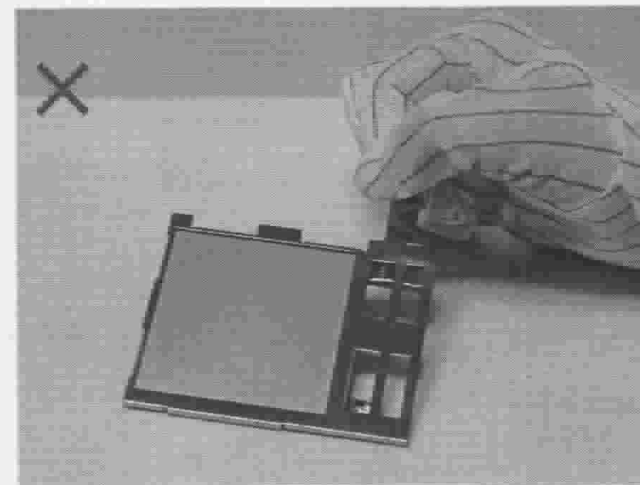
Please don't touch IC directly.



Please don't put one on another LCM.



Please don't hold the surface of LCM.



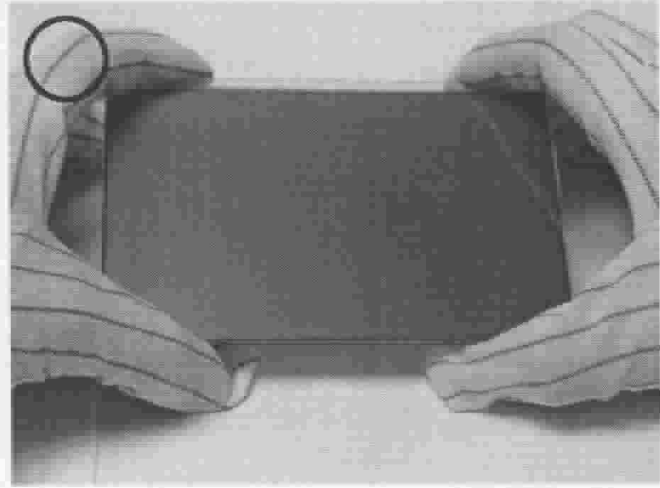
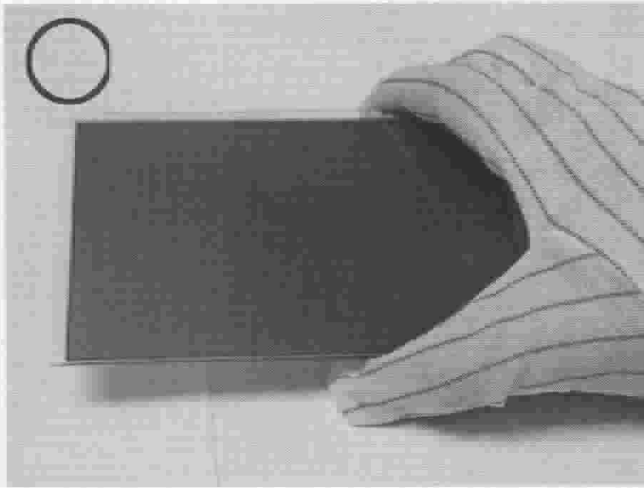
Please don't stretch interface of output.

THE NOTES OF LCD USING

LCD is easy damage.

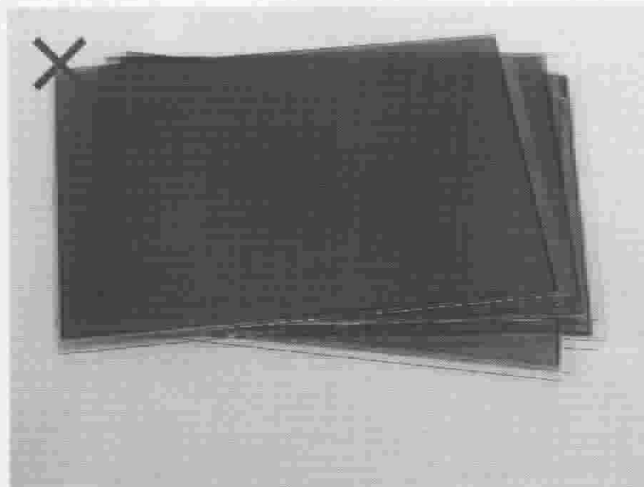
Please follow notes as bellows, and be careful of handling!

Correct handling

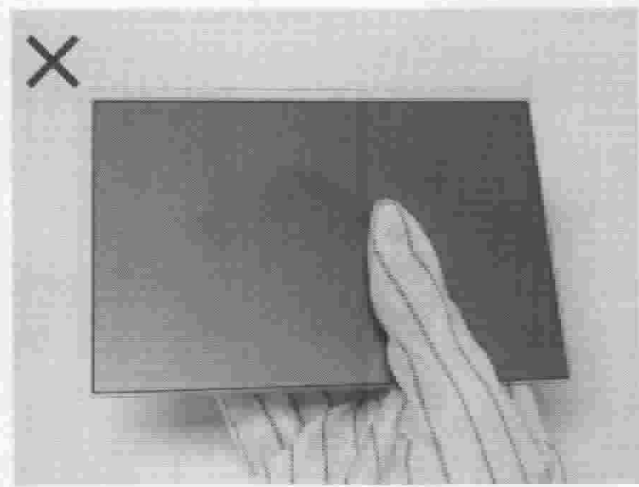


As above picture, please handle with glove by LCD edges and full EOS/ESD protection.

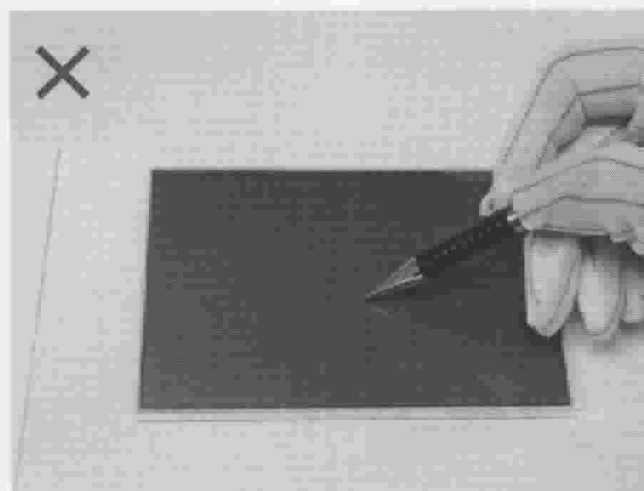
Incorrect handling



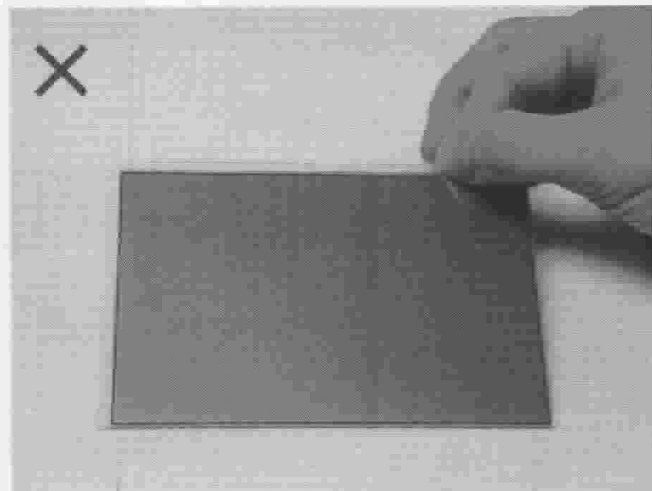
Please don't put one on another LCD.



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.

