

# NAN YA PLASTICS CORPORATION

SPECIFICATION OF  
LCD MODULE  
PRODUCT NO.: LMC75S141C3DLS

SPEC. NO.: LM141-3BB-△

CUSTOMER
APPROVED BY
DATE:

LCD DEPARTMENT  
ELECTRONIC MATERIALS DIVISION  
NAN YA PLASTICS CORPORATION  
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EDITED ON : NOV.28, 2007

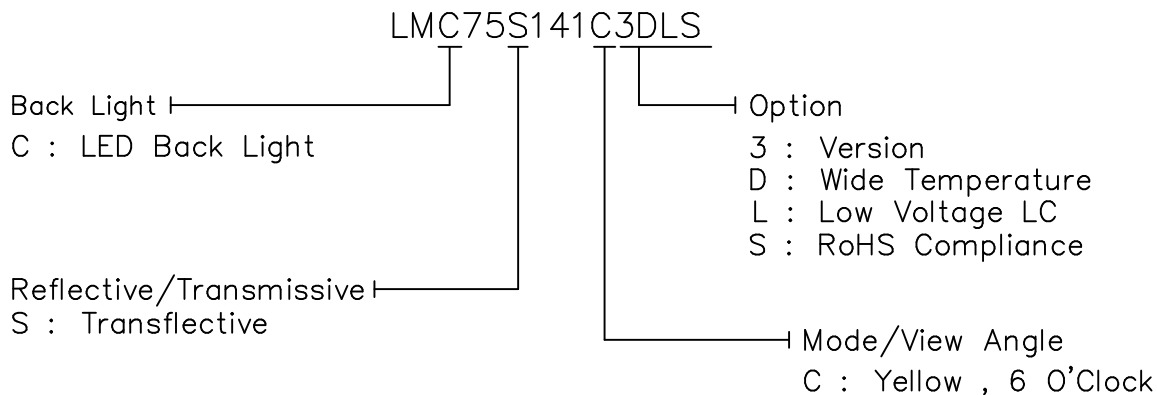
Q.C. DEPT.	DESIGN MANAGER	DESIGN CHECK	DESIGNER
			J.P Weng



# 1. MECHANICAL DATA

NO	ITEM	CONTENTS	UNIT
1	Product No.	LMC75S141C3DLS	-
2	Module Size	75.0 (W) x 52.7 (H) x MAX 9.5 (D)	mm
3	Dot Size	0.40 (W) x 0.40 (H)	mm
4	Dot Pitch	0.43 (W) x 0.43 (H)	mm
5	Number of Dots	128 (W) x 64 (H)	Dot
6	Duty	1/64	-
7	LCD Display Mode	STN, Yellow Mode / Positive Image	-
8	Rear Polarizer	Transflective Type	-
9	Viewing Direction	6	O'clock
10	Backlight	LED (White)	-
11	DC/DC Converter	Included	-
12	Contorller IC	Neotec IC : NT7108	-
13	Weight	35.6 (Approx.)	g

Note :



**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.

REV/DATE	R0/ 10.08,07'					BY J.P Weng
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## 2. ABSOLUTE MAXIMUM RATINGS

### (1) ELECTRICAL ABSOLUTE RATINGS

VSS=0V Standard

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

Note 1 LCM should be grounded during handling LCM.

### (2) ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

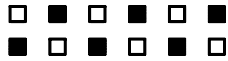
ITEM	WIDE TEMP.			
	OPERATING		STORAGE	
	MIN.	MAX.	MIN.	MAX.
Ambient Temperature	-20	70	-40	80
Humidity (Without Condensation)	Note 2,4		Note 3,4	

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	25°C	4.5	5.0	5.5	V	
Input Voltage	VIH	H level	0.7VDD	-	VDD	V	
	VIO	L level	0	-	0.3VDD	V	
Recommended LC Driving Voltage (Low Voltage LC and Wide Temp. LCM)	VDD-VO	Duty= 1/64	-20°C	9.8	10.1	10.4	V
			0°C	8.7	9.0	9.3	
			25°C	8.4	8.7	9.0	
			50°C	7.9	8.2	8.5	
			70°C	7.5	7.8	8.1	
Power Supply Current	IDD	Ta=25°C VDD-VO=8.7 V PATTERN : 	-	1.5	2.0	mA	
Surface Lumiance	Ta=25°C VAK=5V	ALL ON	-	1.5	-	cd/m <sup>2</sup>	
		ALL OFF	2	6.5	-		

## 4.OPTICAL CHARACTERISTICS

AT Vop

ITEM		Cr(Contrast Ratio)										$\theta$ (Viewing Angle)		$\theta$ (Viewing Angle)	
		-20°C		0°C		25°C		50°C		70°C		25°C		25°C	
		MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.	MIN.	TYP.
S	C	2	4.5	3.5	5.5	5	6	3.5	5.5	2	5	-	67	-	26-45
NOTE		NOTE 3,6										NOTE 3,5			

Note:

S : Transflective(Normal)

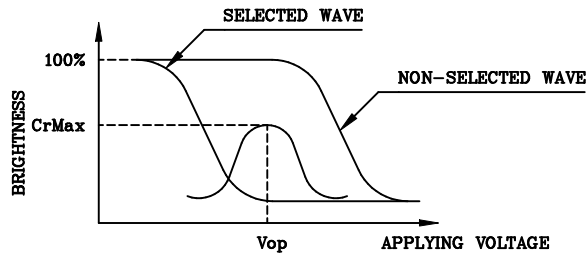
C : YELLOW MODE, 6 O'CLOCK

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

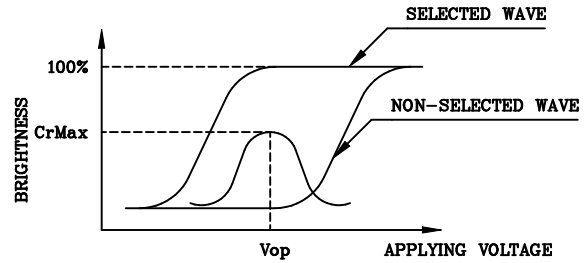
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	NOTE
Response Time (rise)	Tr	-20°C	5500	11000	16500	ms	NOTE 2,3
		0°C	800	1600	2400		
		25°C	200	400	600		
		50°C	80	160	240		
		70°C	55	110	165		
Response Time (fall)	Tf	-20°C	3500	7000	10500	ms	NOTE 2,3
		0°C	400	800	1200		
		25°C	75	150	225		
		50°C	40	80	120		
		70°C	35	70	105		

(NOTE 1)

Definition of Operation Voltage(Vop)



(positive type)



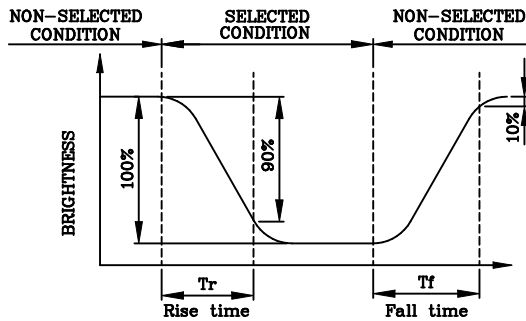
(negative type)

\*Conditions

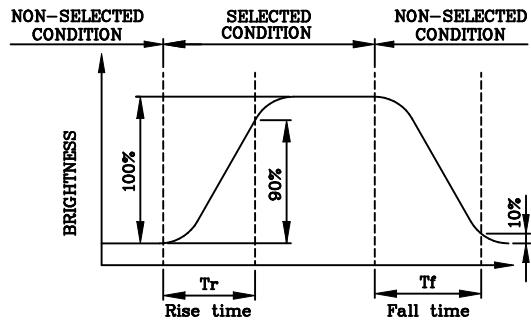
Viewing Angle : 0  
Frame Frequency : 70Hz  
Applying Waveform : 1/N duty 1/a bias

(NOTE 2)

Definition of Response Time(Tr,Tf)



(positive type)



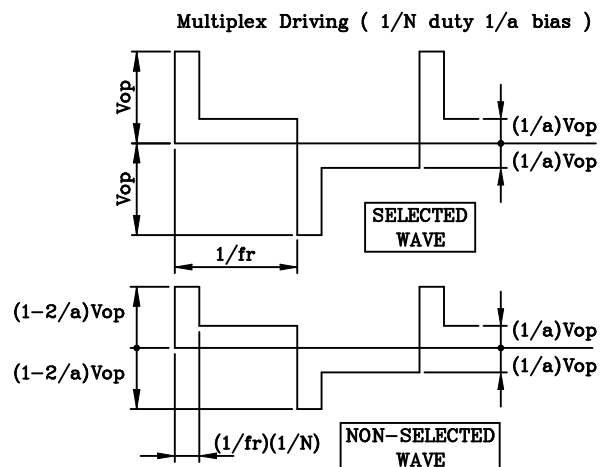
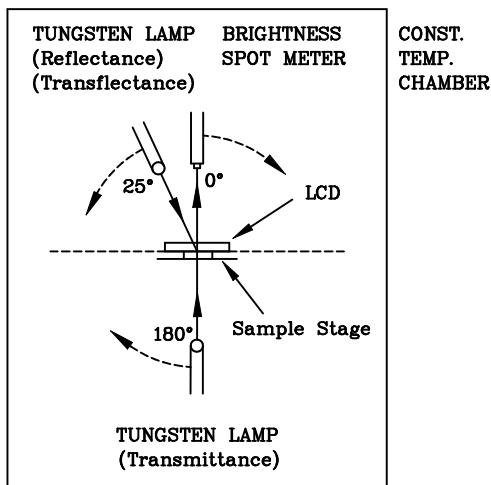
(negative type)

\*Conditions

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

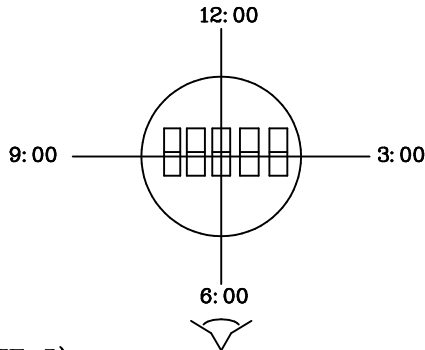
(NOTE 3)

Description of Measuring Equipment and Driving Waveforms



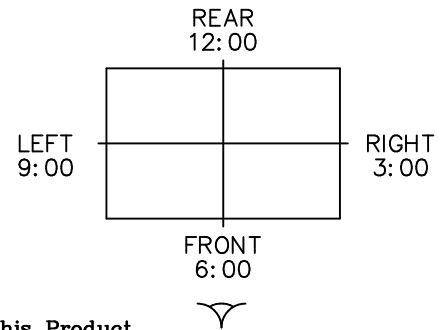
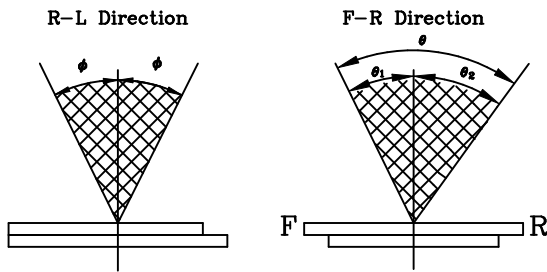
(NOTE 4)

Definition of Viewing Direction



(NOTE 5)

Definition of Viewing Angle



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

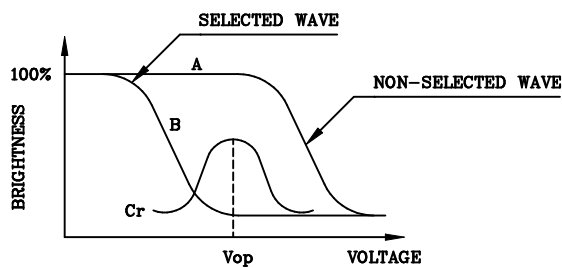
$$\theta = \theta_1 + \theta_2$$

\*Conditions

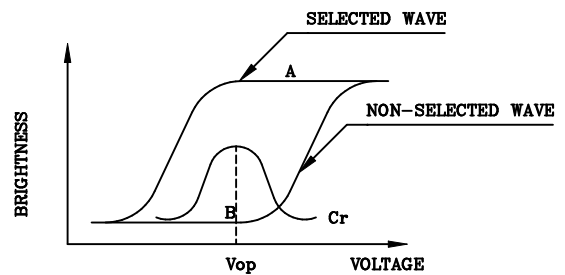
Operating Voltage :  $V_{op}$   
 Frame Frequency : 70Hz  
 Applying Waveform : 1/N duty 1/a bias  
 Contrast Ratio : larger than 2

(NOTE 6)

Definition of Contrast Ratio (Cr)



(positive type)



(negative type)

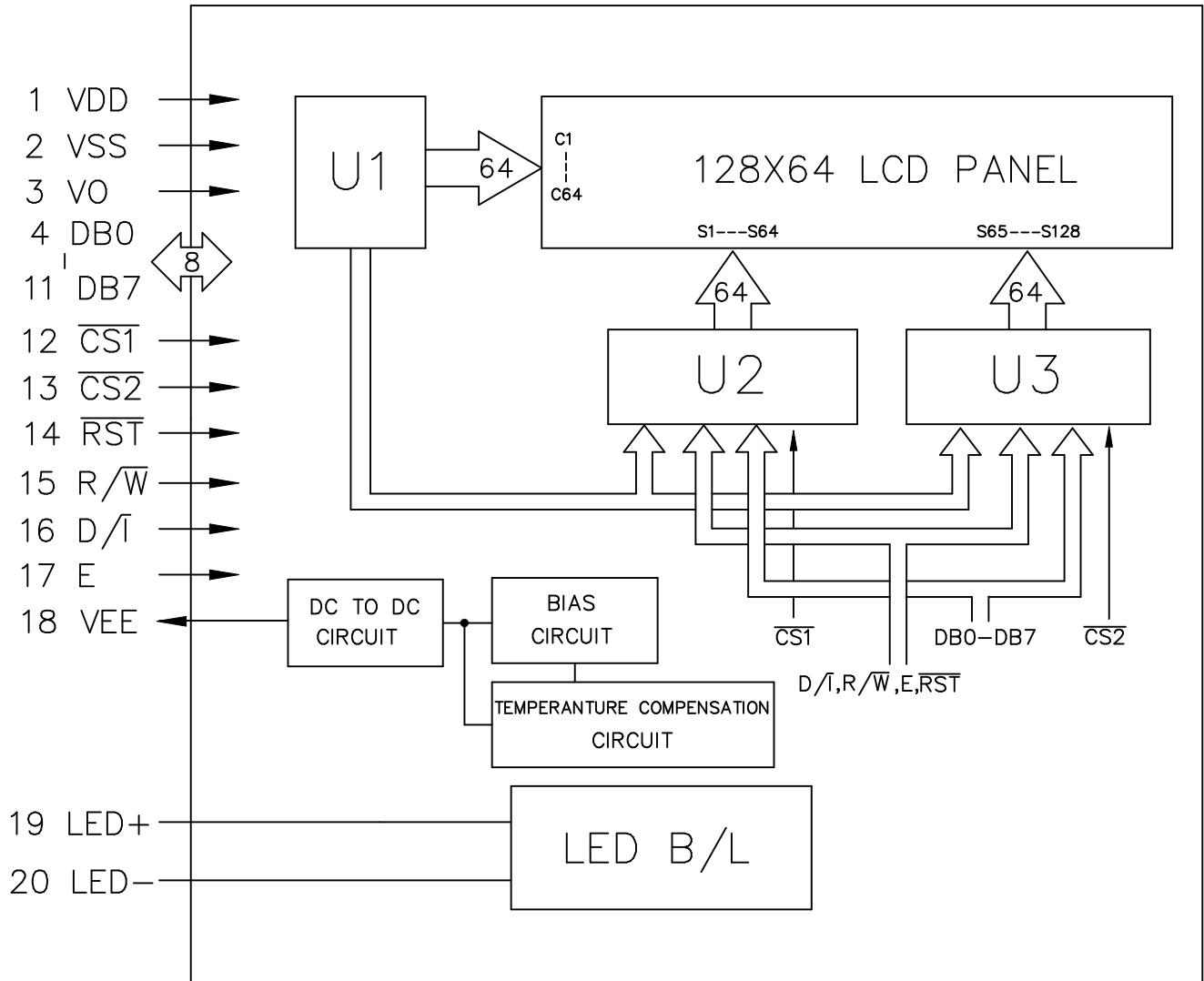
$$\text{Contrast Ratio : } Cr = A/B$$

\*Conditions

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



# 5. BLOCK DIAGRAM

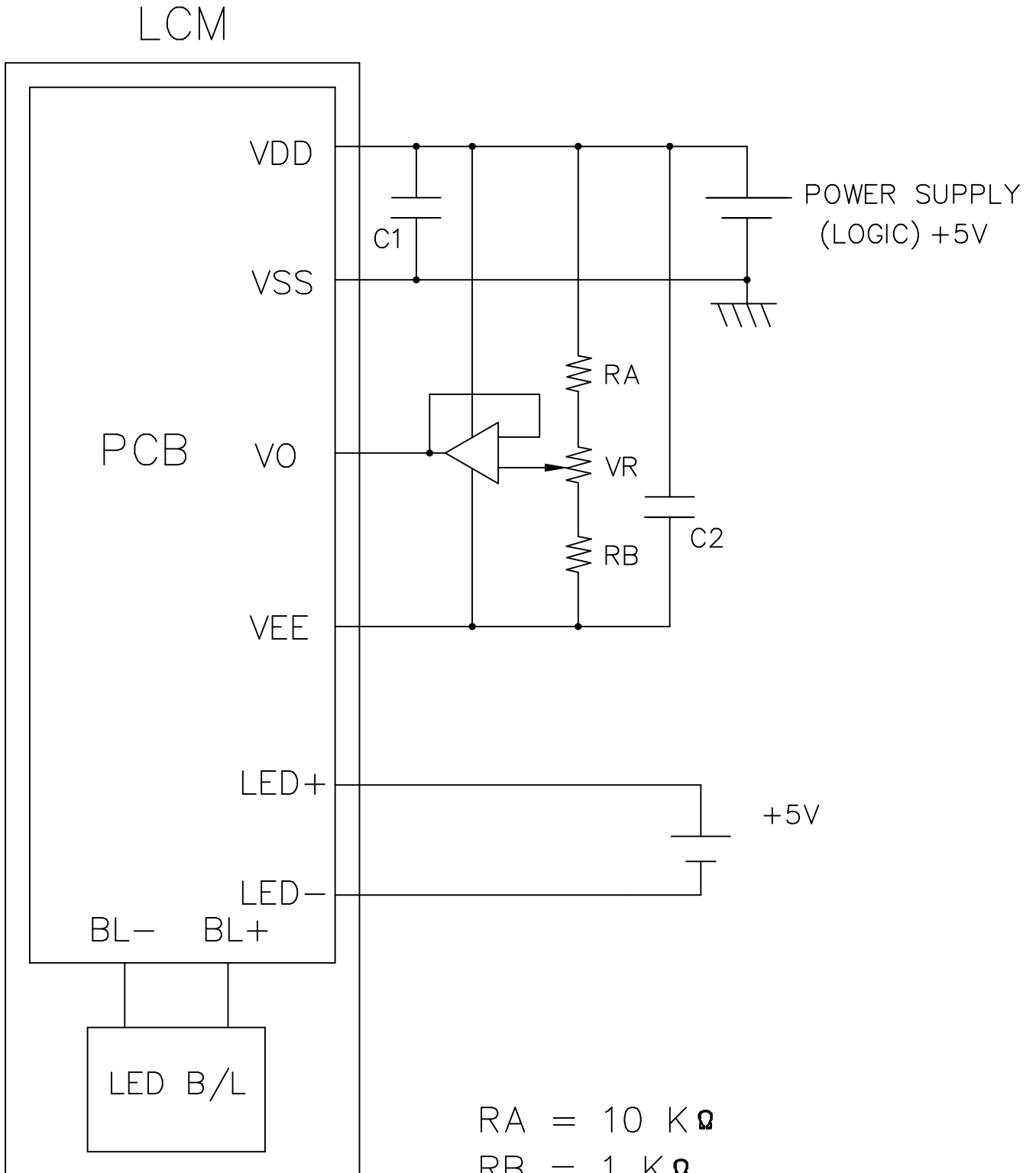


## 6. INTERNAL PIN CONNECTION

Pitch 2.54mm (1x20)

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	VDD	-	POWER SUPPLY FOR LOGIC CIRCUIT
2	VSS	-	GND
3	V <sub>o</sub>	-	OPERATING VOLTAGE FOR LCD DRIVING
4	DB0	H/L	DATA BIT 0
5	DB1	H/L	DATA BIT 1
6	DB2	H/L	DATA BIT 2
7	DB3	H/L	DATA BIT 3
8	DB4	H/L	DATA BIT 4
9	DB5	H/L	DATA BIT 5
10	DB6	H/L	DATA BIT 6
11	DB7	H/L	DATA BIT 7
12	$\overline{CS1}$	L	CHIP SELECT FOR IC1
13	$\overline{CS2}$	L	CHIP SELECT FOR IC2
14	$\overline{RST}$	L	RESET
15	R/ $\overline{W}$	H/L	H: DATA READ (LCD → MPU) ; L: DATA WRITE (LCD → MPU)
16	D/ $\overline{I}$	H/L	H: DATA INPUT ; L: INSTRUCTION CODE INPUT
17	E	H,H→L	ENABLE SIGNAL
18	VEE	-	POWER SUPPLY FOR LCD DRIVING
19	LED(+)	-	LED BACKLIGHT
20	LED(-)	-	LED BACKLIGHT

# 7. POWER SUPPLY



$RA = 10\text{ K}\Omega$

$RB = 1\text{ K}\Omega$

$VR = 10\text{ K}\Omega(\text{VARIABLE})$

$C1, C2 = 10\ \mu\text{F}$

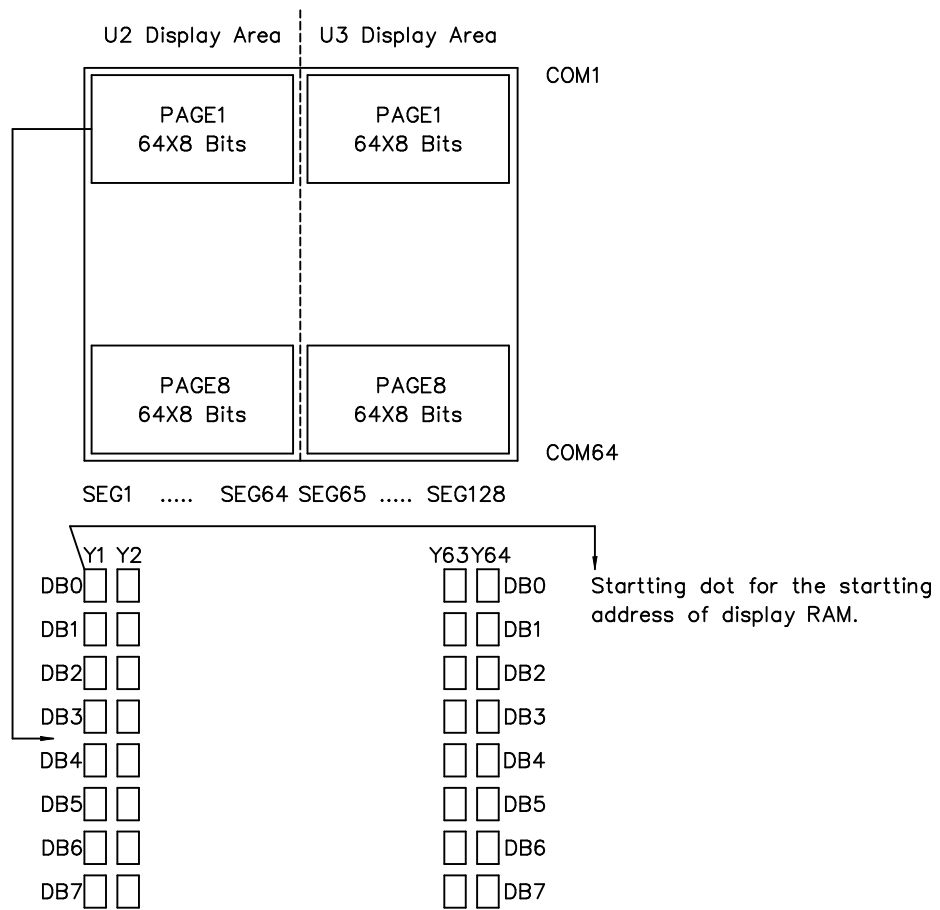
# 8. TIMING CHARACTERISTICS

## 8-1 INTERFACE TIMING

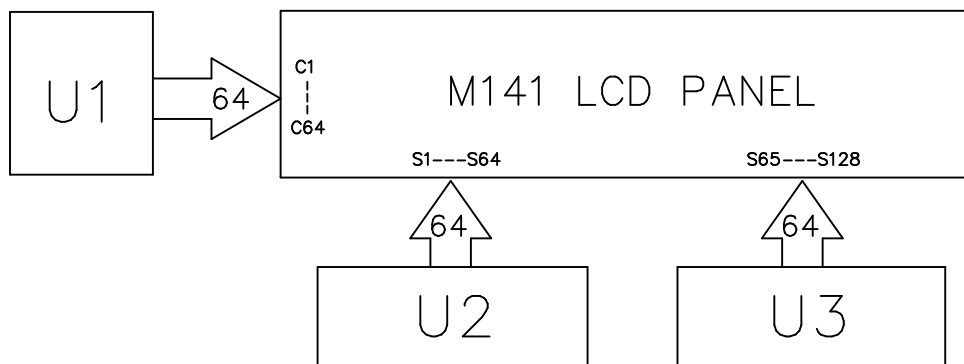
For 68 MPU Interface & Commands

Refer Neotec NT7108 & NT7107 IC Data Sheet

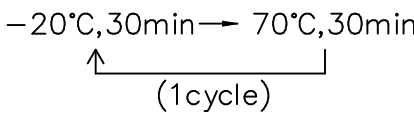
## 8-2 DISPLAY PATTERN



Each segment driver has 8 pages RAM , and each page has 64 x 8 bits RAM .  
DB0~DB7 are 8 bits transmitted data , where DB0 is LSB and DB7 is MSB .



## 9. 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

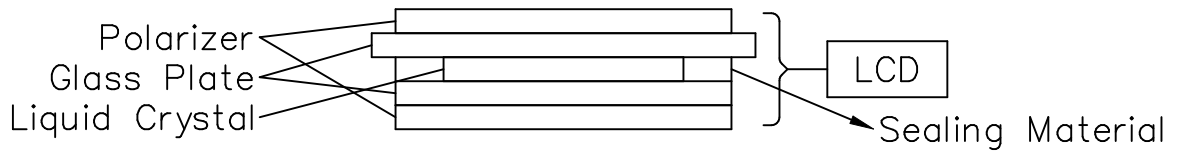
The NAN YA inspection provision provides outgoing inspection provision and its expected quality level based on our outgoing inspection of NAN YA LCD produces.

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 Provision

4-1 Inspection Method

MIL-STD-105E Level **II** Regular inspection

4-2 Inspection Standard

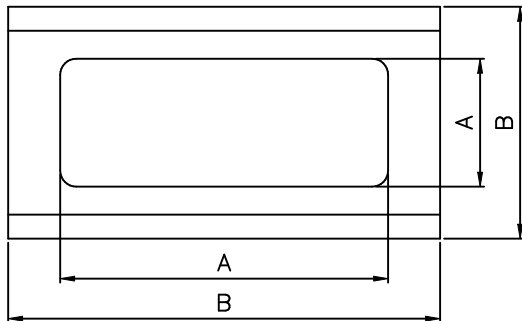
	Item		AQL(%)	Remarks
Major Defect	Dots	Opens Shorts Erroneous operation	0.4	faults which substantially lower the practicality and the initial purpose difficult to achieve.
	Solder appearance	Shorts Loose		
	Cracks	Display surface cracks		

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 specified.

Temperature  $20 \pm 15^{\circ}\text{C}$   
Humidity  $65 \pm 20\% \text{R.H.}$   
Pressure 860~1060hPa(mmbar)

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

Temperature  $20 \pm 15^{\circ}\text{C}$   
Humidity  $65 \pm 20\% \text{R.H.}$   
Pressure 860~1060hPa(mmbar)

5.Specification for quality check  
5-1 Electrical characteristics

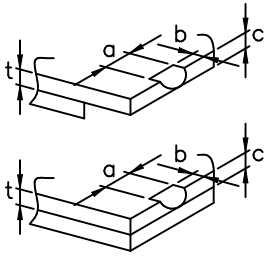
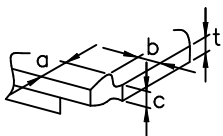
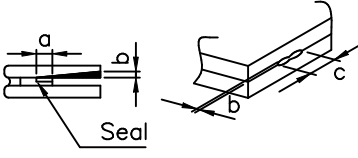
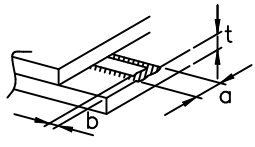
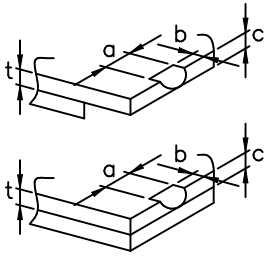
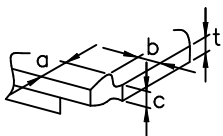
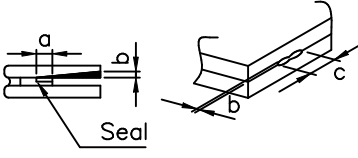
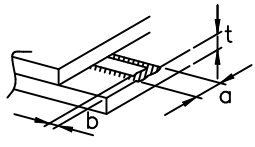
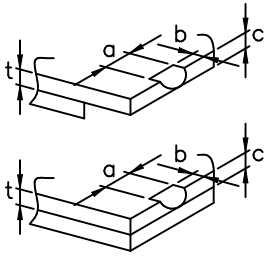
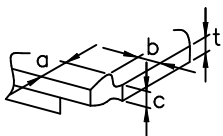
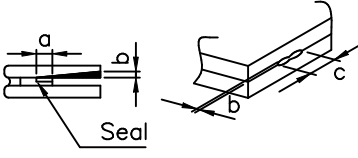
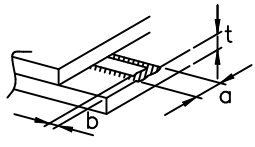
NO.	Item	Criterion
1.	Non operational	Fail
2.	Miss operating	Fail
3.	Missing dot	Fail
4.	Contrast irregular	Fail
5.	Response time	Within Specified value
6.	LED backlight turn on/off	Within Specified value



5-2 External Appearance Defect

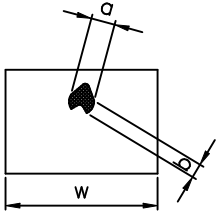
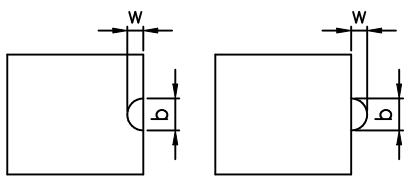
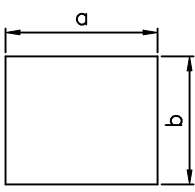
NO.	Item	Criterion																		
1.	Black spots, foreign matter, and white spots (Including light leakage due to pinholes of polarizing plates, etc.)	<p>(1)-1-Spots</p> <table border="1" data-bbox="711 477 1356 763"> <thead> <tr> <th>Average Diameter(mm):D</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td><math>D \leq 0.1</math></td> <td>Ignore</td> </tr> <tr> <td><math>0.1 &lt; D \leq 0.2</math></td> <td>5</td> </tr> <tr> <td><math>0.2 &lt; D \leq 0.3</math></td> <td>2</td> </tr> <tr> <td><math>0.3 &lt; D</math></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="711 1187 1356 1426"> <thead> <tr> <th>Average Diameter(mm):D</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td><math>D \leq 0.3</math></td> <td>Ignore</td> </tr> <tr> <td><math>0.3 &lt; D \leq 0.75</math></td> <td>5</td> </tr> <tr> <td><math>0.75 &lt; D</math></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="710 425 1452 705"> <thead> <tr> <th>Width(mm): W</th> <th>Length(mm): L</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td><math>W \leq 0.03</math></td> <td>Ignore</td> <td>Ignore</td> </tr> <tr> <td><math>0.03 &lt; W \leq 0.08</math></td> <td><math>L \leq 4</math></td> <td>2</td> </tr> <tr> <td><math>0.08 &lt; W \leq 0.1</math></td> <td><math>L \leq 1</math></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="710 1019 1452 1299"> <thead> <tr> <th>Width(mm): W</th> <th>Length(mm): L</th> <th>Number of pieces permitted</th> </tr> </thead> <tbody> <tr> <td><math>W \leq 0.03</math></td> <td>Ignore</td> <td>Ignore</td> </tr> <tr> <td><math>0.03 &lt; W \leq 0.08</math></td> <td><math>L \leq 3</math></td> <td>6</td> </tr> <tr> <td><math>0.08 &lt; W</math></td> <td><math>3 &lt; L</math></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																								
$W \leq 0.03$	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																								
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="710 376 1225 667"> <thead> <tr> <th data-bbox="710 376 970 521">Average Diameter (mm): D</th> <th data-bbox="970 376 1225 521">Number of pieces permitted</th> <th data-bbox="1225 376 1476 667" rowspan="2">Average diameter = (Long diameter + Short diameter)/2</th> </tr> </thead> <tbody> <tr> <td data-bbox="710 521 970 667">D ≤ 0.3 0.3 &lt; D</td> <td data-bbox="970 521 1225 667">Ignore 0</td> <td></td> </tr> </tbody> </table> <p data-bbox="710 683 1476 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 0.3 < D	Ignore 0					
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<p>5. Cracks</p>	<table border="1" data-bbox="662 779 1476 1964"> <tr> <td data-bbox="662 779 1066 1169"> <p>(1) General crack</p>  </td> <td data-bbox="1066 779 1476 1169"> <p>a ≤ 5 b ≤ 2 c ≤ 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="662 1169 1066 1361"> <p>(2) Corner crack</p>  </td> <td data-bbox="1066 1169 1476 1361"> <p>a ≤ 2.5 b ≤ 2.5 c ≤ t a + b ≤ 4</p> </td> </tr> <tr> <td data-bbox="662 1361 1066 1630"> <p>(3) Seal portion crack</p>  </td> <td data-bbox="1066 1361 1476 1630"> <p>a ≤ The seal width × 1/3 b ≤ t × 2/3 c ≤ 5</p> <p>The numbers of pieces are set at up to 5 pieces.</p> </td> </tr> <tr> <td data-bbox="662 1630 1066 1870"> <p>(4) ITO Pin crack</p>  </td> <td data-bbox="1066 1630 1476 1870"> <p>a ≤ 5 b ≤ 1/3 pin length c ≤ t</p> </td> </tr> <tr> <td data-bbox="662 1870 1066 1964"> <p>(5) Progressive cracks</p> </td> <td data-bbox="1066 1870 1476 1964"> <p>All taken to be unacceptable.</p> </td> </tr> </table>		<p>(1) General crack</p> 	<p>a ≤ 5 b ≤ 2 c ≤ 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 ≤ 2.5 b ≤ 2.5 c ≤ t a + b ≤ 4</p>	<p>(3) Seal portion crack</p> 	<p>a ≤ The seal width × 1/3 b ≤ t × 2/3 c ≤ 5</p> <p>The numbers of pieces are set at up to 5 pieces.</p>	<p>(4) ITO Pin crack</p> 	<p>a ≤ 5 b ≤ 1/3 pin length c ≤ t</p>	<p>(5) Progressive cracks</p>	<p>All taken to be unacceptable.</p>
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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 <math>\leq 0.2\text{mm}</math> 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 <math>\leq 0.2\text{mm}</math> The overall total is taken to be with in 10 units.</p>
3.	Thick and thin display	 <p>Taken to be within <math>\pm 1.5\%</math> 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

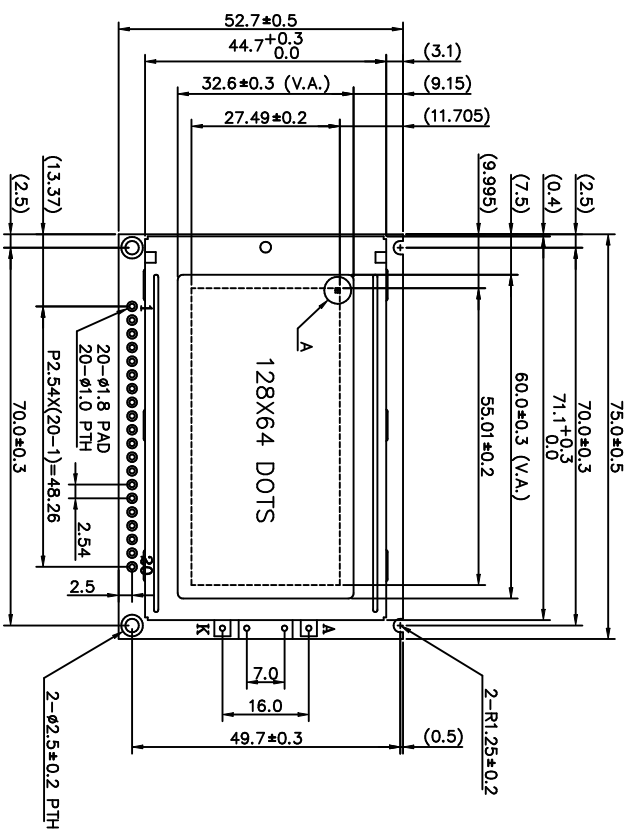
- 1.Avoid static electricity which can damage the CMOS LSI.
- 2.Do not remove the panel or frame from the module.
- 3.The polarizing plate of the display is very fragile. So, please handle it very carefully.
- 4.Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of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

• STORAGE

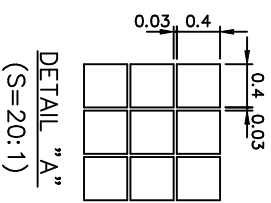
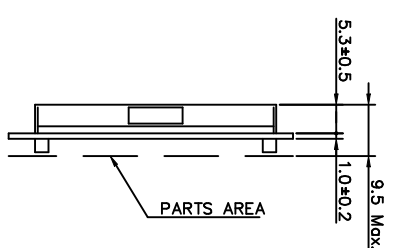
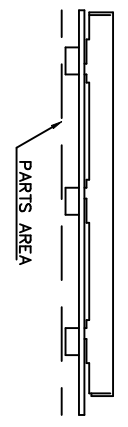
- 1.Store the panel or module in a dark place where the temperature is  $25^{\circ}\text{C}\pm 5^{\circ}\text{C}$  and the humidity is below 65% RH.
- 2.Do not place the module near organics solvents or corrosive gases.
- 3.Do not crush, shake, or jolt the module.

• 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.



VIEW DIRECTION



PIN NO.	SYMBOL	LEVEL	FUNCTION	PIN NO.	SYMBOL	LEVEL	FUNCTION
1	VDD	-	POWER SUPPLY FOR LOGIC CIRCUIT	11	DB7	H/L	DATA BIT 7
2	VSS	-	GND	12	CS1	L	CHIP SELECT FOR IC1
3	V <sub>0</sub>	-	OPERATING VOLTAGE FOR LCD DRIVING	13	CS2	L	CHIP SELECT FOR IC2
4	DB0	H/L	DATA BIT 0	14	RST	L	RESET
5	DB1	H/L	DATA BIT 1	15	R/W	H/L	DATA READ (LED = HIGH) ; DATA WRITE (LED = LOW) ; INSTRUCTION CODE INPUT
6	DB2	H/L	DATA BIT 2	16	D/I	H/L	HORIZONTAL INSTRUCTION CODE INPUT
7	DB3	H/L	DATA BIT 3	17	E	H <sub>1</sub> H <sub>2</sub> L	ENABLE SIGNAL
8	DB4	H/L	DATA BIT 4	18	VEE	-	POWER SUPPLY FOR LCD DRIVING
9	DB5	H/L	DATA BIT 5	19	LED(+)	-	LED BACKLIGHT
10	DB6	H/L	DATA BIT 6	20	LED(-)	-	LED BACKLIGHT

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)

NOTE:

1. RESOLUTION : 128 x 64 DOTS
2. BACKLIGHT : LED (YELLOW-GREEN)
3. FRAME MATERIAL : SPCC (0.5 mm t)
4. WITH TEMPERATURE COMPENSATION

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

製 品 圖  
 LMC75S141C3DLS

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

APPROVE	NAME	DATE	THIRD ANGLE P.
CHECK			
DESIGN	Campus Chen	96.10.04	SCALE UNIT
DRAWN	Campus Chen	96.10.04	1/1 mm

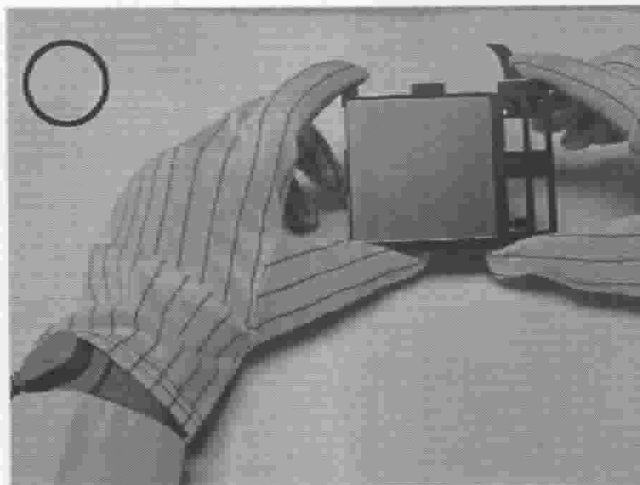
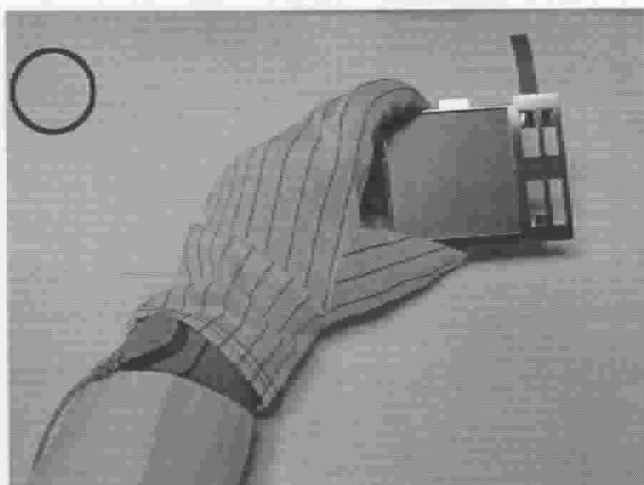
DWG NO.	DATE	SCALE	UNIT
M141BD3A1	96.10.04	1/1	mm

# THE NOTES OF LCM USING

LCM is easy to damage.

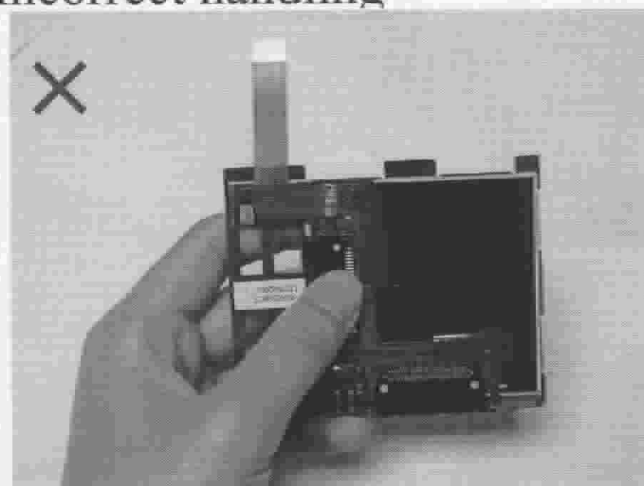
Please follow the notes as bellows, and be careful of handling!

## Correct handling

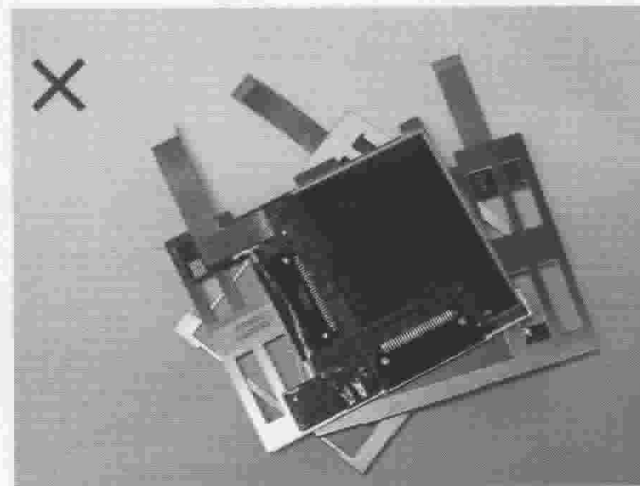


As above picture, please handle with glove by LCM edges and full EOS/ESD protection.

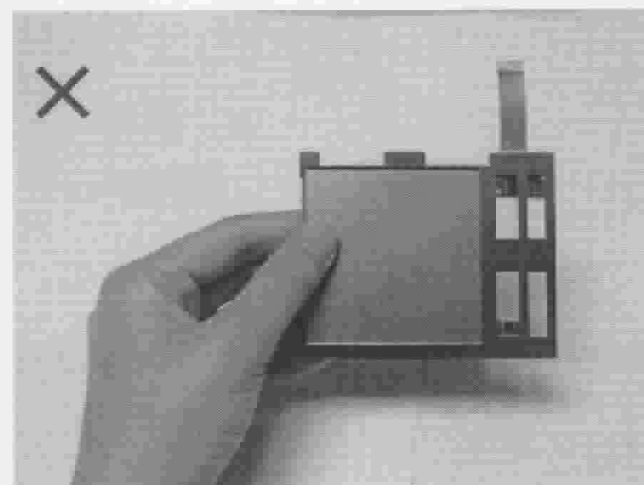
## Incorrect handling



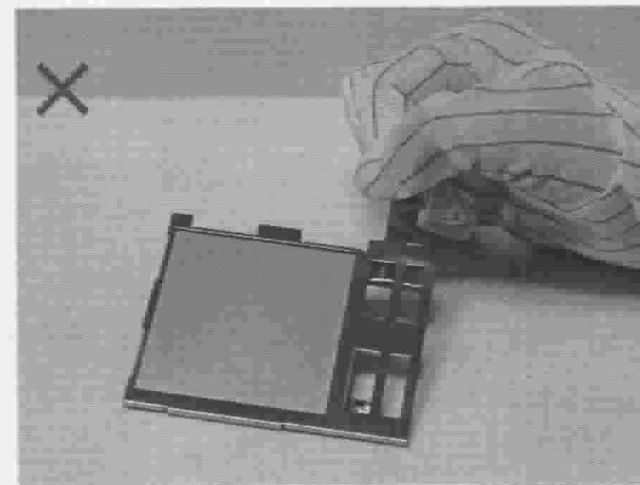
Please don't touch IC directly.



Please don't put one on another LCM.



Please don't hold the surface of LCM.



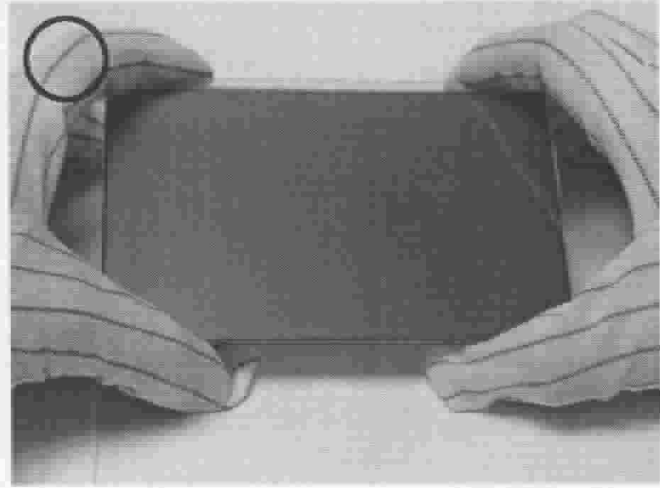
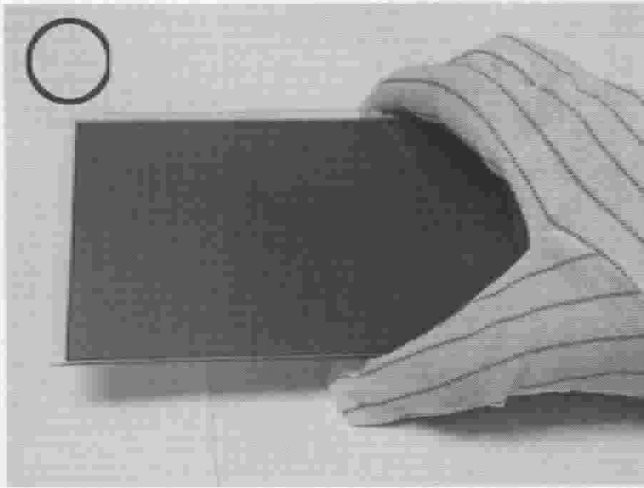
Please don't stretch interface of output.

# THE NOTES OF LCD USING

LCD is easy damage.

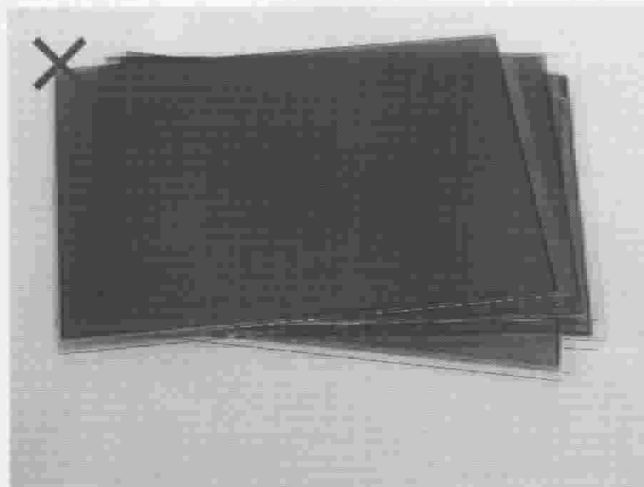
Please follow notes as bellows, and be careful of handling!

## Correct handling

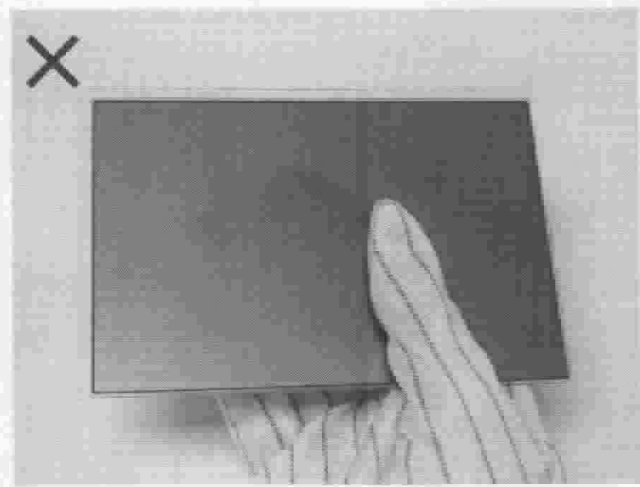


As above picture, please handle with glove by LCD edges and full EOS/ESD protection.

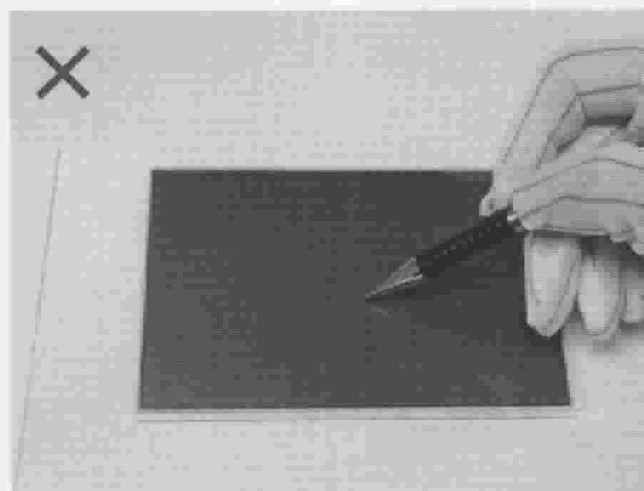
## Incorrect handling



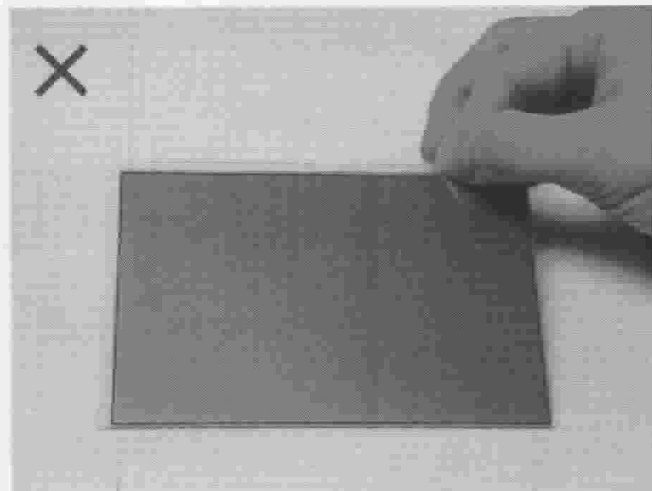
Please don't put one on another LCD.



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.



