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SPECIFICATION

CUSTOMER : _____

MODULE NO.: **DG240128F-YYH-VZ#**

<p>APPROVED BY:</p> <p>(FOR CUSTOMER USE ONLY)</p>	<p>PCB VERSION: _____</p> <p>DATA: _____</p>
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SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
ISSUED DATE: _____			

MODLE NO :

RECORDS OF REVISION

DOC. FIRST ISSUE

VERSION	DATE	REVISED PAGE NO.	SUMMARY
h0	2007.06.12		First issue

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1. Module Classification Information

D G — 240128 F — Y Y H — VZ#
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

- ① Brand : DENSITRON®DISPLAYS
- ② Display Type : H→Character Type, G→Graphic Type
- ③ Display : 240*128 Dots
- ④ Model serials no.
- ⑤ Backlight Type :

N→Without backlight	A→LED, Amber
B→EL, Blue green	R→LED, Red
D→EL, Green	O→LED, Orange
W→EL, White	G→LED, Green
F→CCFL, White	T→LED, White
Y→LED, Yellow Green	
- ⑥ LCD Mode :

B→TN Positive, Gray	T→FSTN Negative
N→TN Negative,	
G→STN Positive, Gray	
Y→STN Positive, Yellow Green	
M→STN Negative, Blue	
F→FSTN Positive	
- ⑦ LCD Polarizer Type/
 Temperature range/
 View direction

A→Reflective, N.T, 6:00	H→Transflective, W.T,6:00
D→Reflective, N.T, 12:00	K→Transflectiv, W.T,12:00
G→Reflective, W. T, 6:00	C→Transmissive, N.T,6:00
J→Reflective, W. T, 12:00	F→Transmissive, N.T,12:00
B→Transflective, N.T,6:00	I→Transmissive, W. T, 6:00
E→Transflective, N.T.12:00	L→Transmissive, W.T,12:00
- ⑧ Special Code

V : Negative voltage on board
Z : NT7086 Driver
: Fit in with the ROHS Directions and regulations

2. Precautions in use of LCD Modules

- (1) Avoid applying excessive shocks to the module or making any alterations or modifications to it.
- (2) Don't make extra holes on the printed circuit board, modify its shape or change the components of LCD module.
- (3) Don't disassemble the LCM.
- (4) Don't operate it above the absolute maximum rating.
- (5) Don't drop, bend or twist LCM.
- (6) Soldering: only to the I/O terminals.
- (7) Storage: please storage in anti-static electricity container and clean environment.

3. General Specification

ITEM	STANDARD VALUE	UNIT
Number of Dots:	240×128	
Module dimension:	170.0×93.6×14.3(MAX)mm	mm
View area:	128.0×75.0mm	mm
Active area:	119.97×63.97mm	mm
Character size:	(L)0.47×(W)0.47 mm	mm
Character pitch:	(L)0.50×(W)0.50mm	mm
LCD type:	STN Positive, Yellow Green, Transflective	
Duty:	1/128	
View direction:	6 o'clock	
Backlight:	LED Y/G	

4. Absolute Maximum Ratings

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Operating Temperature	T_{OP}	-20	—	+70	°C
Storage Temperature	T_{ST}	-30	—	+80	°C
Input Voltage	V_I	V_{SS}	—	V_{DD}	V
Supply Voltage For Logic	$V_{DD}-V_{SS}$	-0.3	—	7	V
Supply Voltage For LCD	$V_{DD}-V_0$	-0.3	—	23	V

5. Electrical Characteristics

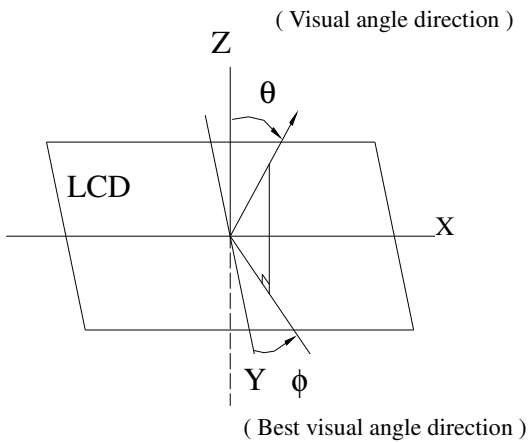
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	2.7	5.0	5.5	V
Supply Voltage For LCD	$V_{DD}-V_0$	$T_a=-20^{\circ}\text{C}$	—	—	19.3	V
		$T_a=25^{\circ}\text{C}$	—	17.3	—	V
		$T_a=70^{\circ}\text{C}$	15.3	—	—	V
Input High Vol	V_{IH}	—	$0.8 V_{DD}$	—	V_{DD}	V
Input Low Vol	V_{IL}	—	-0.3	—	$0.2V_{DD}$	V
Output High Vol	V_{OH}	—	$V_{DD}-0.4$	—	V_{DD}	V
Output Low Vol.	V_{OL}	—	—	—	0.4	V
Supply Current	I_{DD}	$V_{DD}=5\text{V}$	15.0	25.0	30.0	mA

6. Optical Characteristics

ITEM	SYMBAL	CONDITION	MIN.	TYP.	MAX.	UNIT
View Angle	(V) θ	$CR \geq 3$	20	—	40	deg
	(H) ϕ	$CR \geq 3$	-30	—	30	deg
Contrast Ratio	CR	—	—	3	—	—
Response Time	T rise	—	—	100	150	ms
	T fall	—	—	100	150	ms

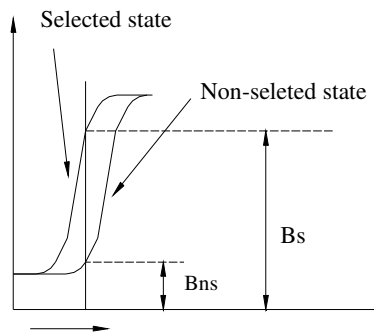
6.1 Definitions

View Angles

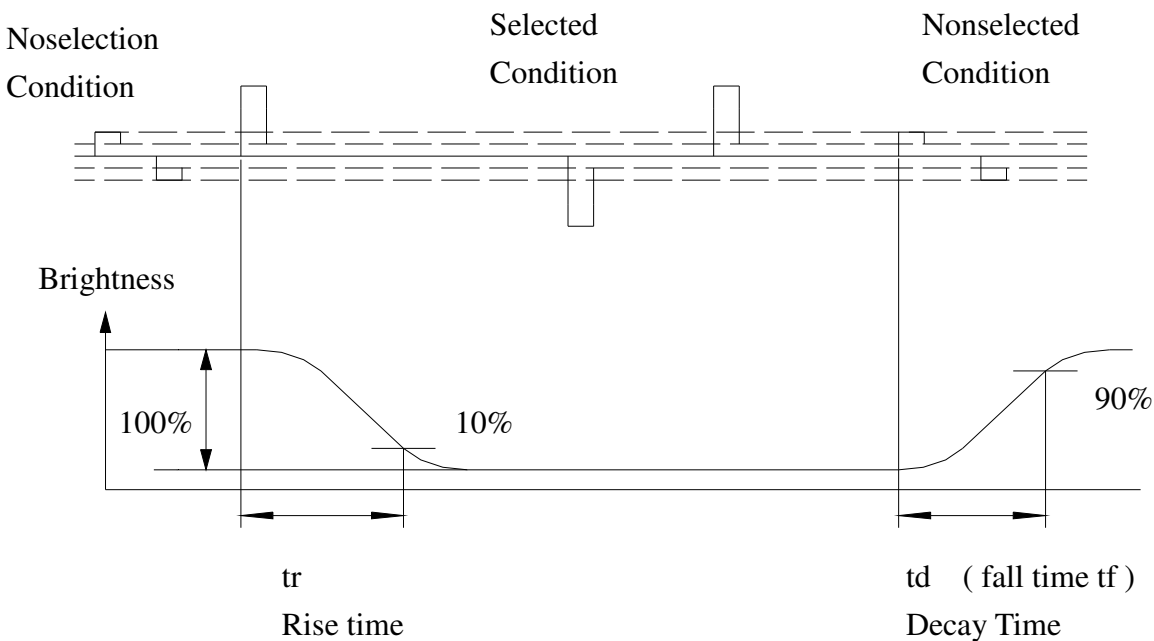


Contrast Ratio

$$CR = \frac{\text{Brightness at selected state (Bs)}}{\text{Brightness at non-selected state (Bns)}}$$



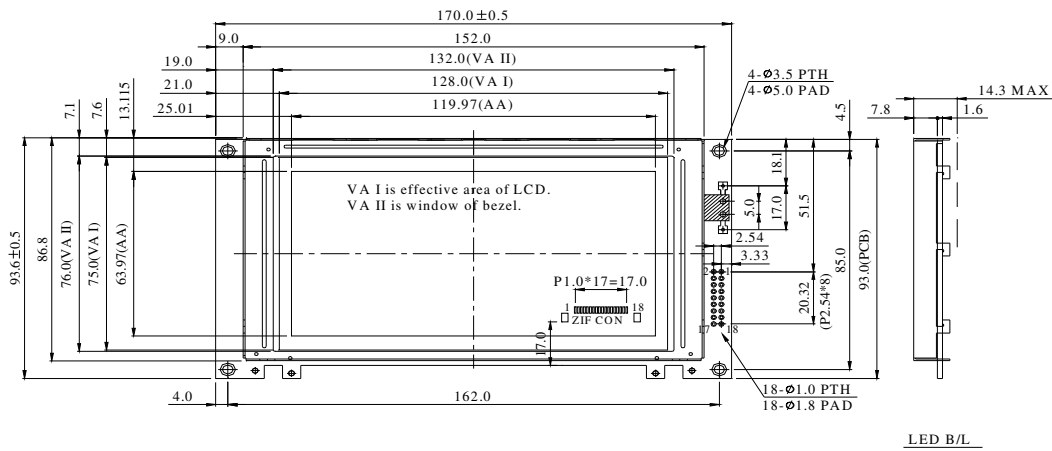
Response Time



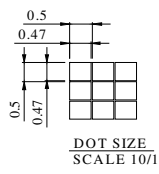
7. Interface Pin Function

Pin No.	Symbol	Level	Description
1	FGND		Frame Ground
2	DB0	H/L	Data bus line
3	DB1	H	Data bus line
4	DB2	H/L	Data bus line
5	DB3	H/L	Data bus line
6	$\overline{\text{DISPOFF}}$	L	Display off when low level
7	FLM	H/L	Operating voltage for LCD
8	M	H/L	Control Signal For AC Driving
9	LP	H/L	Display data latch
10	CP	H/L	Display data Shift
11	VDD	5V	Power supply for logic circuit
12	V _{SS}	0V	Ground
13	VEE		Negative Voltage output
14	V _O		Operating voltage for LCD driving
15	RV	H/L	Data Reverse
16	NC		NC
17	A	-	Power supply for B/L(+)
18	K	-	Power supply for B/L(-)

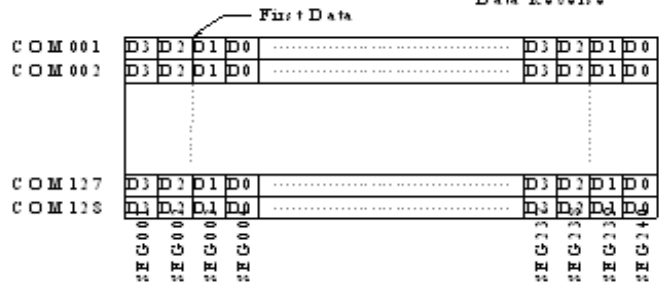
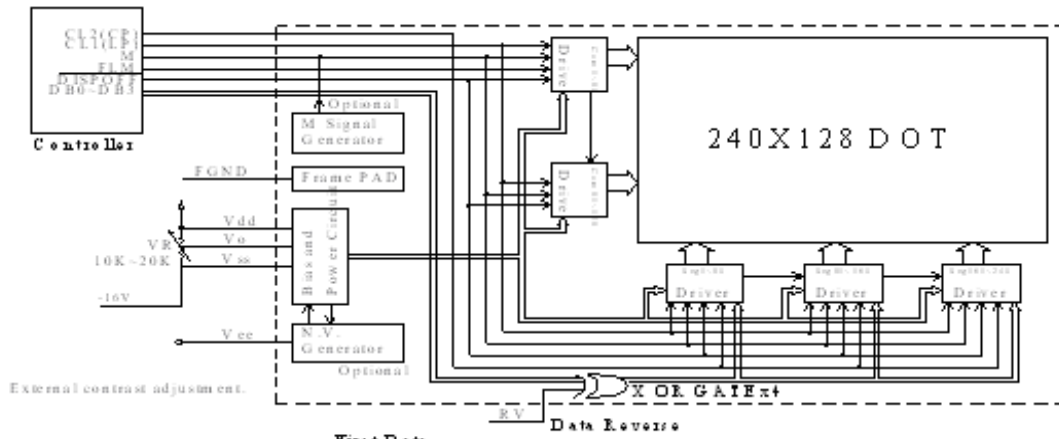
8. Contour Drawing & Block Diagram



PIN NO.	SYMBOL
1	FGND
2	DB0
3	DB1
4	DB2
5	DB3
6	DISPOFF
7	FLM
8	M
9	LP
10	CP
11	Vdd
12	Vss
13	Vee
14	Vo
15	RV
16	NC
17	A
18	K

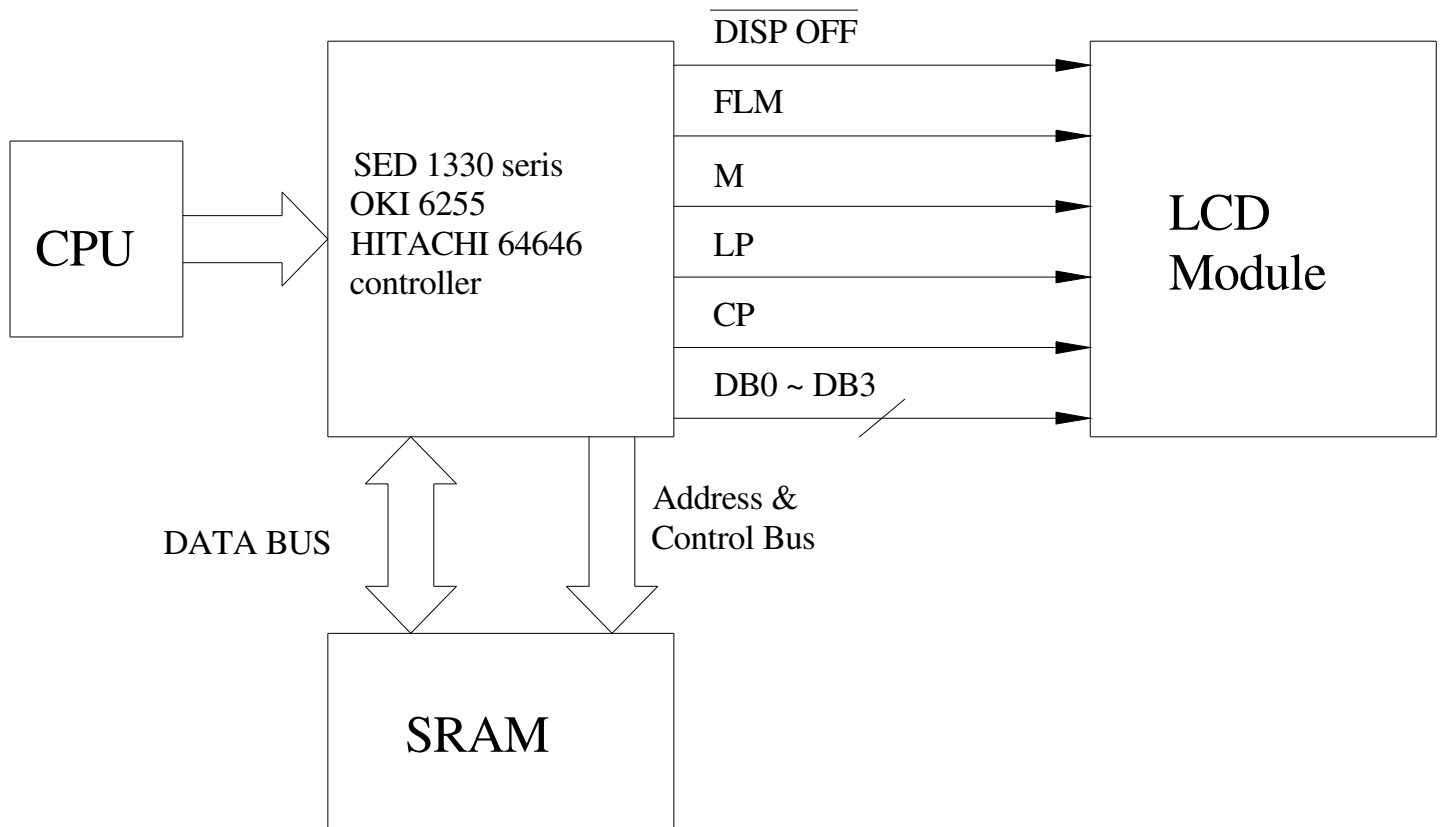


The non-specified tolerance of dimension is ± 0.3 mm .

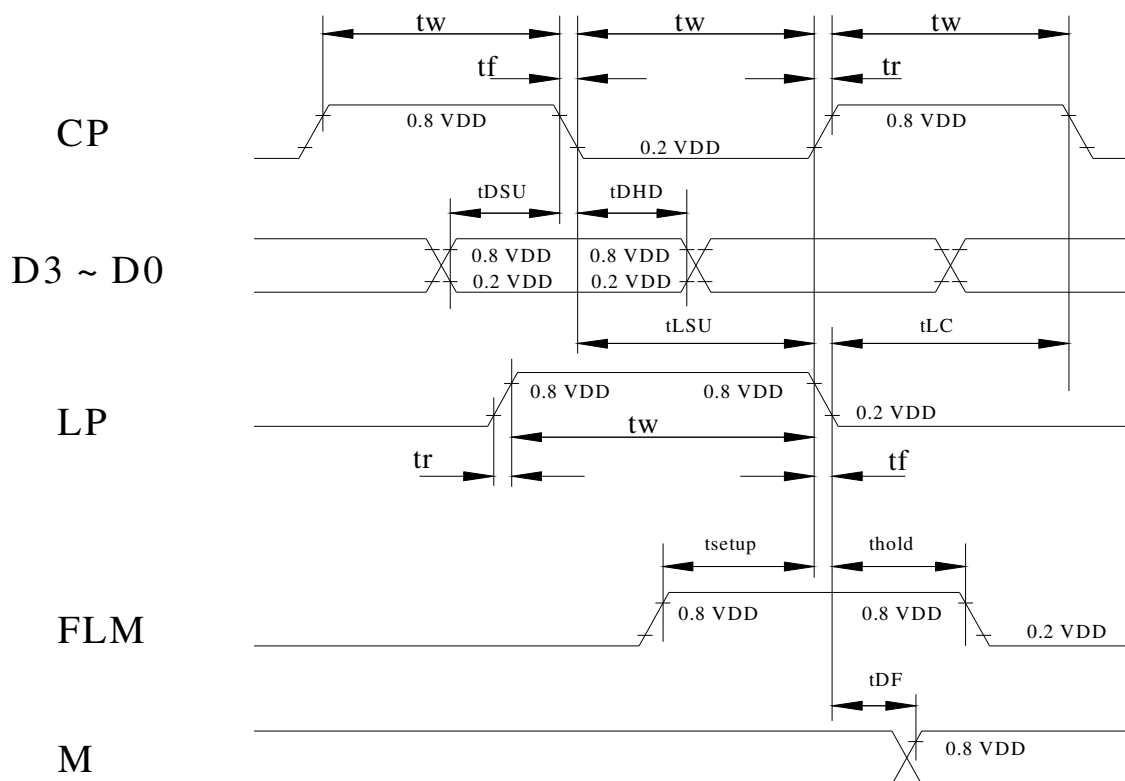


9. Function Description

This LCD Module doesn't have built in controller , so it must connect with a controller from user's control board .and it's software command must match the Timing Characteristics (shown in Sec.11) , below is interface diagram .



10. Timing Characteristics



($V_{SS} = 0\text{ V}$, $V_{DD} = 5\text{ V}$)

Item	Symbol	Min	Typ	Max	Unit
Frequency of maximum clock	fcp	—	—	8	MHZ
CL1,CL2,pulse width	t_w	45	—	—	ns
Rise , fall time	t_r , t_f	—	—	50	ns
Data setup time	t_{DSU}	30	—	—	ns
Data hold time	t_{DHD}	30	—	—	ns
CL1 setup time	t_{LSU}	80	—	—	ns
CL1 → CL2 time	t_{LC}	80	—	—	ns
FLM setup time	tsetup	100	—	—	ns
FLM hold time	thold	100	—	—	ns
M delay time	t_{DF}	—	—	1.0	μs

11 RELIABILITY

Content of Reliability Test (wide temperature, -20°C~70°C)

Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80°C 200hrs	2
Low Temperature storage	Endurance test applying the high storage temperature for a long time.	-30°C 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70°C 200hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20°C 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 60°C,90%RH max For 96hrs under no-load condition excluding the polarizer, Then taking it out and drying it at normal temperature.	60°C,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation <div style="text-align: center;"> <p style="text-align: center;">-20°C 25°C 70°C</p> <p style="text-align: center;">30min 5min 30min</p> <p style="text-align: center;">1 cycle</p> </div>	-20°C/70°C 10 cycles	—
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 15mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=800V,RS=1.5kΩ CS=100pF 1 time	—

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: Vibration test will be conducted to the product itself without putting it in a container.

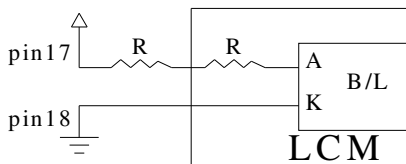
12 Backlight Information

Specification

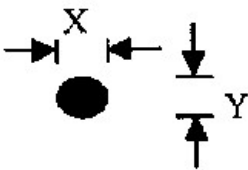
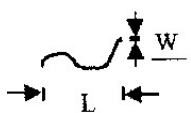
PARAMETER	SYMBOL	MIN	TYP	MAX	UNIT	TEST CONDITION
Supply Current	I _{LED}	750	1000	1250	mA	V=4.2V
Supply Voltage	V	4.0	4.2	4.4	V	—
Reverse Voltage	V _R	—	—	8	V	—
Luminous Intensity	I _V	120	160	—	CD/M ²	I _{LED} =1000mA
Wave Length	λ _p	565	575	585	nm	I _{LED} =1000mA
Life Time	—	—	50000K	—	Hr.	I _{LED} ≤ 1000mA
Color	Yellow Green					

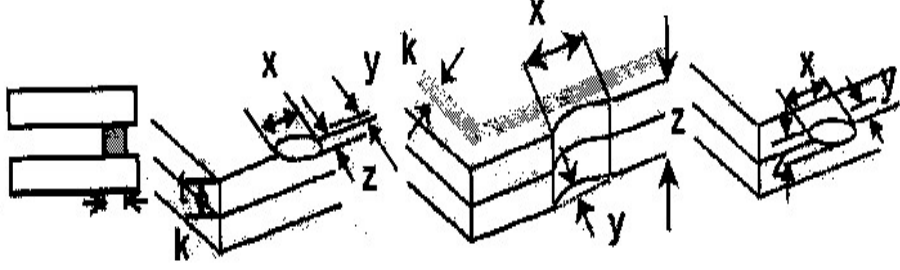
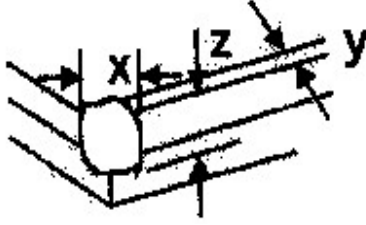
Note: The LED of B/L is drive by current only, drive voltage is for reference only. drive voltage can make driving current under safety area (current between minimum and maximum).

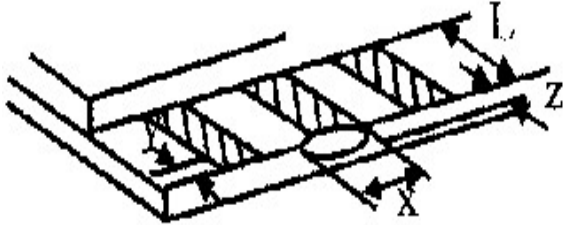
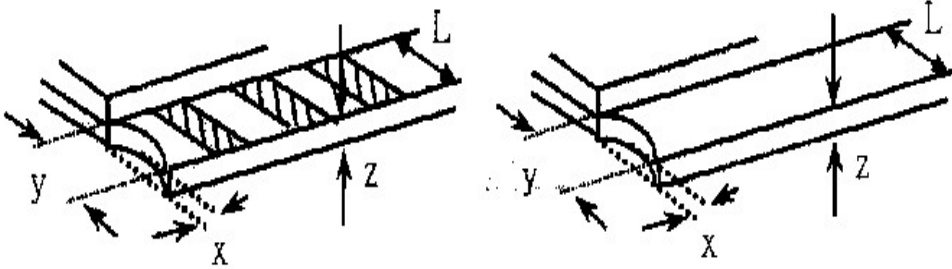
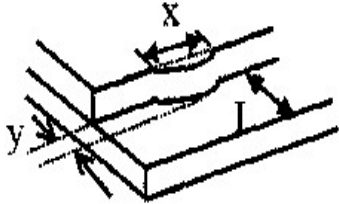
Drive from pin17, pin18

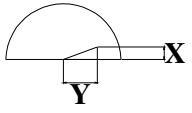


13. Inspection specification

NO	Item	Criterion	AQL													
01	Electrical Testing	1.1 Missing vertical, horizontal segment, segment contrast defect. 1.2 Missing character , dot or icon. 1.3 Display malfunction. 1.4 No function or no display. 1.5 Current consumption exceeds product specifications. 1.6 LCD viewing angle defect. 1.7 Mixed product types. 1.8 Contrast defect.	0.65													
02	Black or white spots on LCD (display only)	2.1 White and black spots on display $\leq 0.25\text{mm}$, no more than three white or black spots present. 2.2 Densely spaced: No more than two spots or lines within 3mm	2.5													
03	LCD black spots, white spots, contamination (non-display)	3.1 Round type : As following drawing $\Phi = (x + y) / 2$  <table border="1" data-bbox="858 929 1337 1142"> <thead> <tr> <th>SIZE</th> <th>Acceptable Q TY</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.10$</td> <td>Accept no dense</td> </tr> <tr> <td>$0.10 < \Phi \leq 0.20$</td> <td>2</td> </tr> <tr> <td>$0.20 < \Phi \leq 0.25$</td> <td>1</td> </tr> <tr> <td>$0.25 < \Phi$</td> <td>0</td> </tr> </tbody> </table>	SIZE	Acceptable Q TY	$\Phi \leq 0.10$	Accept no dense	$0.10 < \Phi \leq 0.20$	2	$0.20 < \Phi \leq 0.25$	1	$0.25 < \Phi$	0	2.5			
		SIZE	Acceptable Q TY													
$\Phi \leq 0.10$	Accept no dense															
$0.10 < \Phi \leq 0.20$	2															
$0.20 < \Phi \leq 0.25$	1															
$0.25 < \Phi$	0															
3.2 Line type : (As following drawing)  <table border="1" data-bbox="694 1220 1337 1429"> <thead> <tr> <th>Length</th> <th>Width</th> <th>Acceptable Q TY</th> </tr> </thead> <tbody> <tr> <td>---</td> <td>$W \leq 0.02$</td> <td>Accept no dense</td> </tr> <tr> <td>$L \leq 3.0$</td> <td>$0.02 < W \leq 0.03$</td> <td rowspan="2">2</td> </tr> <tr> <td>$L \leq 2.5$</td> <td>$0.03 < W \leq 0.05$</td> </tr> <tr> <td>---</td> <td>$0.05 < W$</td> <td>As round type</td> </tr> </tbody> </table>	Length	Width	Acceptable Q TY	---	$W \leq 0.02$	Accept no dense	$L \leq 3.0$	$0.02 < W \leq 0.03$	2	$L \leq 2.5$	$0.03 < W \leq 0.05$	---	$0.05 < W$	As round type	2.5	
Length	Width	Acceptable Q TY														
---	$W \leq 0.02$	Accept no dense														
$L \leq 3.0$	$0.02 < W \leq 0.03$	2														
$L \leq 2.5$	$0.03 < W \leq 0.05$															
---	$0.05 < W$	As round type														
04	Polarizer bubbles	If bubbles are visible, judge using black spot specifications, not easy to find, must check in specify direction.	<table border="1" data-bbox="826 1478 1337 1731"> <thead> <tr> <th>Size Φ</th> <th>Acceptable Q TY</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.20$</td> <td>Accept no dense</td> </tr> <tr> <td>$0.20 < \Phi \leq 0.50$</td> <td>3</td> </tr> <tr> <td>$0.50 < \Phi \leq 1.00$</td> <td>2</td> </tr> <tr> <td>$1.00 < \Phi$</td> <td>0</td> </tr> <tr> <td>Total Q TY</td> <td>3</td> </tr> </tbody> </table>	Size Φ	Acceptable Q TY	$\Phi \leq 0.20$	Accept no dense	$0.20 < \Phi \leq 0.50$	3	$0.50 < \Phi \leq 1.00$	2	$1.00 < \Phi$	0	Total Q TY	3	2.5
Size Φ	Acceptable Q TY															
$\Phi \leq 0.20$	Accept no dense															
$0.20 < \Phi \leq 0.50$	3															
$0.50 < \Phi \leq 1.00$	2															
$1.00 < \Phi$	0															
Total Q TY	3															

NO	Item	Criterion	AQL																		
05	Scratches	Follow NO.3 LCD black spots, white spots, contamination																			
06	Chipped glass	<p>Symbols Define: x: Chip length y: Chip width z: Chip thickness k: Seal width t: Glass thickness a: LCD side length L: Electrode pad length:</p> <p>6.1 General glass chip : 6.1.1 Chip on panel surface and crack between panels:</p>  <table border="1" data-bbox="427 806 1337 936"> <thead> <tr> <th>z: Chip thickness</th> <th>y: Chip width</th> <th>x: Chip length</th> </tr> </thead> <tbody> <tr> <td>$Z \leq 1/2t$</td> <td>Not over viewing area</td> <td>$x \leq 1/8a$</td> </tr> <tr> <td>$1/2t < z \leq 2t$</td> <td>Not exceed 1/3k</td> <td>$x \leq 1/8a$</td> </tr> </tbody> </table> <p>⊙If there are 2 or more chips, x is total length of each chip.</p> <p>6.1.2 Corner crack:</p>  <table border="1" data-bbox="427 1332 1337 1462"> <thead> <tr> <th>z: Chip thickness</th> <th>y: Chip width</th> <th>x: Chip length</th> </tr> </thead> <tbody> <tr> <td>$Z \leq 1/2t$</td> <td>Not over viewing area</td> <td>$x \leq 1/8a$</td> </tr> <tr> <td>$1/2t < z \leq 2t$</td> <td>Not exceed 1/3k</td> <td>$x \leq 1/8a$</td> </tr> </tbody> </table> <p>⊙If there are 2 or more chips, x is the total length of each chip.</p>	z: Chip thickness	y: Chip width	x: Chip length	$Z \leq 1/2t$	Not over viewing area	$x \leq 1/8a$	$1/2t < z \leq 2t$	Not exceed 1/3k	$x \leq 1/8a$	z: Chip thickness	y: Chip width	x: Chip length	$Z \leq 1/2t$	Not over viewing area	$x \leq 1/8a$	$1/2t < z \leq 2t$	Not exceed 1/3k	$x \leq 1/8a$	2.5
z: Chip thickness	y: Chip width	x: Chip length																			
$Z \leq 1/2t$	Not over viewing area	$x \leq 1/8a$																			
$1/2t < z \leq 2t$	Not exceed 1/3k	$x \leq 1/8a$																			
z: Chip thickness	y: Chip width	x: Chip length																			
$Z \leq 1/2t$	Not over viewing area	$x \leq 1/8a$																			
$1/2t < z \leq 2t$	Not exceed 1/3k	$x \leq 1/8a$																			

NO	Item	Criterion	AQL								
06	Glass crack	<p>Symbols :</p> <p>x: Chip length y: Chip width z: Chip thickness</p> <p>k: Seal width t: Glass thickness a: LCD side length</p> <p>L: Electrode pad length</p> <p>6.2 Protrusion over terminal :</p> <p>6.2.1 Chip on electrode pad :</p> 	2.5								
		<table border="1"> <tr> <td data-bbox="336 705 639 743">y: Chip width</td> <td data-bbox="639 705 943 743">x: Chip length</td> <td data-bbox="943 705 1246 743">z: Chip thickness</td> </tr> <tr> <td data-bbox="336 743 639 786">$y \leq 0.5\text{mm}$</td> <td data-bbox="639 743 943 786">$x \leq 1/8a$</td> <td data-bbox="943 743 1246 786">$0 < z \leq t$</td> </tr> </table>		y: Chip width	x: Chip length	z: Chip thickness	$y \leq 0.5\text{mm}$	$x \leq 1/8a$	$0 < z \leq t$		
		y: Chip width		x: Chip length	z: Chip thickness						
		$y \leq 0.5\text{mm}$		$x \leq 1/8a$	$0 < z \leq t$						
<p>6.2.2 Non-conductive portion:</p> 											
<table border="1"> <tr> <td data-bbox="408 1126 699 1164">y: Chip width</td> <td data-bbox="699 1126 989 1164">x: Chip length</td> <td data-bbox="989 1126 1246 1164">z: Chip thickness</td> </tr> <tr> <td data-bbox="408 1164 699 1207">$y \leq L$</td> <td data-bbox="699 1164 989 1207">$x \leq 1/8a$</td> <td data-bbox="989 1164 1246 1207">$0 < z \leq t$</td> </tr> </table> <p>⊙ If the chipped area touches the ITO terminal, over 2/3 of the ITO must remain and be inspected according to electrode terminal specifications.</p> <p>⊙ If the product will be heat sealed by the customer, the alignment mark not be damaged.</p> <p>6.2.3 Substrate protuberance and internal crack.</p>  <table border="1"> <tr> <td data-bbox="746 1435 1002 1473">y: width</td> <td data-bbox="1002 1435 1246 1473">x: length</td> </tr> <tr> <td data-bbox="746 1473 1002 1516">$y \leq 1/3L$</td> <td data-bbox="1002 1473 1246 1516">$x \leq a$</td> </tr> </table>	y: Chip width	x: Chip length	z: Chip thickness	$y \leq L$	$x \leq 1/8a$	$0 < z \leq t$	y: width	x: length	$y \leq 1/3L$	$x \leq a$	
y: Chip width	x: Chip length	z: Chip thickness									
$y \leq L$	$x \leq 1/8a$	$0 < z \leq t$									
y: width	x: length										
$y \leq 1/3L$	$x \leq a$										

NO	Item	Criterion	AQL
07	Cracked glass	The LCD with extensive crack is not acceptable.	2.5
08	Backlight elements	8.1 Illumination source flickers when lit. 8.2 Spots or scratched that appear when lit must be judged. Using LCD spot, lines and contamination standards. 8.3 Backlight doesn't light or color wrong.	0.65 2.5 0.65
09	Bezel	9.1 Bezel may not have rust, be deformed or have fingerprints, stains or other contamination. 9.2 Bezel must comply with job specifications.	2.5 0.65
10	PCB 、 COB	10.1 COB seal may not have pinholes larger than 0.2mm or contamination. 10.2 COB seal surface may not have pinholes through to the IC. 10.3 The height of the COB should not exceed the height indicated in the assembly diagram. 10.4 There may not be more than 2mm of sealant outside the seal area on the PCB. And there should be no more than three places. 10.5 No oxidation or contamination PCB terminals. 10.6 Parts on PCB must be the same as on the production characteristic chart. There should be no wrong parts, missing parts or excess parts. 10.7 The jumper on the PCB should conform to the product characteristic chart. 10.8 If solder gets on bezel tab pads, LED pad, zebra pad or screw hold pad, make sure it is smoothed down. 10.9 The Scraping testing standard for Copper Coating of PCB  $X * Y \leq 2mm^2$	2.5 2.5 0.65 2.5 2.5 0.65 0.65 2.5 2.5
11	Soldering	11.1 No un-melted solder paste may be present on the PCB. 11.2 No cold solder joints, missing solder connections, oxidation or icicle. 11.3 No residue or solder balls on PCB. 11.4 No short circuits in components on PCB.	2.5 2.5 2.5 0.65

NO	Item	Criterion	AQL
12	General appearance	12.1 No oxidation, contamination, curves or, bends on interface Pin (OLB) of TCP.	2.5
		12.2 No cracks on interface pin (OLB) of TCP.	0.65
		12.3 No contamination, solder residue or solder balls on product.	2.5
		12.4 The IC on the TCP may not be damaged, circuits.	2.5
		12.5 The uppermost edge of the protective strip on the interface pin must be present or look as if it cause the interface pin to sever.	2.5
		12.6 The residual rosin or tin oil of soldering (component or chip component) is not burned into brown or black color.	2.5
		12.7 Sealant on top of the ITO circuit has not hardened.	0.65
		12.8 Pin type must match type in specification sheet.	0.65
		12.9 LCD pin loose or missing pins.	0.65
		12.10 Product packaging must the same as specified on packaging specification sheet.	
		12.11 Product dimension and structure must conform to product specification sheet.	

14. Material List of Components for RoHs

1. Densitron Displays hereby declares that all of or part of products (with the mark “#”in code), including, but not limited to, the LCM, accessories or packages, manufactured and/or delivered to your company (including your subsidiaries and affiliated company) directly or indirectly by our company (including our subsidiaries or affiliated companies) do not intentionally contain any of the substances listed in all applicable EU directives and regulations, including the following substances.

Exhibit A : The Harmful Material List

Material	(Cd)	(Pb)	(Hg)	(Cr6+)	PBBs	PBDEs
Limited Value	100 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm	1000 ppm
Above limited value is set up according to RoHS.						

2.Process for RoHS requirement :

(1) Use the Sn/Ag/Cu soldering surface ; the surface of Pb-free solder is rougher than we used before.

(2) Heat-resistance temp. :

Reflow : 250℃,30 seconds Max. ;

Connector soldering wave or hand soldering : 320℃, 10 seconds max.

(3) Temp. curve of reflow, max. Temp. : 235±5℃ ;

Recommended customer’s soldering temp. of connector : 280℃, 3 seconds.

LCM Sample Estimate Feedback Sheet

Module Number : _____

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1、Panel Specification :

1. Panel Type : Pass NG , _____
2. View Direction : Pass NG , _____
3. Numbers of Dots : Pass NG , _____
4. View Area : Pass NG , _____
5. Active Area : Pass NG , _____
6. Operating Temperature : Pass NG , _____
7. Storage Temperature : Pass NG , _____
8. Others : _____

2、Mechanical Specification :

1. PCB Size : Pass NG , _____
2. Frame Size : Pass NG , _____
3. Material of Frame : Pass NG , _____
4. Connector Position : Pass NG , _____
5. Fix Hole Position : Pass NG , _____
6. Backlight Position : Pass NG , _____
7. Thickness of PCB : Pass NG , _____
8. Height of Frame to PCB : Pass NG , _____
9. Height of Module : Pass NG , _____
10. Others : Pass NG , _____

3、Relative Hole Size :

1. Pitch of Connector : Pass NG , _____
2. Hole size of Connector : Pass NG , _____
3. Mounting Hole size : Pass NG , _____
4. Mounting Hole Type : Pass NG , _____
5. Others : Pass NG , _____

4、Backlight Specification :

1. B/L Type : Pass NG , _____
2. B/L Color : Pass NG , _____
3. B/L Driving Voltage (Reference for LED Type) : Pass NG , _____
4. B/L Driving Current : Pass NG , _____
5. Brightness of B/L : Pass NG , _____
6. B/L Solder Method : Pass NG , _____
7. Others : Pass NG , _____

>> **Go to page 2** <<

Module Number : _____

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5、Electronic Characteristics of Module :

- | | | |
|------------------------------|-------------------------------|-------------------------------------|
| 1. Input Voltage : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 2. Supply Current : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 3. Driving Voltage for LCD : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 4. Contrast for LCD : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 5. B/L Driving Method : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 6. Negative Voltage Output : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 7. Interface Function : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 8. LCD Uniformity : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 9. ESD test : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |
| 10. Others : | <input type="checkbox"/> Pass | <input type="checkbox"/> NG , _____ |

6、Summary :

Sales signature : _____

Customer Signature : _____

Date : / /