

TFT-Display Datenblatt

Modell OT080GSDDDV-00

Kurzdaten

Hersteller	ONation
Diagonale	8,0" / 20,3 cm
Format	wide
Auflösung	800 x 600
Backlight	LED / 1000 cd/m ²
Interface	RGB
Touchscreen	nein
Temperatur	-20... +70°C (Betrieb)

Vertrieb durch:



ONation Corporation

CUSTOMER' S APPROVAL SPECIFICATIONS

MODEL: OT080GSDDDV-00
(Complied with RoHS)

CUSTOMER: _____

Version:P0.1

C O N T E N T S

ISSUE:JUN.10.2013

Spec Condition: Preliminary

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CUSTOMER	ONATION		
APPROVAL	APPROVAL	CHECKER	PREPARE
	<i>Johny</i>	kevin	Josh

2.RECORD OF REVISION

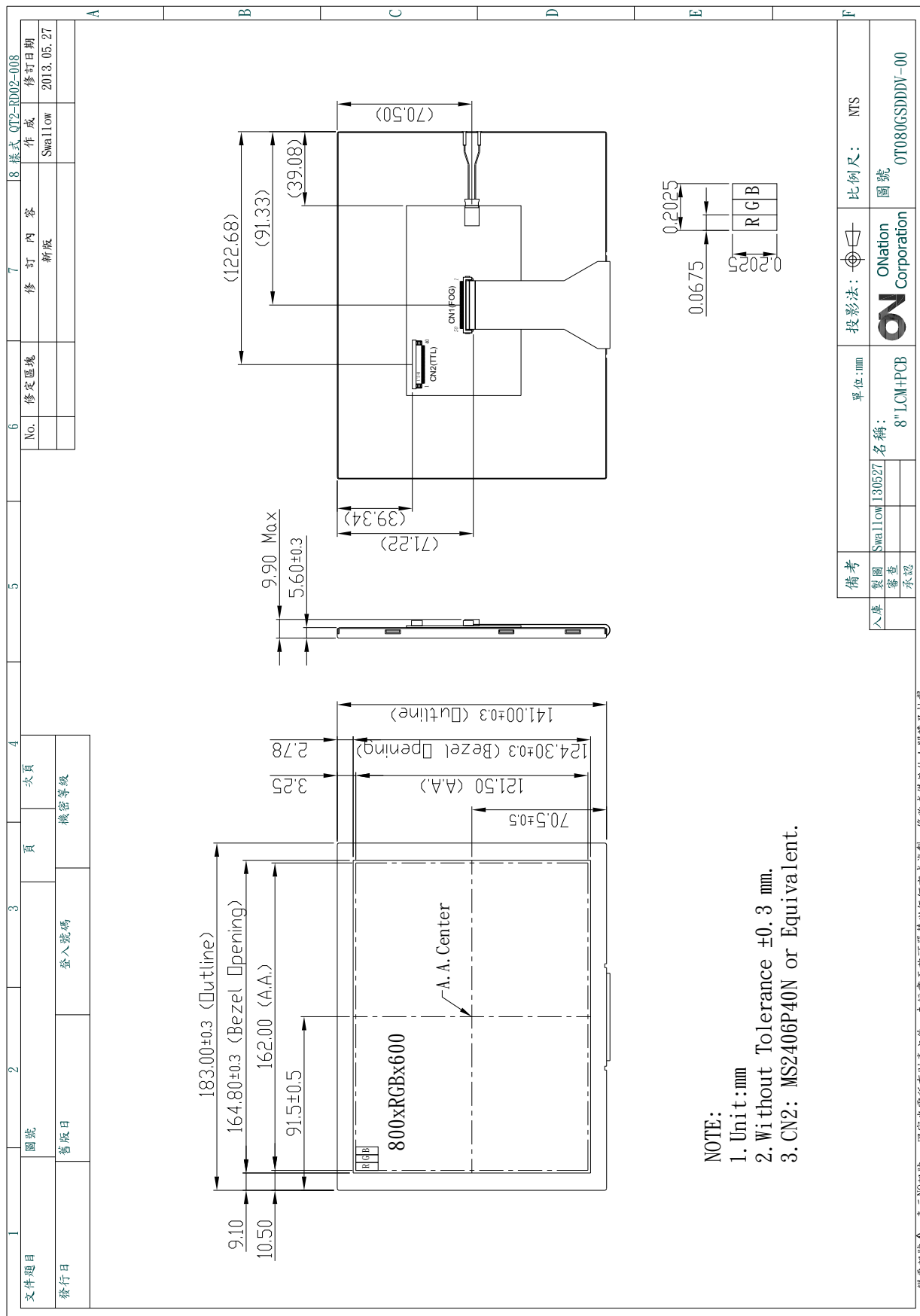
Rev	DATE	PAGE	SUMMARY
0.1	2013.06.10	ALL	Preliminary specification was first issued.

3. MECHANICAL SPECIFICATIONS

(1)	Number Of Dots (Dots)	800(R.G.B) X 600
(2)	Module Size(mm)	183.0(W) X 141.0(H) X 9.90(D)
(3)	Active Area(mm)	162.0(H) X 121.5(V)
(4)	Pixel Pitch(mm)	0.2025(H) X 0.2025(V)
(5)	LCD Model	TFT, Transmissive, Normally/White
(6)	Polarizer Model	Anti-glare
(7)	LED Backlight Color	White
(8)	Viewing Direction	12 O'clock
(9)	Gray Scale Inversion Direction	6 O'clock
(10)	Color Configuration	R.G.B Vertical Stripe
(11)	Driving Method	COG TYPE
(12)	Module Weight(g)	T.B.D.

**Viewing direction for best image quality is different from TFT definition, there is the 180 degrees shift.

4. OUTLINE DIMENSIONS



變更記號△：表示NO記號 國家光電所有財產文件，未經書面許可嚴禁以任何方式複製，修改或借於他人閱讀及抄襲

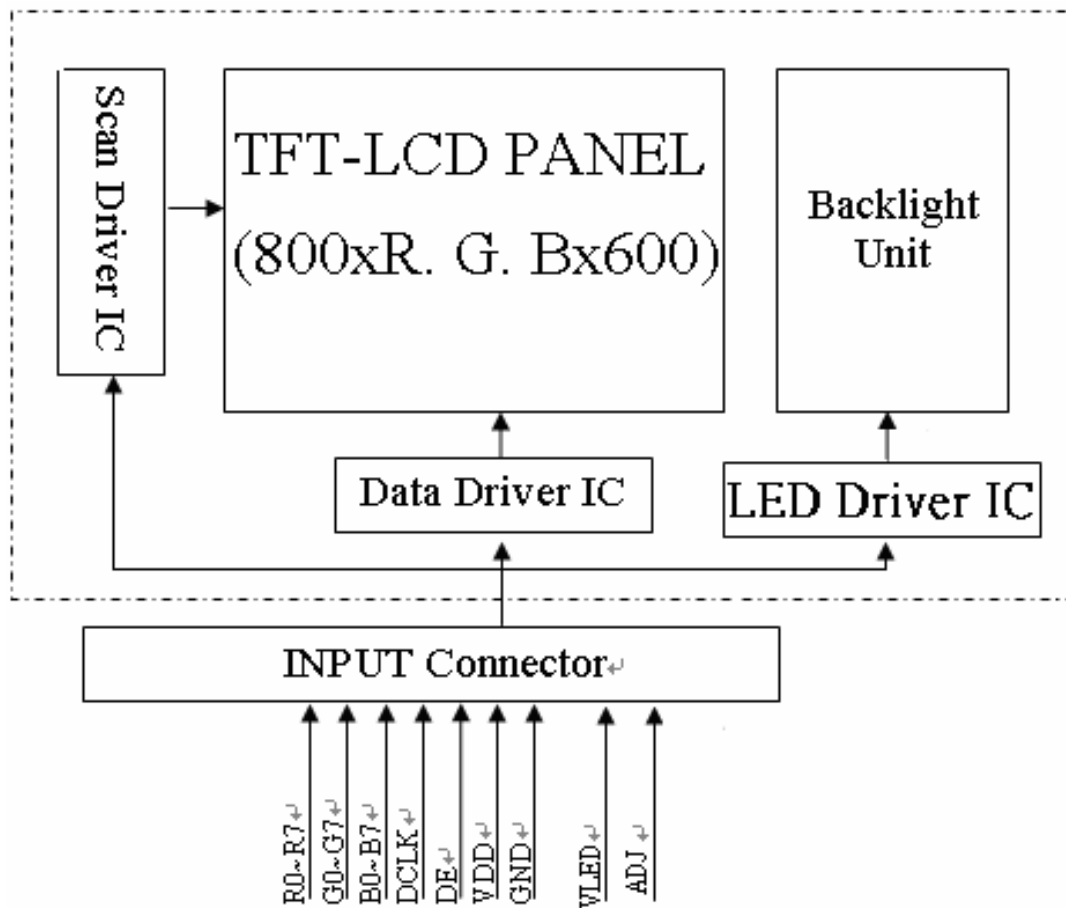
5. INTERFACE PIN CONNECTION

5.1 LCM PANEL DRIVING SECTION

(CN2 Connector: STM MS2406P40N or Equivalent)

PIN NO.	SIGNAL	DESCRIPTION
1	GND	GROUND
2	ADJ	ADJUST THE BACK LIGHT BRIGHTNESS
3	VLED	POWER SUPPLY FOR LED DRIVER CIRCUIT
4	VLED	POWER SUPPLY FOR LED DRIVER CIRCUIT
5	VDD	POWER SUPPLY FOR DIGITAL CIRCUIT
6	VDD	POWER SUPPLY FOR DIGITAL CIRCUIT
7	DE	DATA ENABLE
8	GND	GROUND
9	B7	BLUE DATA SIGNAL(MSB)
10	B6	BLUE DATA SIGNAL
11	B5	BLUE DATA SIGNAL
12	B4	BLUE DATA SIGNAL
13	GND	GROUND
14	B3	BLUE DATA SIGNAL
15	B2	BLUE DATA SIGNAL
16	B1	BLUE DATA SIGNAL
17	B0	BLUE DATA SIGNAL(LSB)
18	GND	GROUND
19	G7	GREEN DATA SIGNAL(MSB)
20	G6	GREEN DATA SIGNAL
21	G5	GREEN DATA SIGNAL
22	G4	GREEN DATA SIGNAL
23	GND	GROUND
24	G3	GREEN DATA SIGNAL
25	G2	GREEN DATA SIGNAL
26	G1	GREEN DATA SIGNAL
27	G0	GREEN DATA SIGNAL(LSB)
28	GND	GROUND
29	R7	RED DATA SIGNAL(MSB)
30	R6	RED DATA SIGNAL
31	R5	RED DATA SIGNAL
32	R4	RED DATA SIGNAL
33	GND	GROUND
34	R3	RED DATA SIGNAL
35	R2	RED DATA SIGNAL
36	R1	RED DATA SIGNAL
37	R0	RED DATA SIGNAL(LSB)
38	GND	GROUND
39	DCLK	CLOCK SIGNALS
40	GND	GROUND

6. BLOCK DIAGRAM



7.ABSOLUTE MAXIMUM RATINGS

7.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	MIN.	MAX.	UNIT	COMMENT
Power Supply Voltage	V _{DD}	-0.3	5.0	V	
LED Reverse Voltage	V _R	-	1.2	V	each LED(Note 2)
LED Forward Current	I _F	-	80	mA	each LED

Note 1: The absolute maximum rating values of this product are not allowed to be exceeded at any times. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

Note 2: V_R Conditions: Zener Diode 20mA

7.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

ITEM	OPERATING		STORAGE		REMARK
	MIN.	MAX.	MIN.	MAX.	
Ambient Temperature(°C)	-20	70	-30	80	Note 1,2,3
Humidity(% RH)	Note 3		Note 3		

Note 1 : The response time will become lower when operated at low temperature.

Note 2 : Background color changes slightly depending on ambient temperature.

Note 3 : Operation Ta=40°C & H=90% ≤ 240Hrs.

8.ELECTRICAL CHARACTERISTICS

8.1 LCM ELECTRICAL CHARACTERISTICS

Ta=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Power Voltage for LCD	V _{DD}	3.0	3.3	3.6	V	
	I _{DD}	-	(200)	(250)	mA	Note 1
Input Logic High Voltage	V _{IH}	0.7V _{DD}	-	V _{DD}	V	Note 2
Input Logic Low Voltage	V _{IL}	0	-	0.3V _{DD}	V	

Note 1: Test pattern: black at V_{DD}=3.3V

Note 2: DCLK, HS, DE

8.2 BACKLIGHT UNITS

Ta=25°C

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Voltage for LED backlight	V _{LED}	-	9.9	12	V	
Current for LED backlight	I _{LED}	-	T.B.D.	T.B.D.	mA	
LED life time	-	-	20K	-	Hr	Note 1

Note 1: The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25°C and I_{LED}=T.B.D. mA. The LED lifetime could be decreased if operating I_{LED} is larger than T.B.D. mA.

9 .OPTICAL CHARACTERISTICS

Ta=25°C

ITEM	SYMBOL	CONDITIONS	MIN.	TYP.	MAX.	UNIT	REMARK
Contrast Ratio	CR	At optimized Viewing angle	400	500	-	-	Note (1)
Response Time	TR	T=0	-	10	20	ms	Note (2)
	TF		-	15	30	ms	
Brightness		Center	(800)	(1000)	-	cd/m2	Note(5)
Uniformity		ILED=480mA	60	70	-	%	
Chromaticity	White	x	(0.26)	(0.31)	(0.36)	-	Note (4)
		y	(0.28)	(0.33)	(0.38)	-	
Viewing Angle	ΘX+	CR ≥ 10	60	70	-	Deg.	Note (3)
	ΘX-		60	70	-		
	ΘY+		40	50	-		
	ΘY-		60	70	-		

*Note (1) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

$$\text{Contrast Ratio (CR)} = L63 / L0$$

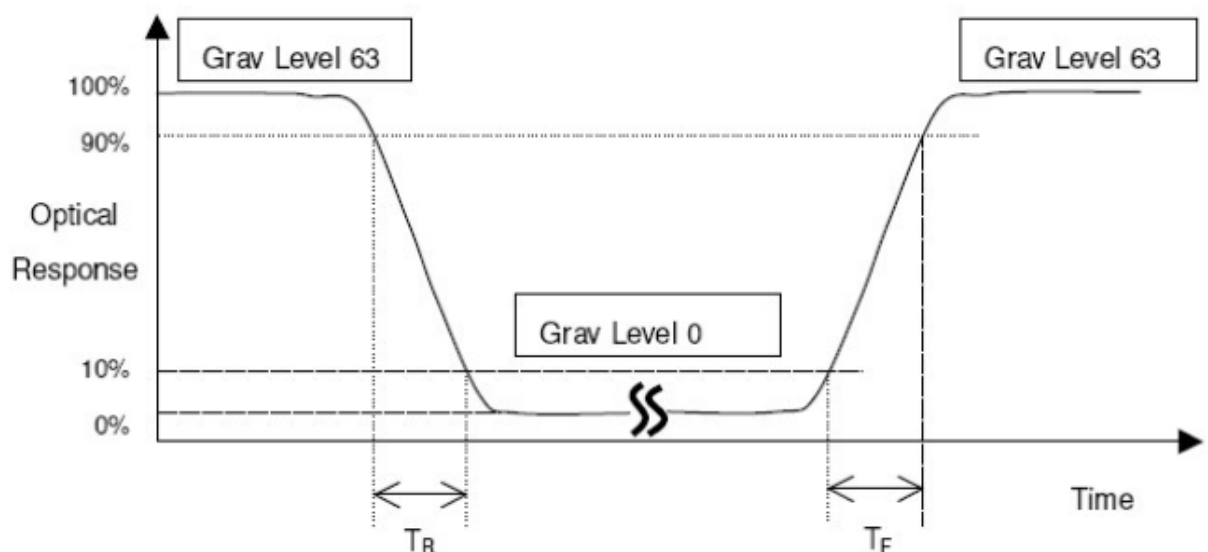
L63: Luminance of gray level 63

L 0: Luminance of gray level 0

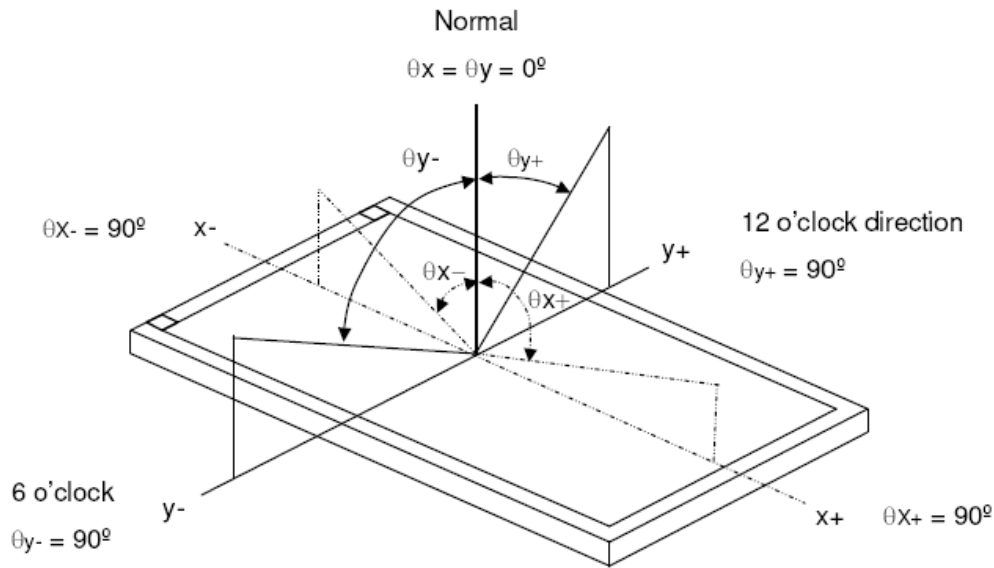
$$\text{CR} = \text{CR} (5)$$

CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (5).

*Note (2) Definition of Response Time (TR, TF):

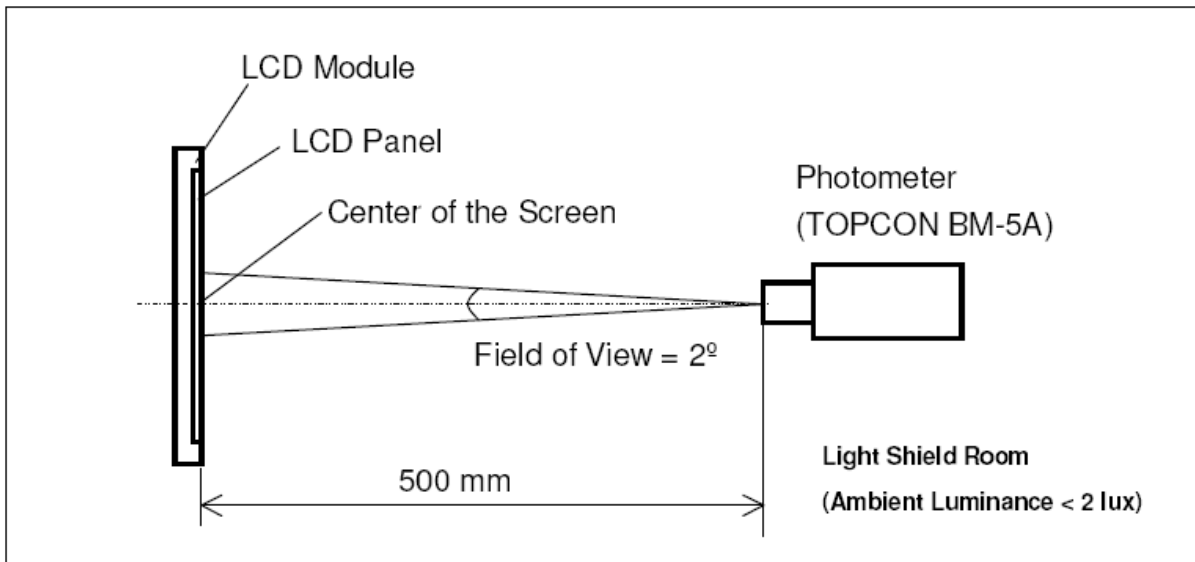


*Note(3) Definition of Viewing Angle

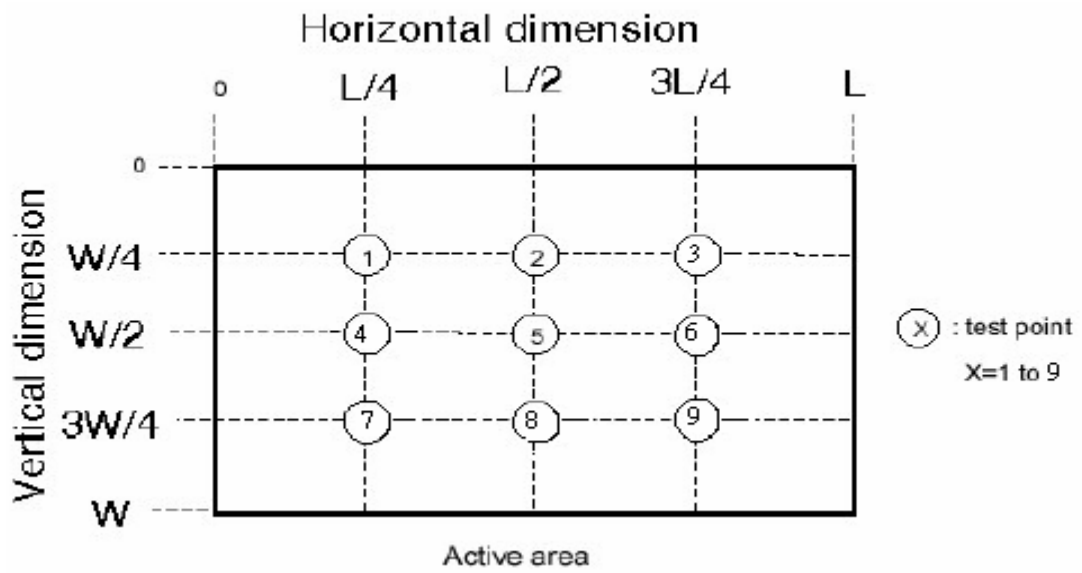


*Note (4) Measurement Set-Up:

The LCD module should be stabilized at a given temperature for 20 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 20 minutes in a windless room.



*Note (5)



$$\left(1 - \frac{\text{MAX Luminance} - \text{Average Luminance}}{\text{Average Luminance}} \right) \times 100\% \geq 60\%$$

10. TIMING SPECIFICATIONS

10.1 POWER SEQUENCE

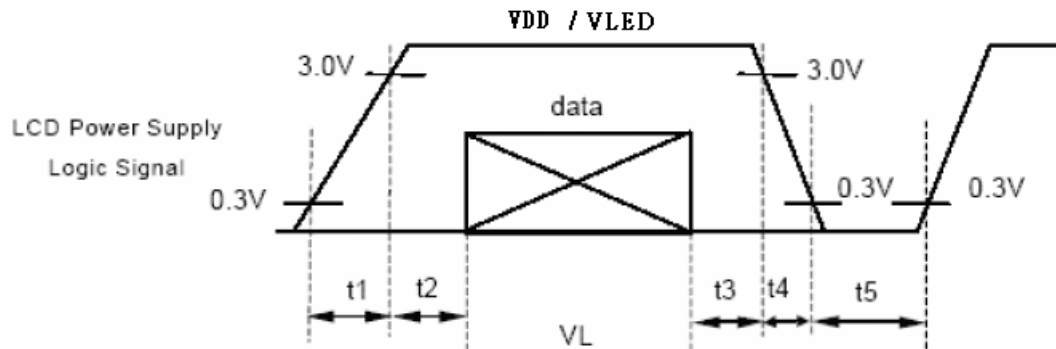
Power Signal sequence:

$t1 \leq 10\text{ms}$; $1 \text{ sec} \leq t5$

$200\text{ms} \leq t2$; $200\text{ms} \leq t6$

$0 < t3 \leq 50\text{ms}$; $200\text{ms} \leq t7$

$0 < t4 \leq 10\text{ms}$



10.2 AC ELECTRICAL CHARACTERISTICS

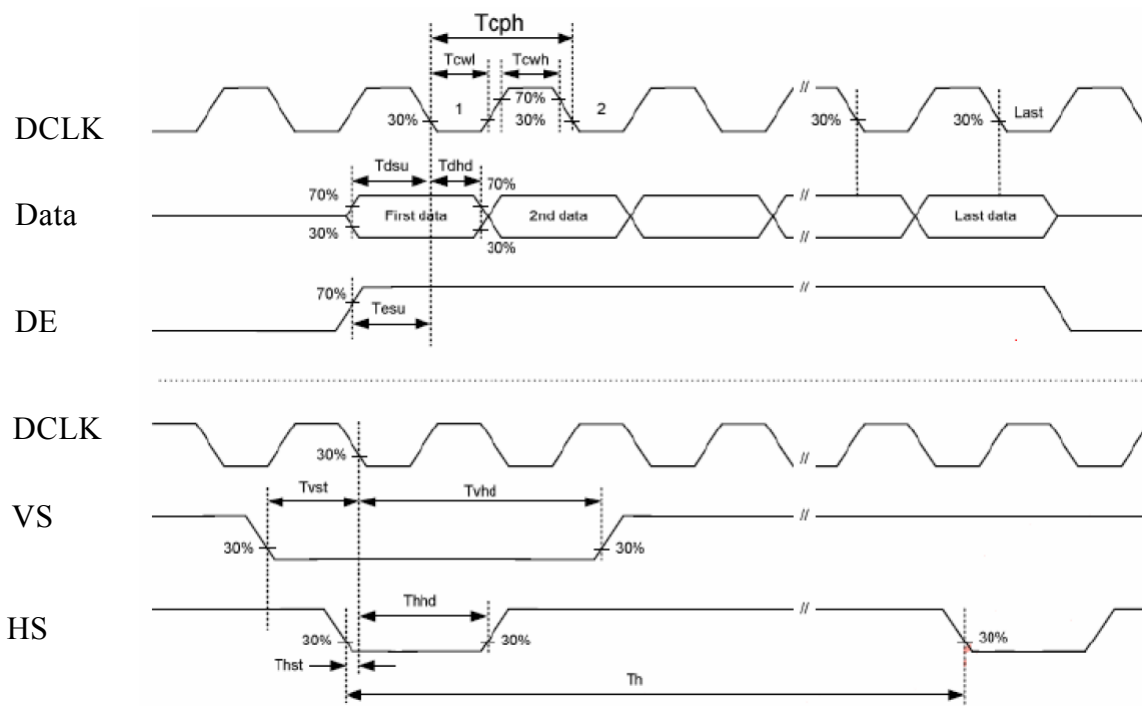
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
HS setup time	T_{hst}	8	-	-	ns	
HS hold time	T_{hhd}	8	-	-	ns	
VS setup time	T_{vst}	8	-	-	ns	
VS hold time	T_{vhd}	8	-	-	ns	
Data setup time	T_{dsu}	8	-	-	ns	
Data hold time	T_{dhhd}	8	-	-	ns	
DE setup time	T_{esu}	8	-	-	ns	
DE hole time	T_{ehd}	8	-	-	ns	
VDD Power On Slew rate	T_{POR}	-	-	20	ms	
RSTB pulse width	T_{Rst}	10	-	-	μs	
CLKIN cycle time	T_{coh}	20	-	-	ns	
CLKIN pulse duty	T_{cwh}	40	50	60	%	
Output stable time	T_{sst}	-	-	6	μs	

10.3 TIMING

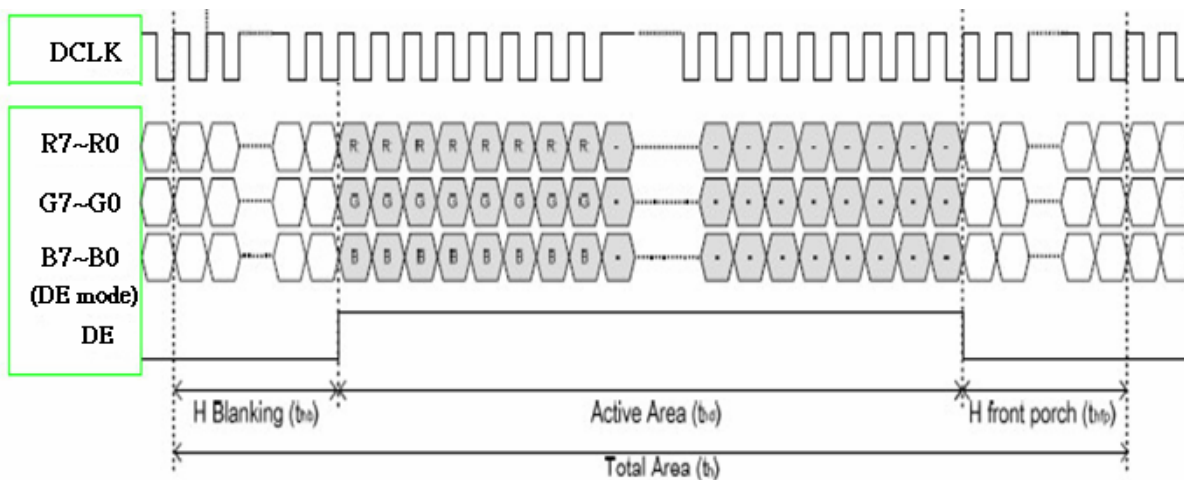
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Horizontal Display Area	Thd	-	800	-	DCLK	
DCLK Frequency	Fclk	-	40	50	MHz	
One Horizontal Line	Th	862	1056	1200	DCLK	
HS pulse width	Thpw	1	-	40	DCLK	
HS Back Porch (Blanking)	Thb	46	46	46	DCLK	
HS Front Porch	Thfp	16	210	354	DCLK	

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	REMARK
Vertical Display Area	tvd	-	600	-	TH	
VS period time	tv	624	635	700	TH	
VS pulse width	tvpw	1	-	20	TH	
VS Back Porch (Blanking)	tvb	23	23	23	TH	
VS Front Porch	tvfp	1	12	77	TH	

10.4 TIMING DIAGRAM



10.5 TIMING CHARACTERISTICS DIAGRAMS



11. RELIABILITY TEST

ENVIRONMENTAL TEST				
NO.	ITEM	CONDITIONS	TIME PERIOD	REMARK
1	High Temperature Storage	80°C	240HRS	
2	Low Temperature Storage	-30°C	240HRS	
3	High Temperature Operation	70°C	240HRS	NOTE(2)
4	Low Temperature Operation	-20°C	240HRS	NOTE(2)
5	Temperature Cycle	-30°C ← → 80°C (30min) (30min)	100CYCLE	NOTE(2)
6	High Temperature Humidity Operation	40°C 90%RH	240HRS	NOTE(2)

NOTE (1): a. THE MODULE SHOULD WORK PROPERLY.

b. BEFORE AND AFTER FUNCTION TEST, THE DIFFERENCE OF CONSUMPTIVE CURRENT SHOULD BE WITHIN 10%

NOTE (2): a. THE MODULE SHOULD WORK PROPERLY.

b. THE MODULE WON'T BE DEFORMATIVE, COLOR CHANGEABLE OR BROKEN.

c. THE MODULES CAN'T BE APART.

NOTE (3): BEFORE COSMETIC AND FUNCTION TEST, THE PRODUCT MUST HAVE ENOUGH RECOVERY TIME, AT LEAST 2 HOURS AT ROOM TEMPERATURE.

12. GENERAL PRECAUTIONS

12.1 SAFETY

Liquid crystal is poisonous. Do not put it in your mouth. If liquid crystal touches your skin or clothes, wash it off immediately by using soap and water.

12.2 HANDLING

- (1) The LCD panel is plate glass. Do not subject the panel to mechanical shock or to excessive force on its surface.
- (2) The polarizer attached to the display is easily damaged. Please handle it carefully to avoid scratch or other damages.
- (3) To avoid contamination on the display surface, do not touch the module surface with bare hands.
- (4) Keep a space so that the LCD panels do not touch other components.
- (5) Put cover board such as acrylic board on the surface of LCD panel to protect panel from damages.
- (6) Transparent electrodes may be disconnected if you use the LCD panel under environmental conditions where the condensation of dew occurs.
- (7) Do not leave module in direct sunlight to avoid malfunction of the ICs.

12.3 STATIC ELECTRICITY

- (1) Be sure to ground module before turning on power or operating module.
- (2) Do not apply voltage which exceeds the absolute maximum rating value.

12.4 STORAGE

- (1) Store the module in a dark room where must keep at $25\pm 10^{\circ}\text{C}$ and 65%RH or less.
- (2) Do not store the module in surroundings containing organic solvent or corrosive gas.
- (3) Store the module in an anti-electrostatic container or bag.

12.5 CLEANING

- (1) Do not wipe the polarizer with dry cloth. It might cause scratch.
- (2) Only use a soft sloth with IPA to wipe the polarizer, other chemicals might permanent damage to the polarizer.

12.6 WARRANTY

- (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 12 months since the date of shipping out under normal using and storage conditions.