

Version : 1.0

## TECHNICAL SPECIFICATION

MODEL NO : PD040QT2

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Date \_\_\_\_\_

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Confirmed By



Prepared By



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## Revision History

| Rev. | Issued | Date          | Revised | Contents |
|------|--------|---------------|---------|----------|
| 1.0  |        | June, 4, 2008 | New     |          |

## TECHNICAL SPECIFICATION CONTENTS

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## 1. Application

This data sheet applies to a color TFT LCD module, PD040QT2. This module applies to OA product (must use Analog to Digital driving board), which requires high quality flat panel display. If you must use in severe reliability environment, please don't extend over PVI's reliability test conditions.

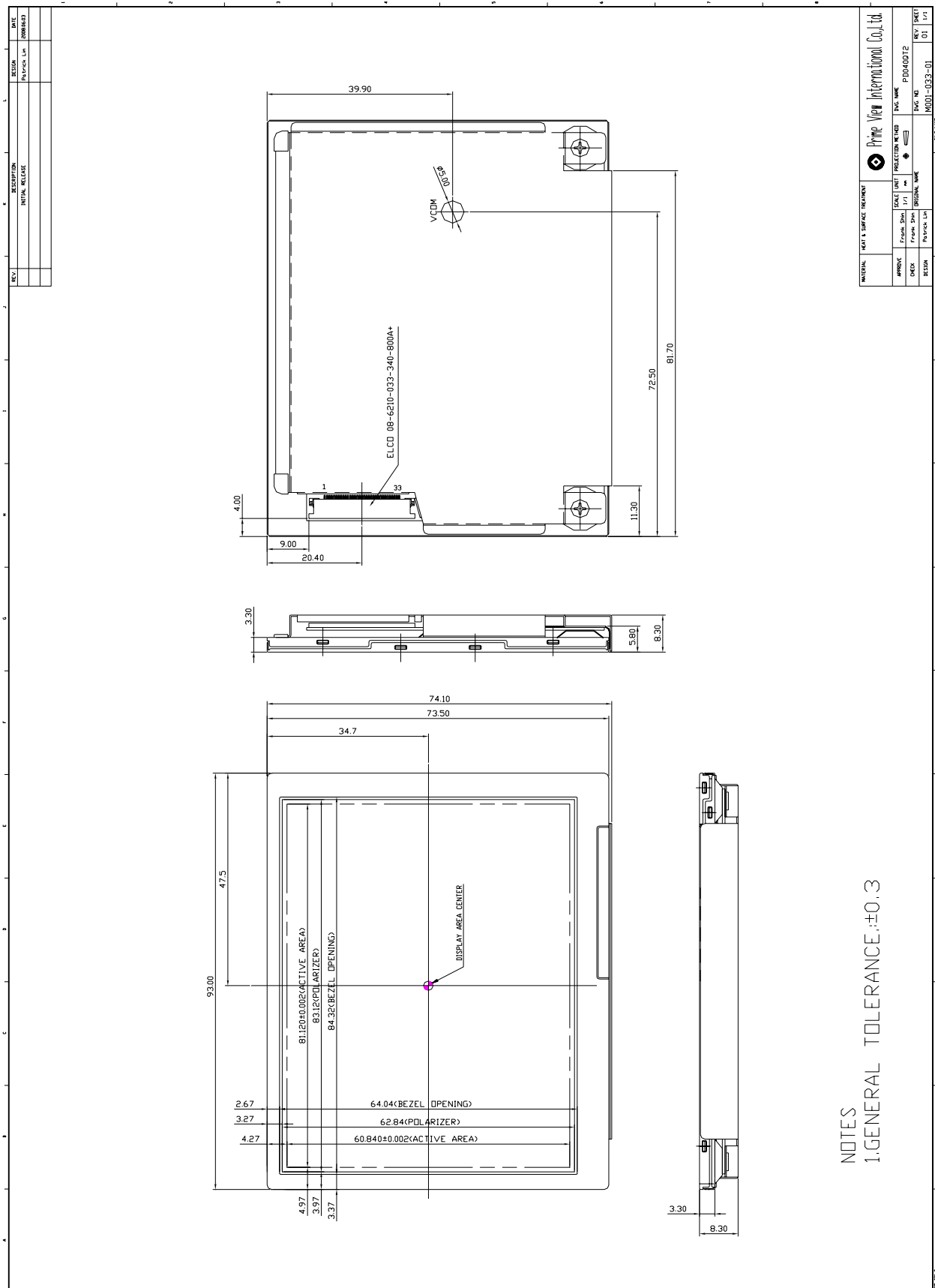
## 2. Features

- . Amorphous silicon TFT LCD panel with LED back-light unit
- . Pixel in stripe configuration
- . Slim and compact, designed for O/A application
- . TTL transmission interface

## 3. Mechanical Specifications

| Parameter                      | Specifications                    | Unit    |
|--------------------------------|-----------------------------------|---------|
| Screen Size                    | 4 (diagonal)                      | inch    |
| Display Format                 | 320×(RGB)×240                     | dot     |
| Active Area                    | 81.12 (H)×60.84 (V)               | mm      |
| Pixel Pitch                    | 0.2535(H)×0.2535 (V)              | mm      |
| Pixel Configuration            | Stripe                            |         |
| Display Colors                 | 262,144                           |         |
| Surface Treatment              | Anti-Glare +EWV                   |         |
| Back-light                     | 8-LEDs                            |         |
| Outline Dimension              | 93.00(W)×74.10 (H)×8.30 (D)(typ.) | mm      |
| Weight                         | 78±5                              | g       |
| Display mode                   | Normally white                    |         |
| Gray scale inversion direction | 6<br>(ref to Note 12-1 )          | o'clock |

#### 4. Mechanical Drawing of TFT-LCD Module



## 5. Input / Output Terminals

### 5-1) TFT-LCD Panel Driving

Connector type: ELCO 08-6210-033-340-800A+ , PIN No 33 pins, pitch=0.5mm

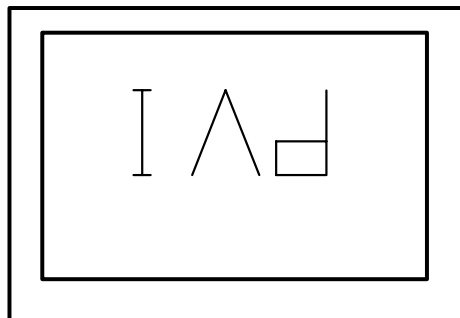
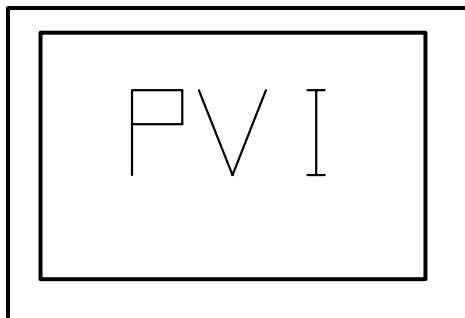
| Pin No | Symbol          | I/O | Description                                                                       | Remark  |
|--------|-----------------|-----|-----------------------------------------------------------------------------------|---------|
| 1      | GND             | -   | GND                                                                               |         |
| 2      | CK              | I   | Clock signal for sampling each data signal                                        |         |
| 3      | Hsync           | I   | Horizontal synchronous signal(negative)                                           |         |
| 4      | Vsync           | I   | Vertical synchronous signal(negative)                                             |         |
| 5      | GND             | -   | GND                                                                               |         |
| 6      | R0              |     | RED data signal(LSB)                                                              |         |
| 7      | R1              | I   | RED data signal                                                                   |         |
| 8      | R2              | I   | RED data signal                                                                   |         |
| 9      | R3              | I   | RED data signal                                                                   |         |
| 10     | R4              | I   | RED data signal                                                                   |         |
| 11     | R5              | I   | RED data signal(MSB)                                                              |         |
| 12     | GND             | -   | GND                                                                               |         |
| 13     | G0              | I   | GREEN data signal(LSB)                                                            |         |
| 14     | G1              | I   | GREEN data signal                                                                 |         |
| 15     | G2              | I   | GREEN data signal                                                                 |         |
| 16     | G3              | I   | GREEN data signal                                                                 |         |
| 17     | G4              | I   | GREEN data signal                                                                 |         |
| 18     | G5              | I   | GREEN data signal(MSB)                                                            |         |
| 19     | GND             | -   | GND                                                                               |         |
| 20     | B0              | I   | Blue data signal(LSB)                                                             |         |
| 21     | B1              | I   | Blue data signal                                                                  |         |
| 22     | B2              | I   | Blue data signal                                                                  |         |
| 23     | B3              | I   | Blue data signal                                                                  |         |
| 24     | B4              | I   | Blue data signal                                                                  |         |
| 25     | B5              | I   | Blue data signal(MSB)                                                             |         |
| 26     | GND             | -   | GND                                                                               |         |
| 27     | DENB            | I   | Signal to settle the horizontal display position(positive)                        | Note5-1 |
| 28     | V <sub>CC</sub> | -   | +3.3V power supply                                                                |         |
| 29     | V <sub>CC</sub> | -   | +3.3V power supply                                                                |         |
| 30     | R/L             | I   | Horizontal display mode select signal<br>L : Normal ,H : Left /Right reverse mode | Note5-2 |
| 31     | U/D             | I   | Vertical display mode select signal<br>L : Normal ,H :Up/Down reverse mode        | Note5-3 |
| 32     | LED_A           | I   | LED Power (Anode)                                                                 |         |
| 33     | LED_C           | I   | LED Power (Cathode)                                                               |         |

Note5-1 : The horizontal display start timing is settled in accordance with rising of DENB signal.  
In case ENAB is fixed "Low", the horizontal start timing is determined as described in 10-2. Don't keep DENB "High" during operation.

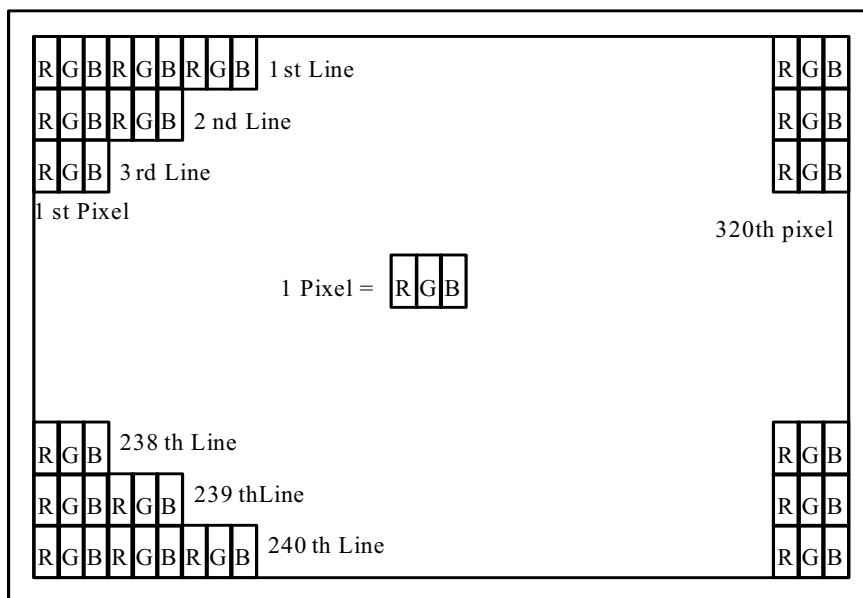
Note 5-2 , 5-3 : The definitions of U/D & R/L

U/D( PIN31)=Low R/L( PIN30)= Low

U/D( PIN31)= High R/L ( PIN30)= High



## 6. Pixel Arrangement



## 7. Absolute Maximum Ratings:

GND=0V, Ta=25°C

| Parameters            | Symbol          | MIN  | MAX. | Unit | Remark |
|-----------------------|-----------------|------|------|------|--------|
| Supply Voltage        | V <sub>CC</sub> | 0    | 3.6  | V    |        |
| Input Signals Voltage | V <sub>IN</sub> | -0.3 | 4    | V    |        |

## 8. Electrical Characteristics

### 8-1) Recommended Operating Conditions:

GND=0V, Ta=25°C

| Item                     | Symbol     | Min.     | Typ.               | Max. | Unit               | Remark   |
|--------------------------|------------|----------|--------------------|------|--------------------|----------|
| Supply Voltage           | $V_{CC}$   | 3.0      | 3.3                | 3.6  | V                  |          |
| Current Dissipation      | $I_{CC}$   | -        | 50                 | -    | mA                 | Note 8-1 |
| Total power consumption  | $P_{CC}$   | 150      | 165                | 180  | mW                 |          |
| Digital input voltage    | High Level | $V_{IH}$ | 0.7V <sub>CC</sub> | -    | 0.3V <sub>CC</sub> |          |
|                          | Low Level  | $V_{IL}$ | 0                  | -    | V <sub>CC</sub>    |          |
| V <sub>com</sub> Voltage | $V_{com}$  | -        | 4                  | -    | V                  |          |

Note 8-1 : To test the current dissipation of V<sub>CC</sub>, using the “color bars” testing pattern shown as below.

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|

1. White
2. Yellow
3. Cyan
4. Green
5. Magenta
6. Red
7. Blue
8. Black

I<sub>DD</sub> current dissipation testing pattern

### 7-2) Recommended Driving Condition for Back Light

Ta=25°C

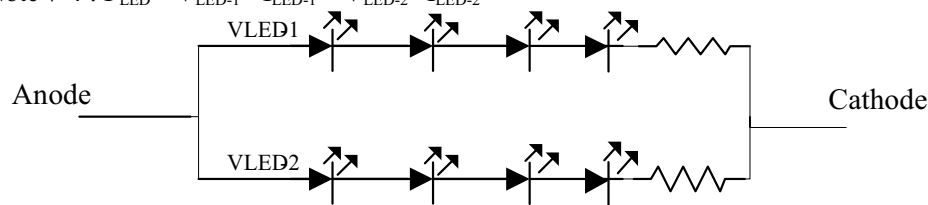
| Parameter                       | Symbol    | Min. | Typ. | Max. | Unit | Remark         |
|---------------------------------|-----------|------|------|------|------|----------------|
| Supply voltage of LED backlight | $V_{LED}$ | -    | -    | (14) | V    | Note 7-2       |
| Supply current of LED backlight | $I_{LED}$ | -    | 20   | -    | mA   | Note 7-3       |
| Backlight Power Consumption     | $P_{LED}$ | -    | -    | 560  | mW   | Note 7-2 、 7-4 |

Note 7-2 : I<sub>LED</sub>= 20mA, constant current

Note 7-3 : The LED driving condition is defined for each LED module. (4 LED Serial)

Input current = 20mA \* 2 = 40mA

Note 7-4 :  $P_{LED} = V_{LED-1} * I_{LED-1} + V_{LED-2} * I_{LED-2}$



**9. Display Color and Gray Scale Reference**

| Color        |            | Input Color Data |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|--------------|------------|------------------|----|----|----|----|----|-------|----|----|----|----|----|------|----|----|----|----|----|
|              |            | Red              |    |    |    |    |    | Green |    |    |    |    |    | Blue |    |    |    |    |    |
|              |            | R5               | R4 | R3 | R2 | R1 | R0 | G5    | G4 | G3 | G2 | G1 | G0 | B5   | B4 | B3 | B2 | B1 | B0 |
| Basic Colors | Black      | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Red (63)   | 1                | 1  | 1  | 1  | 1  | 1  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Green 63)  | 0                | 0  | 0  | 0  | 0  | 0  | 1     | 1  | 1  | 1  | 1  | 1  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Blue (63)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 1    | 1  | 1  | 1  | 1  | 1  |
|              | Cyan       | 0                | 0  | 0  | 0  | 0  | 0  | 1     | 1  | 1  | 1  | 1  | 1  | 1    | 1  | 1  | 1  | 1  | 1  |
|              | Magenta    | 1                | 1  | 1  | 1  | 1  | 1  | 0     | 0  | 0  | 0  | 0  | 0  | 1    | 1  | 1  | 1  | 1  | 1  |
|              | Yellow     | 1                | 1  | 1  | 1  | 1  | 1  | 1     | 1  | 1  | 1  | 1  | 1  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | White      | 1                | 1  | 1  | 1  | 1  | 1  | 1     | 1  | 1  | 1  | 1  | 1  | 1    | 1  | 1  | 1  | 1  | 1  |
| Red          | Red (00)   | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Red (01)   | 0                | 0  | 0  | 0  | 0  | 1  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Red (02)   | 0                | 0  | 0  | 0  | 1  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Darker     |                  |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|              | ↓          | ↓                | ↓  | ↓  | ↓  | ↓  | ↓  | ↓     | ↓  | ↓  | ↓  | ↓  | ↓  | ↓    | ↓  | ↓  | ↓  | ↓  | ↓  |
|              | Brighter   |                  |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|              | Red (61)   | 1                | 1  | 1  | 1  | 0  | 1  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Red (62)   | 1                | 1  | 1  | 1  | 1  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Red (63)   | 1                | 1  | 1  | 1  | 1  | 1  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
| Green        | Green (00) | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Green (01) | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 1  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Green (02) | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 1  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Darker     |                  |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|              | ↓          | ↓                | ↓  | ↓  | ↓  | ↓  | ↓  | ↓     | ↓  | ↓  | ↓  | ↓  | ↓  | ↓    | ↓  | ↓  | ↓  | ↓  | ↓  |
|              | Brighter   |                  |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|              | Green (61) | 0                | 0  | 0  | 0  | 0  | 0  | 1     | 1  | 1  | 1  | 0  | 1  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Green (62) | 0                | 0  | 0  | 0  | 0  | 0  | 1     | 1  | 1  | 1  | 1  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Green (63) | 0                | 0  | 0  | 0  | 0  | 0  | 1     | 1  | 1  | 1  | 1  | 1  | 0    | 0  | 0  | 0  | 0  | 0  |
| Blue         | Blue (00)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 0  |
|              | Blue (01)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 0  | 1  |
|              | Blue (02)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 0    | 0  | 0  | 0  | 1  | 0  |
|              | Darker     |                  |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|              | ↓          | ↓                | ↓  | ↓  | ↓  | ↓  | ↓  | ↓     | ↓  | ↓  | ↓  | ↓  | ↓  | ↓    | ↓  | ↓  | ↓  | ↓  | ↓  |
|              | Brighter   |                  |    |    |    |    |    |       |    |    |    |    |    |      |    |    |    |    |    |
|              | Blue (61)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 1    | 1  | 1  | 1  | 0  | 1  |
|              | Blue (62)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 1    | 1  | 1  | 1  | 1  | 0  |
|              | Blue (63)  | 0                | 0  | 0  | 0  | 0  | 0  | 0     | 0  | 0  | 0  | 0  | 0  | 1    | 1  | 1  | 1  | 1  | 1  |

## 10. Interface Timing

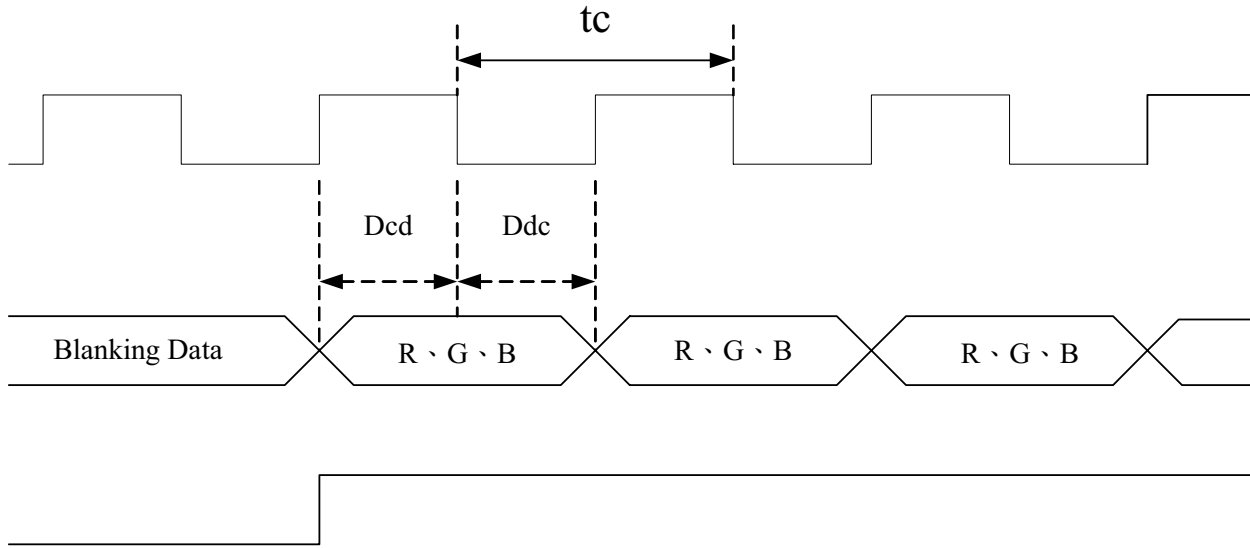
### 10-1) Timing Parameters

AC Electrical Characteristics ( $V_{CC} = +3.3V, GND = 0V, T_a = 25^{\circ}C$ )

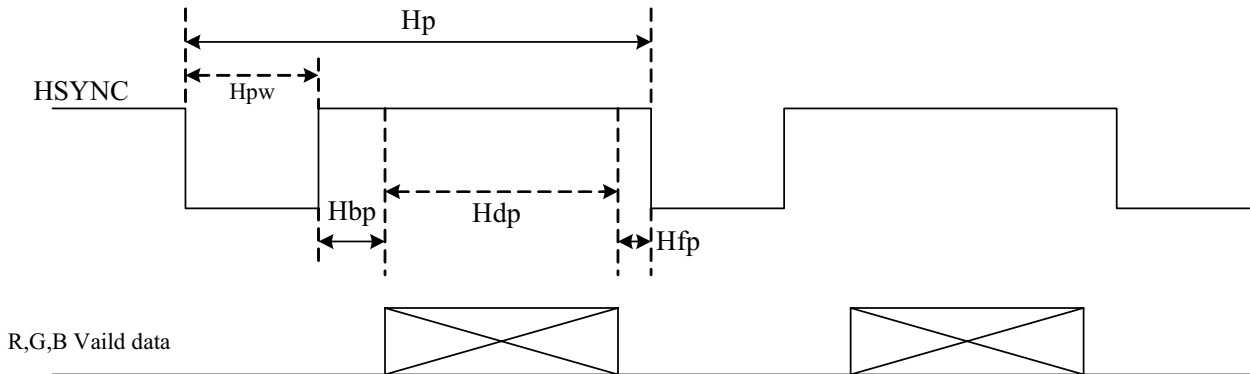
|              |                                  | Symbol          | Min. | Typ. | Max.  | Unit |
|--------------|----------------------------------|-----------------|------|------|-------|------|
| Power supply |                                  | VCC             | 3.0  | 3.3  | 3.6   | V    |
| CLK          | Frequency                        | 1/tc            | -    | 6.3  | 7.0   | MHz  |
|              |                                  | tc              | -    | 50   | -     | ns   |
| HSYNC        | Period                           | Hp              | -    | 63.6 | -     | us   |
|              |                                  |                 | -    | 400  | -     | tc   |
|              | Display period                   | Hdp             | -    | 320  | -     | tc   |
|              | Pulse width                      | Hp <sub>w</sub> | 5    | 30   | -     | tc   |
|              | Back-porch                       | Hb <sub>p</sub> | -    | 38   | -     | tc   |
|              | Front-porch                      | Hf <sub>p</sub> | -    | 12   | -     | tc   |
|              | Hp <sub>w</sub> +Hb <sub>p</sub> |                 | -    | 68   | -     | tc   |
|              | Hsync-CLK                        | Hhc             | 10   | -    | Tc-10 | ns   |
| VSYNC        | Period                           | Vp              | -    | 16.8 | -     | ms   |
|              |                                  |                 | -    | 262  | 288   | Hp   |
|              | Display period                   | Vdp             | -    | 240  | -     | Hp   |
|              | Pulse width                      | Vp <sub>w</sub> | -    | 3    | -     | Hp   |
|              | Back-porch                       | Vb <sub>p</sub> | -    | 15   | -     | Hp   |
|              | Front-porch                      | Vf <sub>p</sub> | -    | 6    | -     | Hp   |
|              | Vp <sub>w</sub> +Vb <sub>p</sub> |                 | -    | 18   | -     | Hp   |
| DENB         | Horizontal scanning period       | T1              | -    | 400  | -     | tc   |
|              | Horizontal display period        | T2              | -    | 320  | -     | tc   |
|              | Vertical display period          | T3              | -    | 240  | -     | T1   |
|              | Frame cycling period             | T4              | -    | 262  | 288   | T1   |
| R,G,B        | CLK-DATA                         | Dcd             | 10   | -    | -     | ns   |
|              | DATA-CLK                         | Ddc             | 8    | -    | -     | ns   |

## 10-2) Timing Diagram

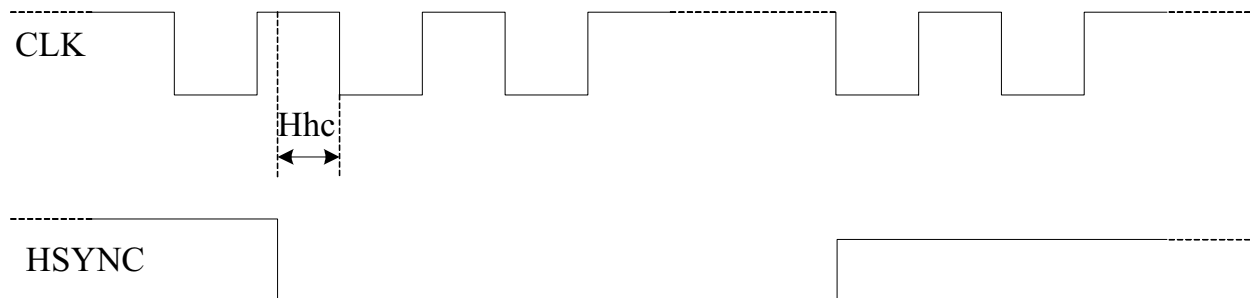
### a.1 Input signal range



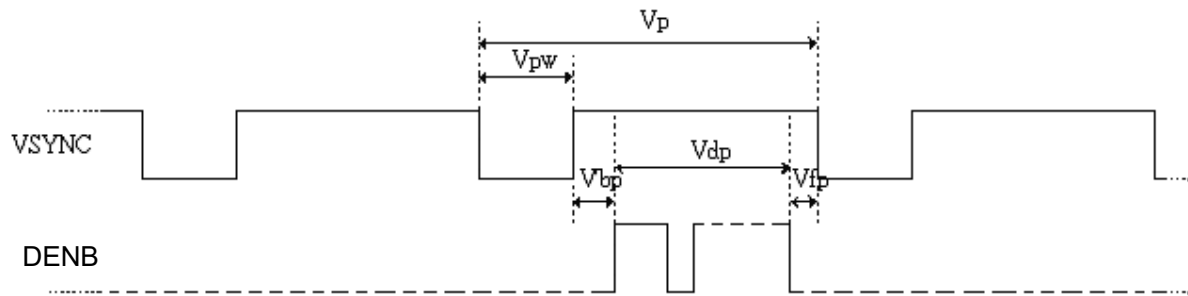
### a.2 HSYNC timing



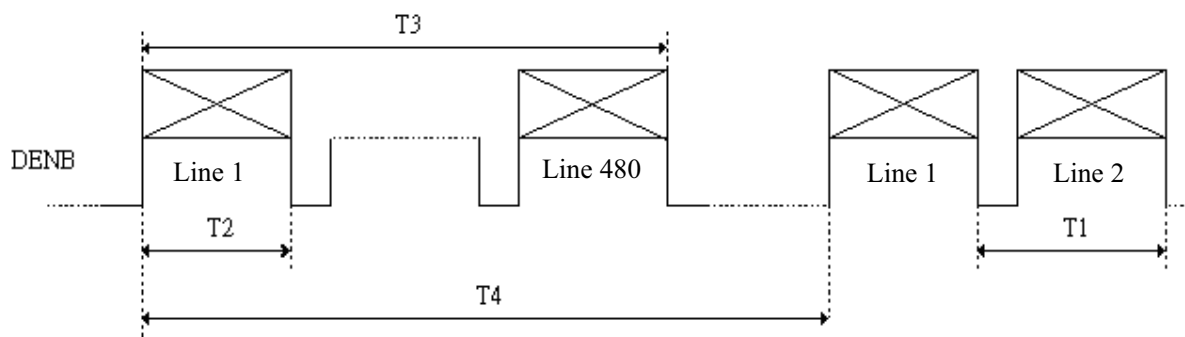
### a.3 CLK, HSYNC relationship



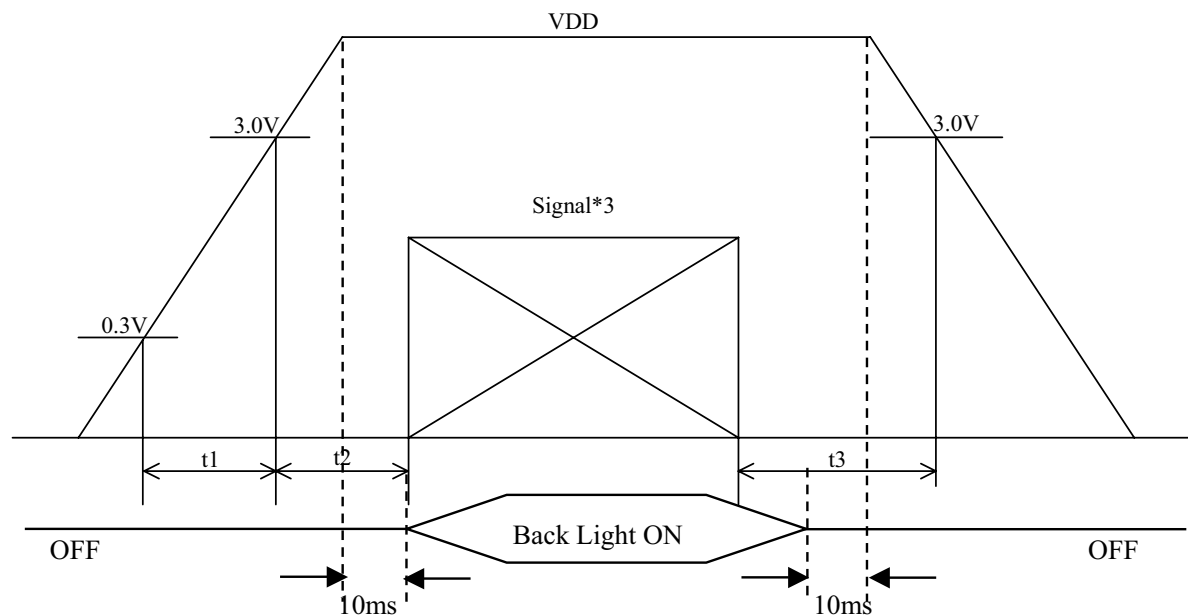
#### a.4 VSYNC timing



#### a.5 DENB timing



## 11. Power On Sequence



1.  $0 < t_1 \leq 20\text{ms}$
2.  $0 < t_2 \leq 50\text{ms}$
3.  $0 < t_3 \leq 1\text{s}$

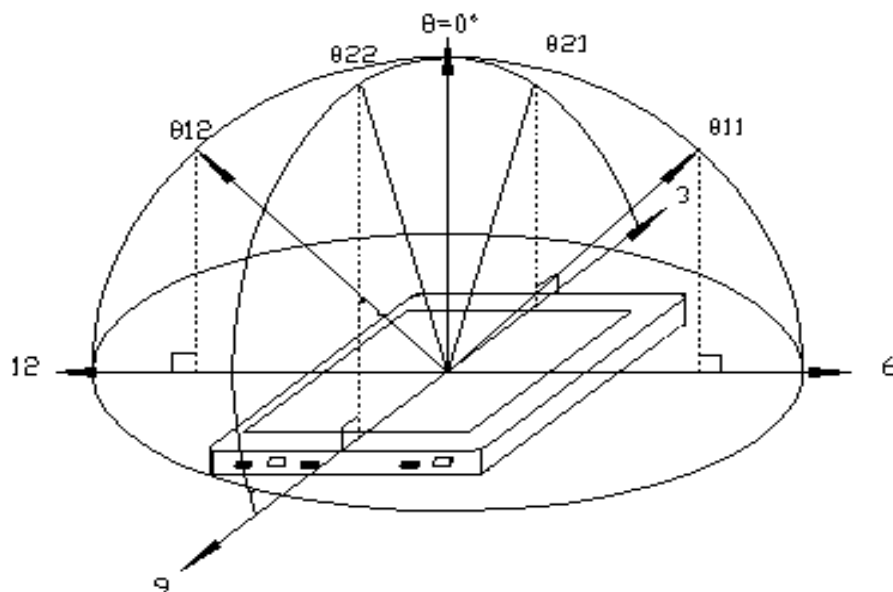
## 12. Optical Characteristics

### 12-1) Specification:

 $T_a = 25^\circ\text{C}$ 

| Parameter          | Symbol     | Condition                  | MIN.  | TYP.  | MAX. | Unit              | Remarks   |
|--------------------|------------|----------------------------|-------|-------|------|-------------------|-----------|
| Viewing Angle      | Horizontal | $\theta_{21}, \theta_{22}$ | 75    | 80    | ---  | deg               | Note 12-1 |
|                    | Vertical   | $\theta_{12}$              | 45    | 50    | ---  | deg               |           |
|                    |            | $\theta_{11}$              | 55    | 60    | ---  | deg               |           |
| Contrast Ratio     | CR         | At optimized Viewing angle | 200   | 400   | ---  |                   | Note 12-2 |
| Luminance          | L          | $\theta = 0^\circ$         | 300   | 350   | ---  | cd/m <sup>2</sup> |           |
| White Chromaticity | x          | $\theta = 0^\circ$         | 0.26  | 0.30  | 0.34 |                   |           |
|                    | y          | $\theta = 0^\circ$         | 0.29  | 0.33  | 0.37 |                   |           |
| Response time      | Rise       | Tr                         | ---   | 15    | 30   | ms                | Note 12-3 |
|                    | Fall       | Tf                         | ---   | 25    | 50   | ms                |           |
| Uniformity         | U          | -                          | 75    | 80    | ---  | %                 | Note 12-5 |
| Cross Talk Ratio   | CTK        | -                          | ---   | ---   | 3.5  | %                 | Note 12-6 |
| LED Life Time      |            | +25°C                      | 20000 | 30000 | ---  | hrs               | Note 12-4 |

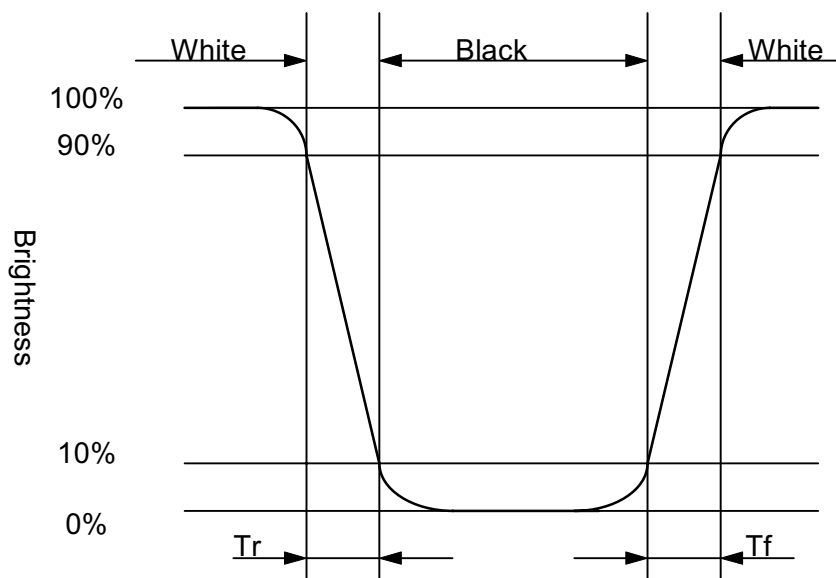
Note 12-1 : The definitions of viewing angles



Note 12-2 :  $CR = \frac{\text{Luminance when Testing point is White}}{\text{Luminance when Testing point is Black}}$

Contrast Ratio is measured in optimum common electrode voltage.

Note 12-3 : The definition of response time :



Note 12-4 : The "LED Life time " is defined as the module brightness decrease to 50% original Brightness that the ambient temperature is 25°C and  $I_{LED} = 40mA$

Note 12-5: The uniformity of LCD is defined as

$$U = \frac{\text{The Minimum Brightness of the 9 testing Points}}{\text{The Maximum Brightness of the 9 testing Points}}$$

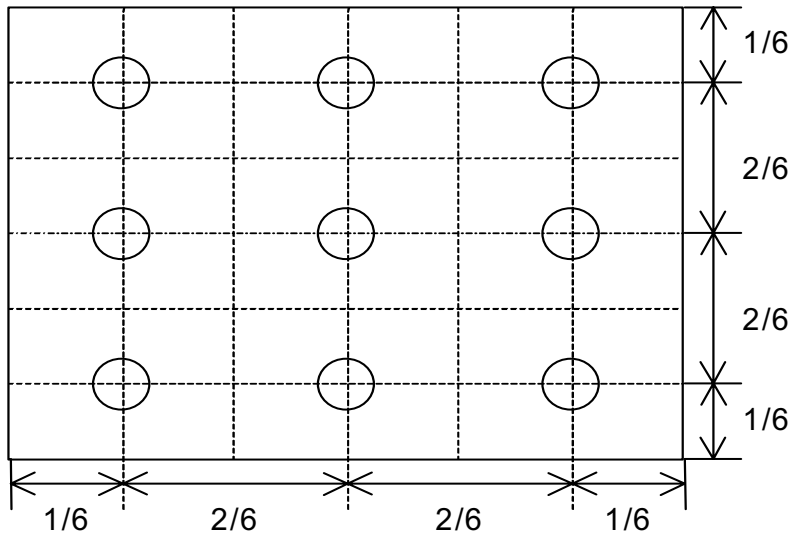
Luminance meter : BM-5A or BM-7 fast(TOPCON)

Measurement distance : 500 mm +/- 50 mm

Ambient illumination : < 1 Lux

Measuring direction : Perpendicular to the surface of module

The test pattern is white



Note 12-6: Cross Talk (CTK) =  $\frac{|YA - YB|}{YA} \times 100\%$

YA: Brightness of Pattern A

YB: Brightness of Pattern B

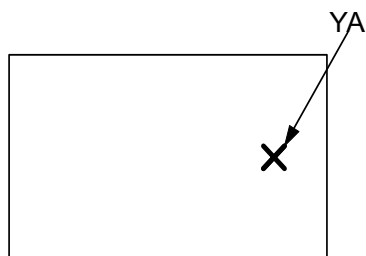
Luminance meter : BM 5A (TOPCON)

Measurement distance : 500 mm +/- 50 mm

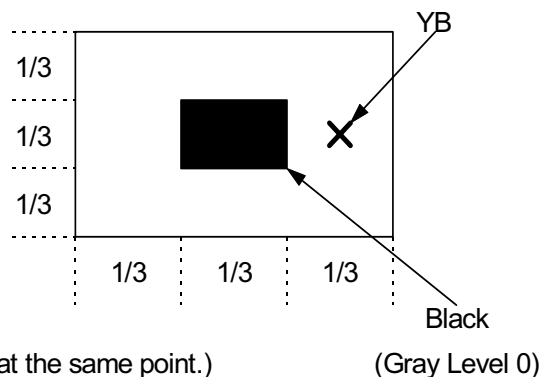
Ambient illumination : < 1 Lux

Measuring direction : Perpendicular to the surface of module

Pattern A  
(Gray Level 31)



Pattern B  
(Gray Level 31, central  
black box exclusive)



**X**: Measuring Point (A and B are at the same point.)

(Gray Level 0)

### 13. Handling Cautions

#### 13-1) Mounting of module

- A) Please power off the module when you connect the input/output connector.
- B) Polarizer which is made of soft material and susceptible to flaw must be handled carefully.
- C) Protective film (Laminator) is applied on surface to protect it against scratches and dirt.
- D) Please following the tear off direction as figure 13-1 to remove the protective film as slowly as possible, so that electrostatic charge can be minimized.

#### 13-2) Precautions in mounting

- A) When metal part of the TFT-LCD module (shielding lid and rear case) is soiled, wipe it with soft dry cloth.
- B) Wipe off water drops or finger grease immediately. Long contact with water may cause discoloration or spots.
- C) TFT-LCD module uses glass which breaks or cracks easily if dropped or bumped on hard surface. Please handle with care.
- D) Since CMOS LSI is used in the module. So take care of static electricity and earth yourself when handling.

#### 13-3) Adjusting module

- A) Adjusting volumes on the rear face of the module have been set optimally before shipment.
- B) Therefore, do not change any adjusted values. If adjusted values are changed, the specifications described may not be satisfied.

#### 13-4) Others

- A) Do not expose the module to direct sunlight or intensive ultraviolet rays for many hours.
- B) Store the module at a room temperature place.
- C) The voltage of beginning electric discharge may over the normal voltage because of leakage current from approach conductor by to draw lump read lead line around.
- D) If LCD panel breaks, it is possibly that the liquid crystal escapes from the panel.  
Avoid putting it into eyes or mouth. When liquid crystal sticks on hands, clothes or feet.  
Wash it out immediately with soap.
- E) Observe all other precautionary requirements in handling general electronic components.
- F) Please adjust the voltage of common electrode as material of attachment by 1 module.

#### 13-5) Polarizer mark

The polarizer mark is to describe the direction of view angle film how to mach up with the rubbing direction.

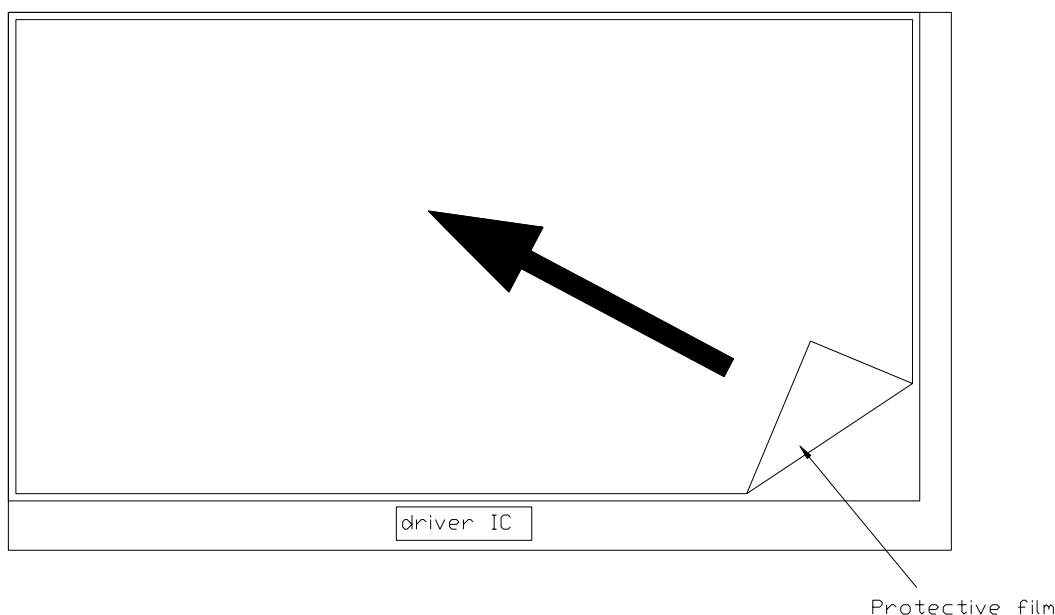


Figure 13-1 the way to peel off protective film

## 14. Reliability Test

| No | Test Item                                       | Test Condition                                                                                                  |
|----|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1  | High Temperature Storage Test                   | Ta = +85℃, 240 hrs                                                                                              |
| 2  | Low Temperature Storage Test                    | Ta = -40℃, 240 hrs                                                                                              |
| 3  | High Temperature Operation Test                 | Ta = +85℃, 240 hrs                                                                                              |
| 4  | Low Temperature Operation Test                  | Ta = -30℃, 240 hrs                                                                                              |
| 5  | High Temperature & High Humidity Operation Test | Ta = +60℃, 90%RH, 240 hrs                                                                                       |
| 6  | Thermal Cycling Test<br>(non-operating)         | -30℃→+80℃, 200 Cycles,<br>30 min 30 min                                                                         |
| 7  | Vibration Test<br>(non-operating)               | Frequency:10~55Hz<br>Amplitude: 1.5mm<br>Sweep time:11 mins<br>Test Period:6 Cycles for each direction of X,Y,Z |
| 8  | Shock Test<br>(non-operating)                   | 100G, 6ms<br>Direction : ±X, ±Y, ±Z<br>Cycle : 3 times                                                          |
| 9  | Electrostatic Discharge Test<br>(non-operating) | 150pF, 330Ω<br>Air : ±15KV ; Contact : ±8KV<br>10 times/point, 5 points/panel face                              |

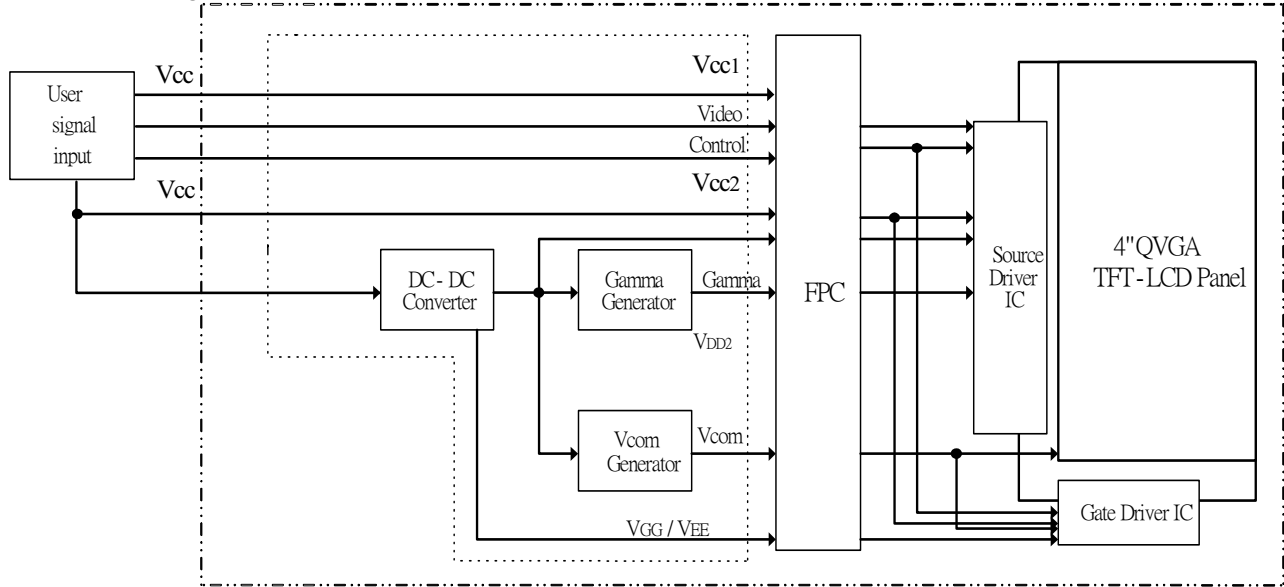
Ta: ambient temperature

Note : The protective film must be removed before temperature test.

[Criteria]

In the standard conditions, there is not display function NG issue occurred. (including : line defect ,no image).All the cosmetic specification is judged before the reliability stress.

## 15. Block Diagram



## 16. Packing

| ZONE | REV. | DOCUMENT NO. | DESCRIPTION | DATE | REV.BY |
|------|------|--------------|-------------|------|--------|
|------|------|--------------|-------------|------|--------|

**NOTE:**

1. One layer include: 1 piece of cushion sheet, 9 pcs module & 1 piece of tray.
2. Q'TY: 72 pcs module/carton.
3. Dimension: 455\*375\*190mm
4. Weight: 8 KG
5. Tray 需180°交叉堆疊，堆疊後可從側邊檢視圓弧防呆方向是否正確

| ITEM | PART NO.   | DESCRIPTION       | QTY | REMARK |
|------|------------|-------------------|-----|--------|
| 6    | 50-0100091 | CARTON INTERNAL   | 1   |        |
| 5    | 50-0500041 | 擋口袋450*380*700mm  | 1   | 抗靜電    |
| 4    |            | PD040QT2          | 72  |        |
| 3    | 50-0200106 | EPE CUSHION SHEET | 8   | 抗靜電    |
| 2    | 50-0301861 | TRAY              | 9   | 抗靜電    |
| 1    | 50-0300491 | EPE FOAM          | 2   |        |

| MTL.SPEC. |             | UNSPECIFIED TOL'S |         | REMARK |         |
|-----------|-------------|-------------------|---------|--------|---------|
|           |             | ANGLE             |         |        |         |
|           |             | ROUGHNESS         |         |        |         |
| APPROVE   | Frank Shin  | '08.08.06         | SCALE   | UNIT   | SHEET   |
| CHECK     | Frank Shin  | '08.08.06         |         |        | 1 OF 1  |
| DESIGN    | Patrick Lin | '08.08.06         | MTL.NO. |        | DWG.NO. |

| DWG.TITLE        |  | REV. | SIZE |
|------------------|--|------|------|
| PD040QT2 PACKING |  | 02   | A4   |

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