

# 1. GENERAL SPECIFICATION

## 1.1 Description

The G08021AG01A2 is a color active matrix Thin Film Transistor (TFT) Liquid Crystal Display (LCD) that uses amorphous silicon(a-Si) TFT as a switching device. This model is composed of a single 8.0 inches transmissive type main TFT-LCD panel. The resolution of the panel is 800RGBx1280 pixels and can display up to 16.7M color.

## 1.2 Feature

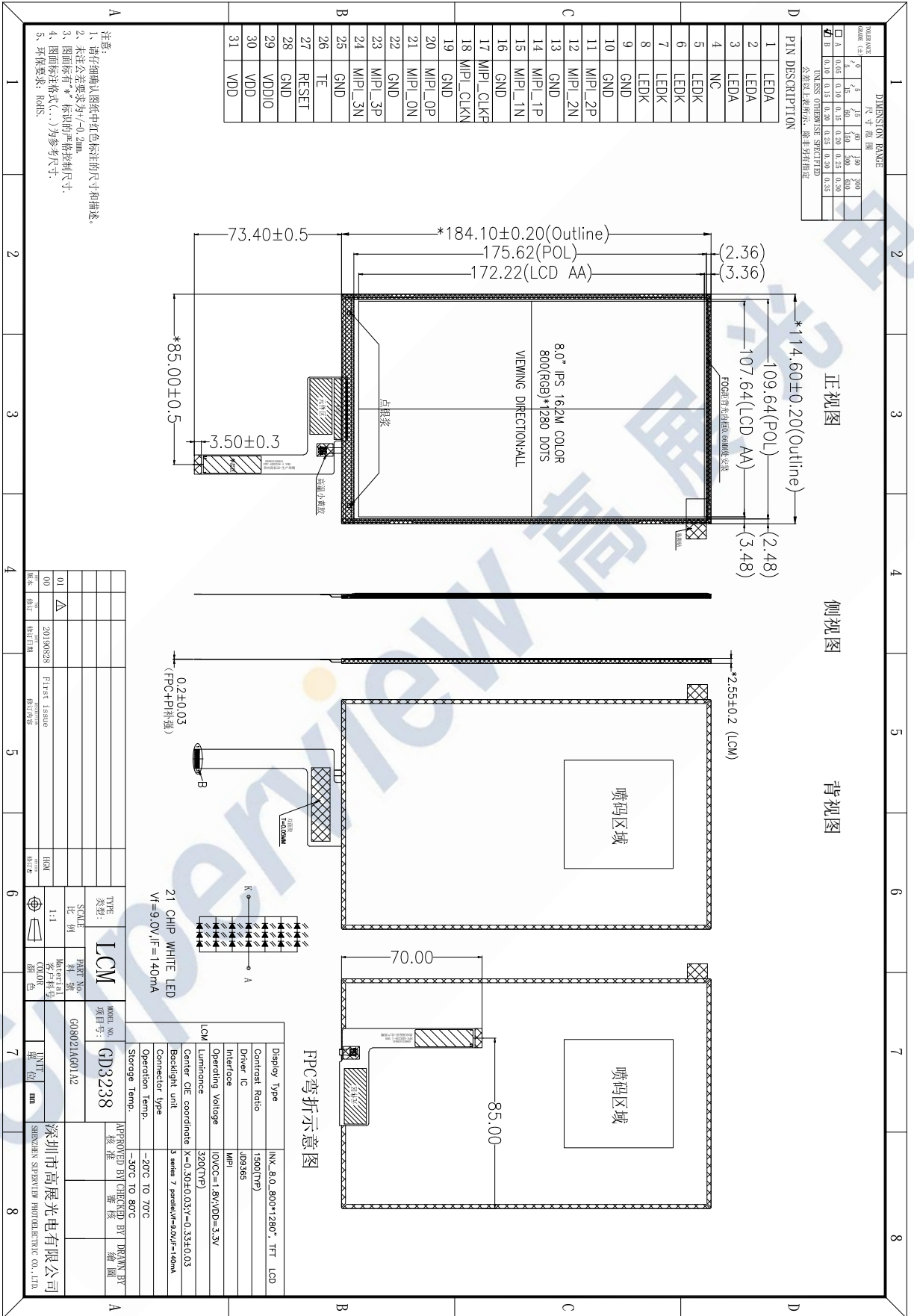
- IPS type for main TFT-LCD panel
- Structure COG+FPC+BL+CTP
- Full, Normal (Still), Partial, Sleep mode are available

## 1.3 General Specification

No.	Item	Specification	Unit	Remark
1	LCD Size	8.0	inch	-
2	Panel Type	a-Si TFT	-	-
3	Resolution	800 x (RGB) x 1280	pixel	-
4	Display Mode	Normally Black, Transmissive mode	-	-
5	Display Number of Colors	16.7M	-	-
6	Viewing Direction	Free	-	Note
7	Contrast Ratio	1500(Typ)	-	-
8	Luminance	300(Typ)	cd/m <sup>2</sup>	-
9	Module Size	114.60(W ) x184.10(L) x 2.55(T)	mm	Note
10	Active Area	107.64(W) x 172.22(L)	mm	Note
11	Pixel Pitch	0.13455(W) x0.13455(H)	mm	-
12	Driver IC	JD9365	-	-
13	Light Source	21 LEDs White	-	-
14	Interface	MIPI	-	-
15	Operating Temperature	-20~70	°C	-
16	Storage Temperature	-30~80	°C	-

Note: Please refer to the mechanical drawing.

# 2. MECHANICAL DRAWING



### 3. ELECTRICAL SPECIFICATION for TFT

#### 3.1. TFT ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN	TYP	MAX	
Power Supply for Analog	VCC	Ta=25 °C	-0.3	-	5.5	V
Power Supply for Digital IO	IOVCC	Ta=25 °C	-0.3	-	3.5	V

Note: Permanent damage to the device may occur if maximum values are exceeded or reverse voltage is applied.

#### 3.2. TFT TYPICAL OPERATION CONDITION

##### 3.2.1 TFT DC Characteristics

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN	TYP	MAX	
Power Supply for Analog	VDD	Ta=25 °C	3.3	3.3	3.6	V
Power Supply for Digital IO	IOVDD	Ta=25 °C	1.65	1.8	3.3	V
Input Signal "H" Level	V <sub>IH</sub>	-	0.7IOVDD	-	IOVDD	V
Input Signal "L" Level	V <sub>IL</sub>	-	0	-	0.3IOVDD	V
Output Signal "H" Level	V <sub>OH</sub>	I <sub>OH</sub> =-1.0mA	0.8IOVDD	-	IOVDD	V
Output Signal "L" Level	V <sub>OL</sub>	I <sub>OL</sub> =1.0mA	0	-	0.2IOVDD	V
Frame Frequency	FRAME	-	50	60	80	Hz

Note: To prevent IC latch up or DC operation in LCD panel, the power on/off sequence should follow the driver IC specification.

## 4.LCD OPTICAL CHARACTERISTICS

( $T_a=+25^{\circ}\text{C}$ ,  $V_{CI}=+2.85\text{V}$   $\text{IOVCC}=+1.8\text{V}$ ,  $I_B=20\text{mA}$ )

Item	Symbol	Condition	Values			Unit	Remark	
			Min.	Typ.	Max.			
Viewing Angle Range	Left	$\theta_L$	$\text{CR} \geq 10$	75	80	-	degree	Note 1
	Right	$\theta_R$		75	80	-		
	Top	$\Phi_T$		75	80	-		
	Bottom	$\Phi_B$		75	80	-		
Response Time	$T_{\text{on}} + T_{\text{off}}$	Normal $\theta = \phi = 0^{\circ}$	-	30	35	ms	Note 2	
Contrast Ratio	CR	Normal $\theta = \phi = 0^{\circ}$	1200	1500	-	-	Note 3	
Luminance	L	Normal $\theta = \phi = 0^{\circ}$	--	320	--	$\text{cd}/\text{m}^2$	Note 4	
Color Chromaticity	White	X	Normal $\theta = \phi = 0^{\circ}$	+0.03	0.30	-0.03	-	Note 5
		Y		0.33				
Transmittance	Trans		4.61	5.43	-	%	Note 6	

Note 1: Definition of viewing angle range

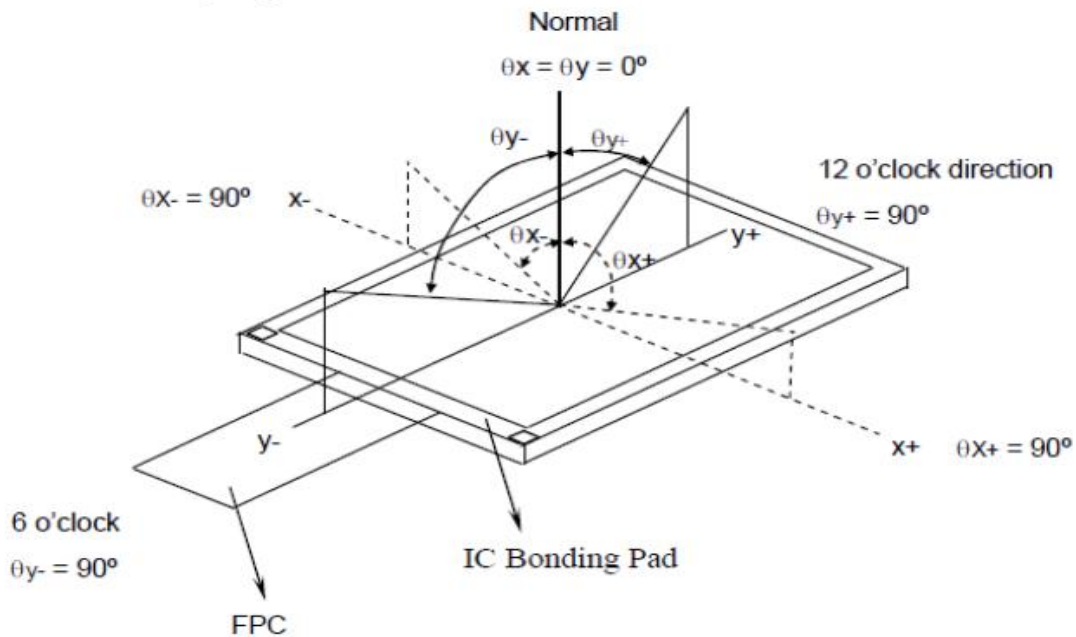


Fig. 1 Optical measurement system setup

Note 2: Definition of response time

The response time is defined as the LCD optical switching time interval between "White" state and "Black" state. Rise time ( $T_{\text{on}}$ ) is the time between photo detector output intensity changed from 90% to 10%, and fall time ( $T_{\text{off}}$ ) is the time between photo detector output intensity changed from 10% to 90%.

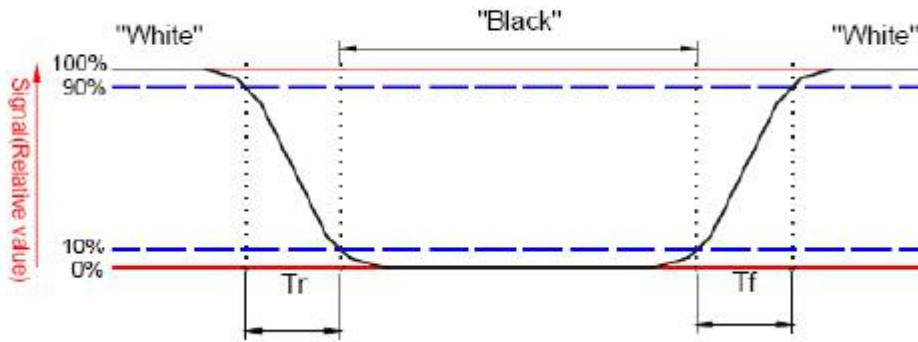


Fig. 2 Definition of response time

Note 3: Definition of contrast ratio

Contrast ratio is calculated by the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "white" state}}{\text{Brightness on the "black" state}}$$

Note 4: Definition of luminance

Measured at the center area of the panel when LCD panel is driven at "white" state.

Note 5: Definition of color chromaticity (CIE1931)

Color coordinates measured at the center point of LCD when panel is driven at "White", "Red", "Green" and "Blue" state respectively.

Note 6: CTC shipping status is cell without polarizer. Transmittance of Specification is cell with polarizer. The tolerance of Transmittance is +/-10%.

## 5.RELIABILITY TESTS

ITEM	CONDITION	CRITERION
Operating Temperature Test	High Temperature: +70 °C, 96 hrs	No defects in display and operational functions
	Low Temperature: -20 °C,96 hrs	
Storage Temperature Test	High Temperature: +80 °C, 96 hrs	No defects in display and operational functions
	Low Temperature: -30 °C, 96 hrs	
Humidity Endurance Test	60°C, 90%RH, 96 hrs	No defects in display and operational functions
Thermal Shock Test	-20 °C (30mins)~ +70 °C (30mins) 10 cycles	No defects in display and operational functions
Electro Static Discharge	± 4KV, Human BodyMode,150pF/330Ω; ± 8KV,Air Mode,150pF/330Ω	No defects in display and operational functions

NOTE:

- 1) The samples must be free from defect before test, must be restored at room condition at least for 2 hours after reliability test before any inspection.
- 2) Before test the function of TP, the sample must be placed in room temperature for 24hrs after RA test.