

PRODUCT SPECIFICATION **FOR LCD MODULE**

Revision: 1.0

Model No: LS071I01-S-V1

Module Type: COG+FPC+B/L

APPROVED SIGNATURE

- Approved Product Specification only
- Approved Product Specification and Samples

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1. General Description

LS071I01-S-V1 is a transmissive type a-Si TFT-LCD (amorphous silicon thin film transistor liquid crystal display) module, which is composed of a TFT-LCD panel, a driver circuit and a backlight unit. The panel size is 0.71 inch and the resolution is 160(RGB)*160, the panel can display up to 262k colors.

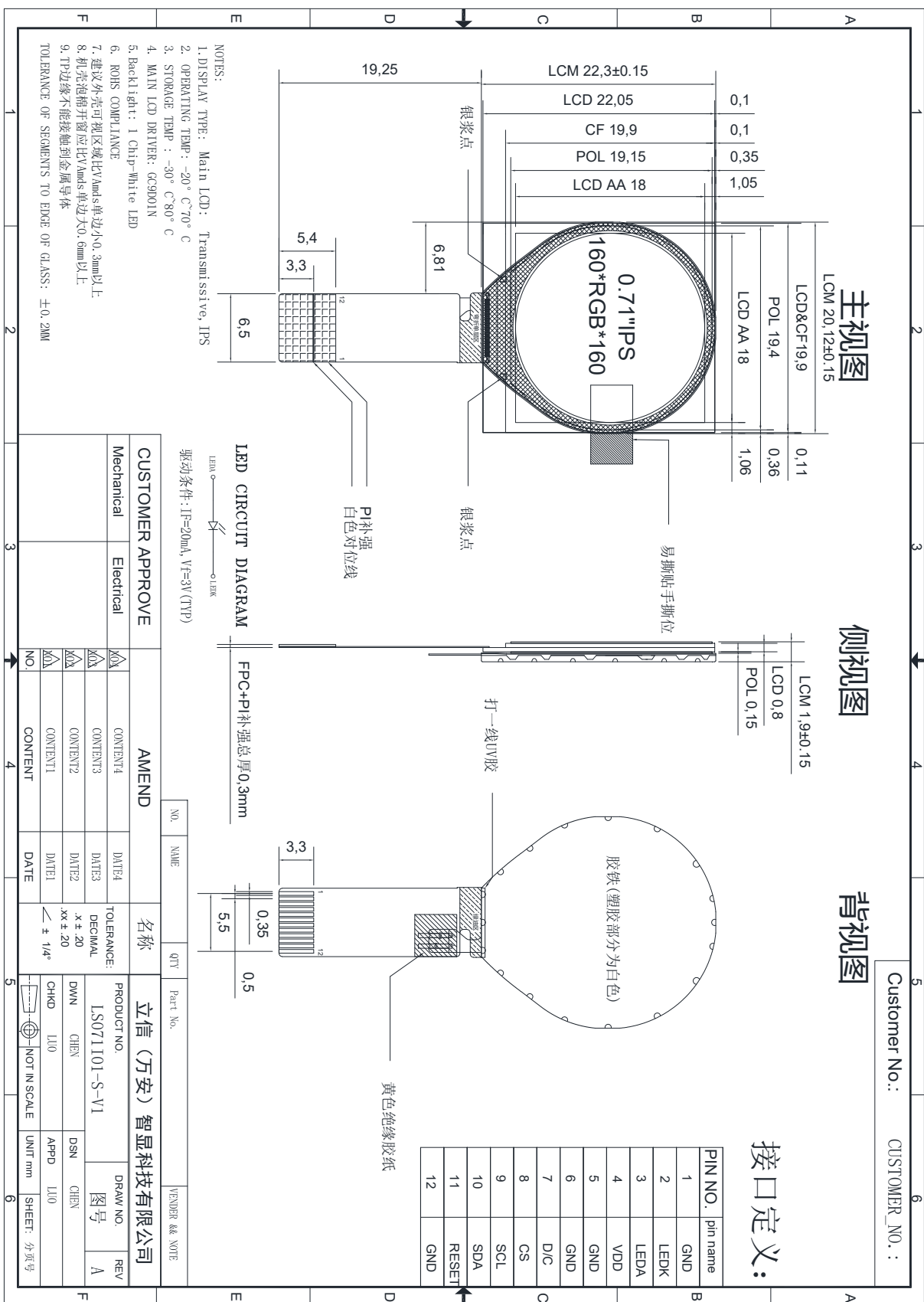
2. Physical Features

Display Mode	TFT-LCD Module
	Active matrix TFT, Transmissive type
Display Format	Graphic 160(RGB)×160 Dot-matrix
Input Data	4-line serial interface
Viewing Direction (Grayscale Inversion)	Free (IPS)
Drive	GC9D01N

3. Mechanical Specification

Item	Specification	Unit
Module size (H×V×D)	20.12 ×22.3 ×1.9	mm
Number of dots	160(RGB) ×160	pixel
Active area (H×V)	18×18	mm

4. Outline Dimension



5. Absolute Maximum Ratings

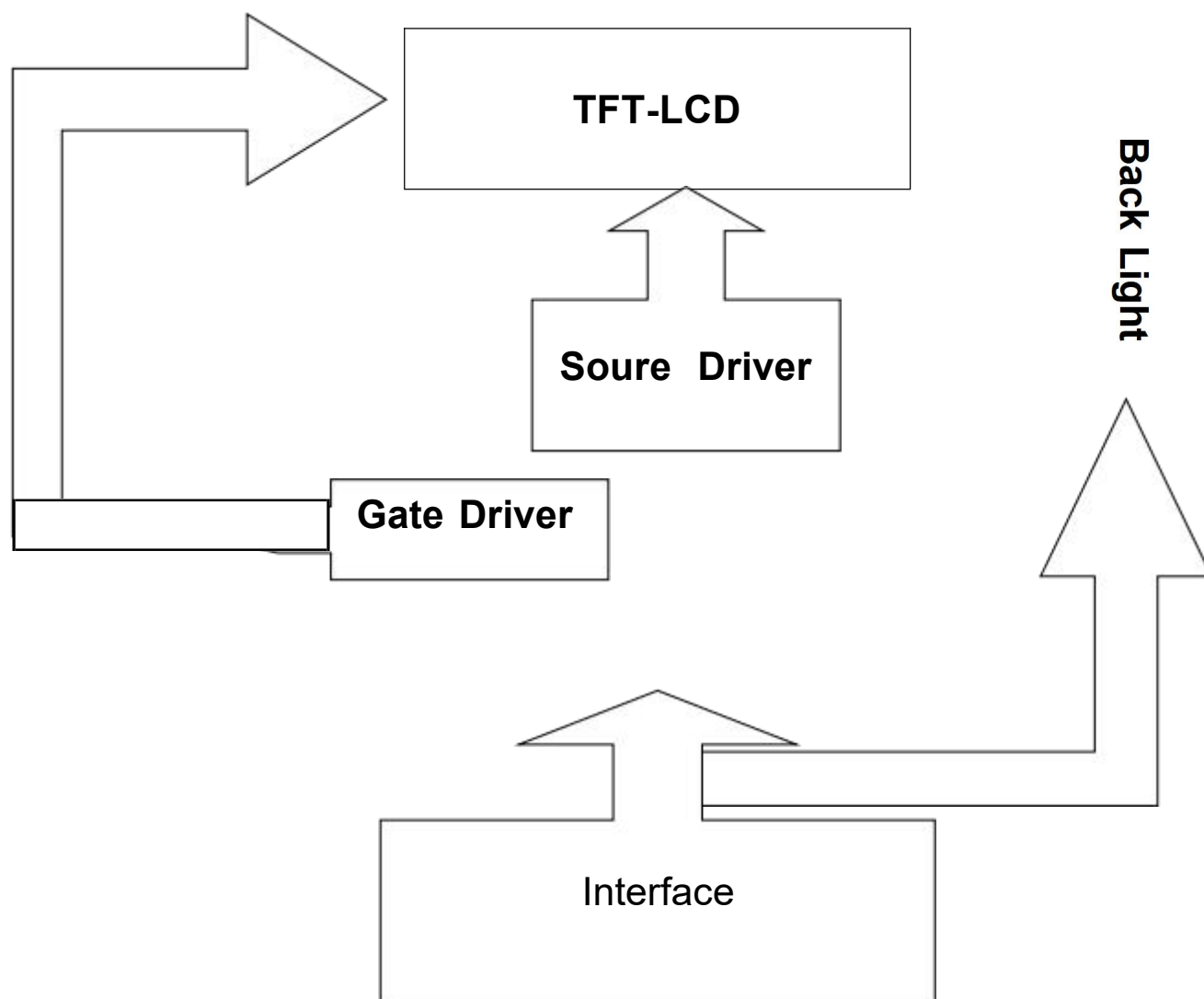
Item	Symbol	Min	Max	Unit	Remark
Supply voltage	VCC	-0.3	4.6	V	Note1 Note2
Supply voltage	IOVCC	-0.3	4.6	V	
Operating temperature	TOPR	-20	70	°C	
Storage temperature	TSTR	-30	70	°C	

6. Electrical Characteristics

Item		Symbol	Rating			Unit	Remark
			Min	Typ	Max		
Supply voltage		VCC	2.8	2.8	3.3	V	Note1
Supply voltage		IOVCC	1.65	2.8	3.3	V	
Input Voltage	L level	VIL	0	---	0.3*IOVCC	V	
	H level	VIH	0.7*VCC	---	IOVCC	V	

7. Module Function Description

7- 1. Block Diagram Of LCM



7-2. Pin Description

PIN NO.	Symbol	I/O	Description
1	GND		Ground
2	LEDK		Power for LED backlight cathode
3	LEDA		Power for LED backlight anode
4	VDD		power supply
5	GND		Ground
6	GND		Ground
7	D/C		Command and Data select pin
8	CS		Chip select pin
9	SCL		Serial clock pin
10	SDA		Serial data input/output bidirection pin
11	RESET		Reset signal pin
12	GND		Ground

7-3 Timing Characteristics

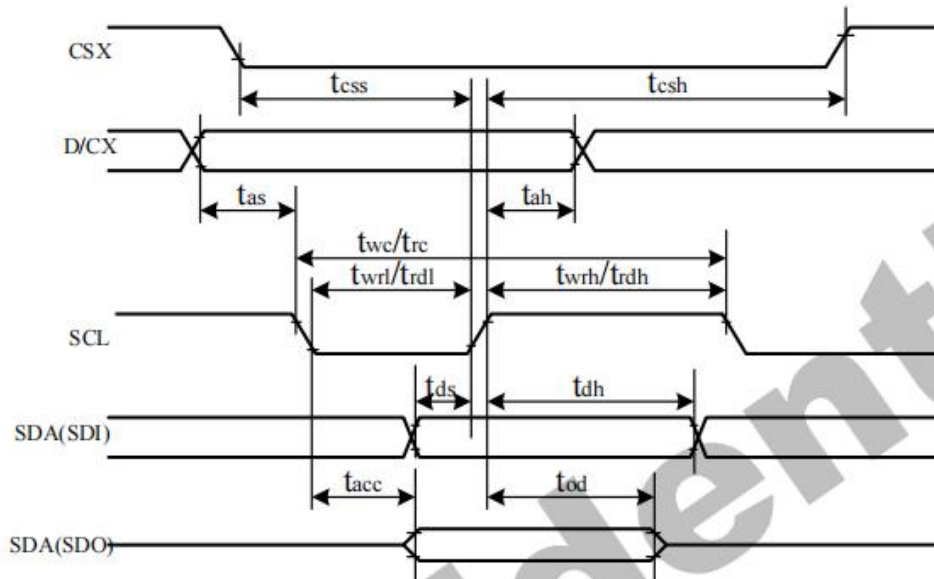
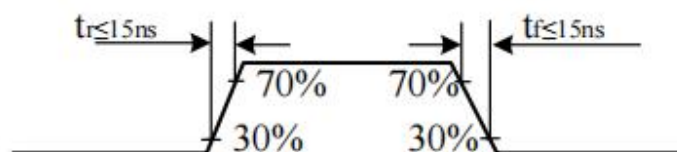


Table48.

Signal	Symbol	Parameter	min	max	Unit	Description
CSX	t_{css}	Chip select time (Write)	20	-	ns	
	t_{csh}	Chip select hold time (Read)	40	-	ns	
SCL	t_{wc}	Serial Clock Cycle (Write)	10	-	ns	
	t_{wrh}	SCL "H" Pulse Width (Write)	5	-	ns	
	t_{wrl}	SCL "L" Pulse Width (Write)	5	-	ns	
	t_{rc}	Serial Clock Cycle (Read)	150	-	ns	
	t_{rdh}	SCL "H" Pulse Width (Read)	60	-	ns	
	t_{rdl}	SCL "L" Pulse Width (Read)	60	-	ns	
D/CX	t_{as}	D/CX setup time	10	-	ns	
	t_{ah}	D/CX hold time (Write/Read)	10	-	ns	
SDA/SDI (Input)	t_{ds}	Data setup time (Write)	5	-	ns	
	t_{dh}	Data hold time (Write)	5	-	ns	
SDA/SDO (Output)	t_{acc}	Access time (Read)	10	-	ns	

Note: $T_a = 25^\circ\text{C}$, $V_{DDI}=1.65\text{V to }3.3\text{V}$, $V_{DDB}=2.5\text{V to }3.3\text{V}$, $AGND=VSS=0\text{V}$

Figure99.

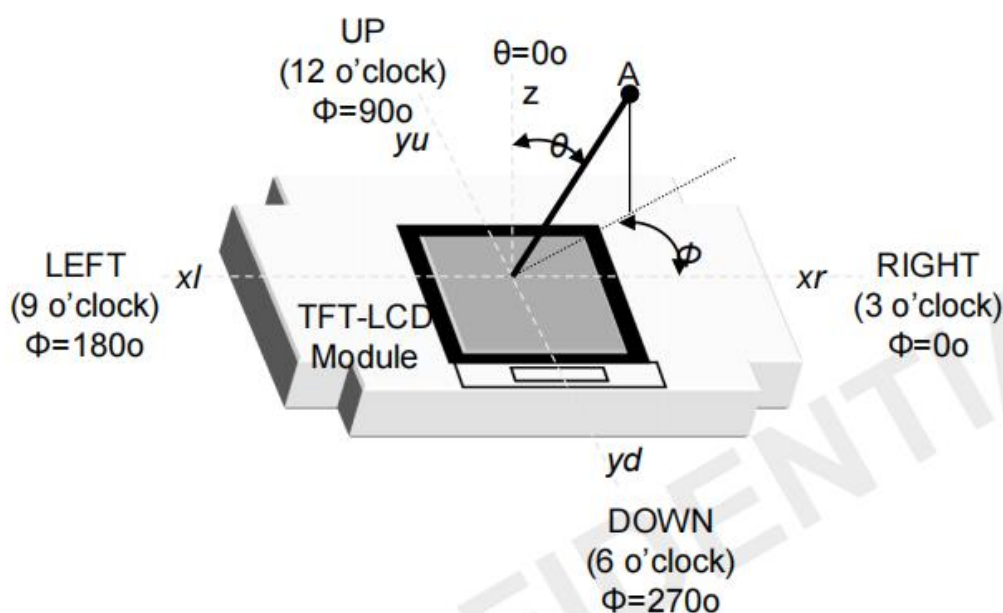


8. Electro-Optical Characteristics

Item		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Response time		Tr +Tf	$\theta_x = \theta_y = 0$	---	30	40	ms	Note 1
Contrast Ratio		CR		---	800	---	---	Note 2
Transmittance		T%		3.0	3.6	---	%	
Color Chromaticity (CIE1931)	White	W x	$\theta_x = \theta_y = 0$	---	0.301	---	---	
		W y		---	0.333	---	---	
Viewing angle	θ_T		CR > 10	---	85	---	Deg.	Note 3
	θ_B			---	85	---		
	θ_L			---	85	---		
	θ_R			---	85	---		

Note 5.1: Viewing angle is the angle at which the contrast ratio is greater than 10. The viewing angles are determined for the horizontal or 3, 9 o'clock direction and the vertical or 6, 12 o'clock direction with respect to the optical axis which is normal to the LCD surface (see Figure 5).

<Figure 5. Viewing Angle Range Is Defined As Follows>

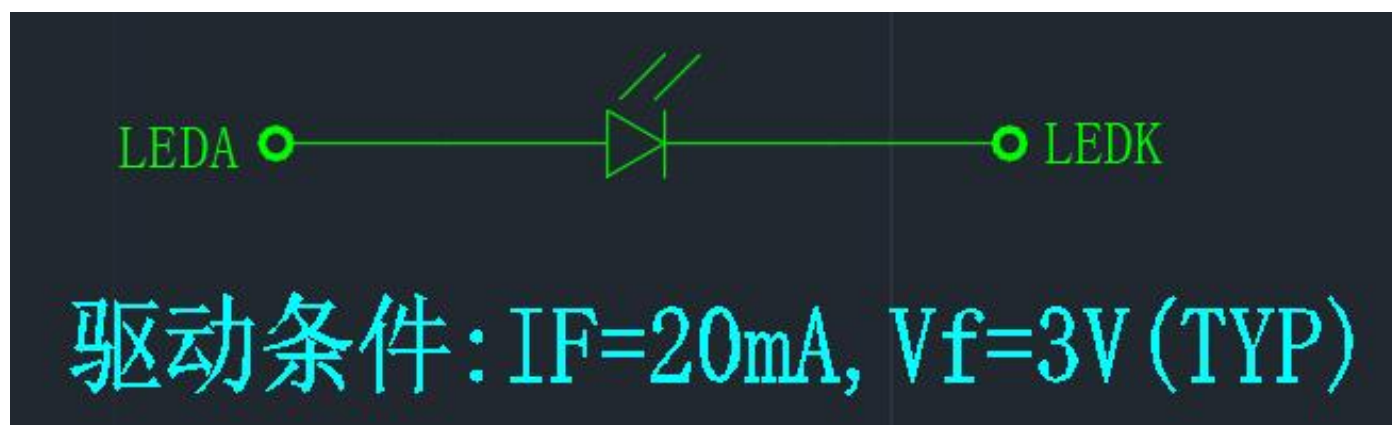


Note 5.2: Contrast measurements shall be made at viewing angle of $\Theta=0^\circ$ and at the center of the LCD surface. Luminance shall be measured with all pixels in the view field set first to white, then to the dark (black) state. Luminance Contrast Ratio (CR) is defined mathematically and the Contrast Ratio is greatly affected by the accuracy of the polarizer attached.

$$CR = \frac{\text{Luminance when displaying a white raster}}{\text{Luminance when displaying a black raster}}$$

Note 5.3: Transmittance is the Value with Polarizer(HC+Clear) & silicate BLU (Film structure is on Table 6) .

Backlight circuit



9.Records Of Version

Version	Revise Date	Page	Content
00	2025-11-25	ALL	New released