

# SPECIFICATION

**PRODUCT : LCD MODULE**

**LCD SIZE : 0.96 inch 80RGB\*160**

**MODEL NO. : IE-C-0101CV05S-00-1**

**VERSION : A**

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# 1. General Description

## 1.1 Description

IE-C-0101CV05S-00-1 is a 80RGBX160 dot-matrix TFT LCD module. This module is composed of a TFT LCD Panel, driver ICs, FPC and a Backlight unit.

## 1.2 Features

NO.	Item	Contents	Unit
1	LCD Size	0.96 inch(Diagonal)	-
2	Display Mode	Normally black	-
3	Resolution	80(H)RGB x 160(V)	-
4	Dot pitch	0.135(H) x 0.1356(V) mm	-
5	Active area	10.8(H) x 21.7(V) mm	-
6	Module size	13.5(H) x 27.95(V) x1.5(D) mm	-
7	Color arrangement	RGB Vvertical stripe	-
8	Interface	4 Line SPI	-
9	Drive IC	ST7735S	-
10	Luminance(cd/m2)	400 (TYP)	
11	Viewing Direction	All View	
12	Backlight	1 White LED	
13	Operating Temp.	-20°C ~ + 70°C	°C
14	Storage Temp.	-30°C ~+ 80°C	°C
15	Weight	1.1	g

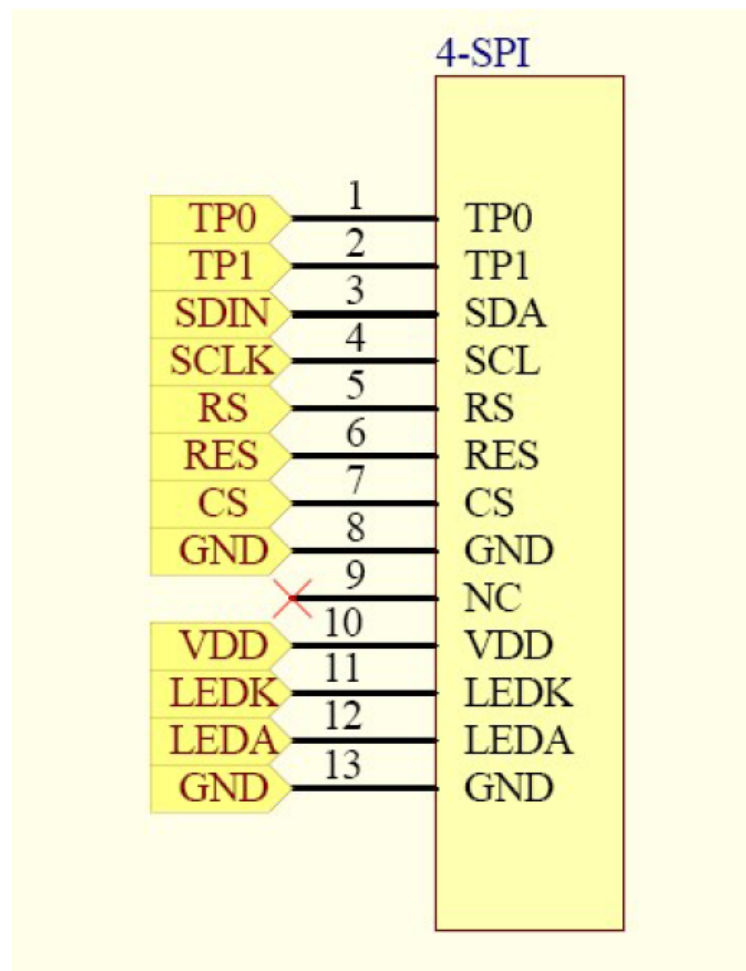


### 3. Pin Definition

FPC Connector is used for the module electronics interface.

NO.	Symbol	Description
1	TP0	Touch Pin, If not used, please open this pin.
2	TP1	Touch Pin, If not used, please open this pin.
3	SDA	SPI interface input/output pin.
4	SCL	This pin is used to be serial interface clock.
5	RS	Display data/command selection pin in 4-line serial interface.
6	RESET	This signal will reset the device, Signal is active low.
7	CS	Chip selection pin, Low enable, High disable.
8	GND	Power Ground.
9	NC	No Connect.
10	VDD	Power Supply for Analog
11	LEDK	LED Canthode
12	LEDA	LED Anode
13	GND	Power Ground.

Note:



## 4. Electrical Characteristics

### 4.1 Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Supply Voltage (I/O)	VDD	-0.3	4.6	V	
Analog Supply Voltage	VDDIO	-0.3	4.6	V	
Logic Input Voltage	VIN	-0.3	VDD+0.3	V	
Operation Temperature	Top	-20	70	°C	
Storage Temperature	Tst	-30	80	°C	

### 4.2 Model Characteristics

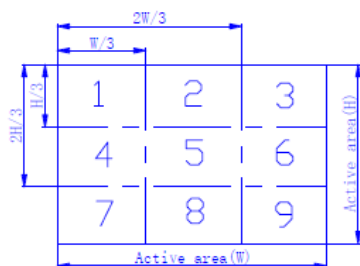
Parameter	Symbol	Min	TYP	MAX	Unit	Notes
Voltage for LED backlight	V <sub>bl</sub>	2.9	3.0	3.1	V	
Supply Voltage for Logic	VDD	2.5	2.8	3.3	V	
Interface Operation Voltage	VDDIO	1.65	1.8	3.3	V	
Gate Driver High Voltage	VGH	10	-	15	V	
Gate Driver Low Voltage	VGL	-13	-	-7.5	V	
Operating Current for V <sub>DD</sub>	I <sub>DD</sub>	--	2	3	mA	
Current for LED backlight	I <sub>bl</sub>	15	-	20	mA	1 LED
Brightness	L <sub>br</sub>	350	400	--	cd/m <sup>2</sup>	
Sleep In Mode VDD	I <sub>dd</sub>	--	15	30	uA	
Sleep In Mode VDDIO	I <sub>ddio</sub>	--	5	10	uA	

1 Test condition is:

- a:Center point on active area
- b:Best Contrast

2 Uniform measure condition:

- a:Measure 9 point,Measure location is show below:
- b:Uniform=(Min brightness/Max.brightness)x100%
- c:Best Contrast.



### 5. Optical characteristics

Item	Symbol	Measuring Conditions		Min.	Typ.	Max.	Unit	Remark
		$\theta = 0^\circ$	25 °C					
Response Time	Tr+Tf	$\phi = 0^\circ$	25 °C	-	30	40	ms	
Viewing Angle	$\theta$	$\phi = 0^\circ$	25 °C	-	80	-	Deg	Note (b)
		$\phi = 180^\circ$	25 °C	-	80	-		
	$\theta$	$\phi = 90^\circ$	25 °C	-	80	-		
		$\phi = 270^\circ$	25 °C	-	80	-		
Contrast Ratio	CR	-	25 °C		800	-	-	Note (c)
Color of CIE Coordinate	White	X	25 °C	0.304	0.306	0.308	-	-
		Y	25 °C	0.325	0.327	0.329		
	Red	X	25 °C	0.608	0.610	0.612		
		Y	25 °C	0.331	0.333	0.335		
	Green	X	25 °C	0.279	0.281	0.283		
		Y	25 °C	0.531	0.533	0.535		
	Blue	X	25 °C	0.144	0.146	0.148		
		Y	25 °C	0.136	0.138	0.140		
Transmittance (with polarizer)					5.09		%	

Note1:Definition of Response Time.(white-black)

The response time is defined as the time interval between the 10% and 90% amplitudes

## 6. Reliability

### 6.1 Contents of Reliability Tests

Item	Conditions	Criteria
High Temperature Operation	70°C, 120 hrs	The operational functions work.
Low Temperature Operation	-20°C, 120 hrs	
High Temperature Storage	80°C, 120 hrs	
Low Temperature Storage	-30°C, 120 hrs	
High Temperature/Humidity Operation	50°C, 85% RH, 120 hrs	
Temperature Cycling	-10°C ⇔ 25°C ⇔ 60°C ⇔ 25°C, 60mins/Cycle, 12 Cycles	

Note:

No moisture condensation is observed during tests.

Condition of image sticking test : 25°C±2°C.

### 6.2 Shock and Vibration

Test Item	Conditions
Packing Vibration	Frequency range 10~50HZ, Stroke: 1.0mm, sweep: 10~50Hz, X,y,z 2 hours for each direction

### 6.3 ESD

Test Item	Conditions
ESD	150pF , 330Ω , Contact: ±2KV,
	150pF , 330Ω , Air: ±4KV



## 7. Package Specifications

Item	Quantity
<b>Module</b>	<b>810 per Primary Box</b>
<b>Holding Trays (A)</b>	<b>15 per Primary Box</b>
<b>Total Trays (B)</b>	<b>16 per Primary Box (Including 1 Empty Tray)</b>
<b>Primary Box (C)</b>	<b>1~4 per Carton (4 as Major / Maximum)</b>

