



SeeYA 0.49" Micro-OLED Specification

Model Name: SY049WDM01

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Revision

Version	Date	Description
V1.0	2021.4.7	Initial release
V1.1	2021.4.15	Correct Page13 application circuit; Update page53 warranty term to "12months"

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1 General Description

This display is a 0.49 inch diagonal, 1920(RGB) × 1080 dots active matrix color OLED module based on single-crystal silicon transistors. This module integrates panel driver and logic driver, and realizes small size, light weight, low power consumption and high resolution.

Applications: Augmented Reality, View finders, Head mounted displays, etc.

- 1920 x 1080 Sub Pixel Rendering Resolution
Multi-Resolution (4*M, M=160~480) x RGB x (4*N, N=120~270)
- Frame rate: 1920x1080 up to 90Hz
- Support 8bits or 10bits color depth
- Interface
 - MIPI+ I2C
 - MIPI DPHY v1.2 with one port (4 lanes), 1.0Gbps/Lane
 - MIPI DSI v1.01 R11 Video mode
 - Support VESA-DSC v1.1 in-chip decoder (3X and 3.75X compression ratio)
 - Support scaling up 1.33x(e.g., 1440x810 to 1920x1080), 1.5x (e.g., 1280x720 to 1920x1080) and 2x (e.g., 960x540 to 1920x1080)
- Scan direction selection, up or down and right or left
- Orbit supported
- Wide range Brightness adjustment
- Sequential/Global emission
- Temperature compensation
- Image Anchoring



2 General Feature

Parameter	Specification
Resolution	1920(H) x 1080 (V)
Number of dots	1920x1080x2(2/3 SPR)
Pixel Size	5.616 μ m x 5.616 μ m
Active Area	10.783mm x 6.065mm / 0.49" diagonal
Luminance	1800cd/m ² typical
Contrast Ratio	50000:1
Uniformity	> 85%
Operating Voltage	AVDD: 5.3v~5.5v AVEE: -4~-5.5v VDDI: 1.65~1.95v
Power Consumption (3 power mode, 90hz, 1800nits, VESA on, Rolling mode)	468mW
Gray Levels	256 or 1024
Interface	MIPI
Frame Rate	60Hz~90Hz
Weight	~1g
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +80°C

3 Optical

Symbol	Parameter	Min.	Typ.	Max.	Unit
Brightness	Tpanel=20℃ ~50℃	1350	1800	2250	cd/m2
CR	white to Black Contrast Ratio	20000:1	50000:1		
Uniformity	9 points uniformity	85			%
Red Chromaticity	CIE1931-x	0.625	0.655	0.685	
	CIE1931-y	0.300	0.330	0.360	
Green Chromaticity	CIE1931-x	0.210	0.245	0.280	
	CIE1931-y	0.650	0.680	0.710	
Blue Chromaticity	CIE1931-x	0.120	0.150	0.180	
	CIE1931-y	0.025	0.055	0.085	
White Chromaticity	CIE1931-x	0.298	0.313	0.328	
	CIE1931-y	0.314	0.329	0.343	
Color Gamut	DCI-P3	80%	90%		
View angle	White luminance decay to 50%	35°			
Frame rate		60		90	HZ
Power consumption	90hz,1800nits, VESA DSC on, Full white, No scaling		468	515	mW

Note1: If there is no specified, the specification of optical is specified at 30 degree Celsius.

Note2: Definition of optical measurement system.

The optical characteristics should be measured in dark room. Brightness is measured as peak luminance at full white pattern (Gray level=255);

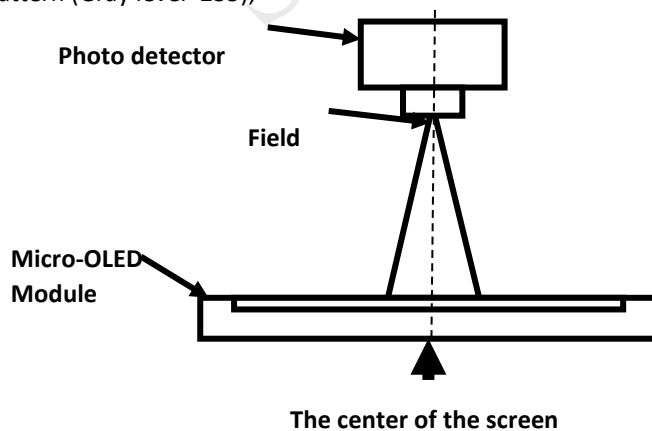


Fig.1

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CRITICAL DIMENSION			2D Rev	15	合肥视涯技术有限公司		
REFERENCE DIMENSION		()	3D Rev	NA			
APPROVED	Niu Lei	2021/01/29	PRODUCTOR NUMBER		SY049WDM01-00	3 rd ANGLE	
CHECKED	Cheng Yufan	2021/01/29	PART NAME		Module	UNIT	MM
DESIGNED	Liu jun	2021/01/29	DRAWING NUMBER		YSM1-00	SCALE	1:1
			MATERIAL NUMBER		NA	PAGE	1/1



1. DISPLAY TYPE: SI-OLED
2. PANEL SIZE: 0.49INCH, RESOLUTION: 1920×1080
3. GENERAL TOLERANCE: ±0.50MM
4. REQUIREMENT ON ENVIRONMENTAL PROTECTION: Q/S0002

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7 Pin Description

7.1 Pin Description

Pin No.	Symbol	Type	Description
P1	VDDI	Power	Power supply for interface system except for the interface.
P1	VDDI	Power	Power supply for interface system except for the interface.
1	ELVDD	Output	Power supply for OLED cell. connect a capacitor for stabilization.
2	VCOM	Output	Regulator output for common electrode voltage. connect a capacitor for stabilization, connect a TVS diode to GND.
3	MVSS	Power	System GND for MIPI interface.
4	MVSS	Power	System GND for MIPI interface.
5	CLKN	Input	This pin is DSI CLK- signal if MIPI interface is used. CLKP/N is differential small amplitude signals. If not used, please keep it open.
6	DATAP1	Input/ Output	This pin is DSI D1+ signal if MIPI interface is used. DATA1P/N is differential small amplitude signals. If not used, please keep it open.
7	CLKP	Input	This pin is DSI CLK+ signal if MIPI interface is used. CLKP/N_PTA is differential small amplitude signals. If not used, please keep it open.
8	DATAN1	Input/ Output	This pin is DSI D1- signal if MIPI interface is used. DATA1P/N is differential small amplitude signals. If not used, please keep it open.
9	MVSS	Power	System GND for MIPI interface.
10	MVSS	Power	System GND for MIPI interface.
11	DATAN0	Input/ Output	This pin is DSI D0- signal if MIPI interface is used. DATA0P/N is differential small amplitude signals. If not used, please keep it open.
12	DATAP2	Input/ Output	This pin is DSI D2+ signal if MIPI interface is used. DATA2P/N is differential small amplitude signals. If not used, please keep it open.
13	DATAP0	Input/ Output	This pin is DSI D0+ signal if MIPI interface is used. DATA0P/N is differential small amplitude signals. If not used, please keep it open.
14	DATAN2	Input/ Output	This pin is DSI D2- signal if MIPI interface is used. DATA2P/N is differential small amplitude signals. If not used, please keep it open.
15	MVSS	Power	System GND for MIPI interface.
16	VSS	Power	System GND for internal digital system.
17	DATAN3	Input/ Output	This pin is DSI D3- signal if MIPI interface is used. DATA3P/N is differential small amplitude signals. If not used, please keep it open.
18	VREF1	Power	Regulator output for internal reference voltage. Connect a capacitor for stabilization.
19	DATAP3	Input/ Output	This pin is DSI D3+ signal if MIPI interface is used. DATA3P/N is differential small amplitude signals. If not used, please keep it open.
20	VGSP	Output	Regulator output for gamma low voltage generation. Connect a capacitor for stabilization.
21	VSS	Power	System GND for internal digital system.
22	VGMP	Output	Regulator output for gamma high voltage generation. Connect a capacitor for stabilization.
23	MVDD	Output	Regulator output for MIPI digital system power. Connect a capacitor for stabilization.
24	VREF3	Output	Regulator output for internal reference voltage. Connect a capacitor for stabilization. Connect a Schottky diode to GND
25	EN_AOI	Input	Connect to GND.
26	VREF2	Output	Regulator output for internal reference voltage. Connect a capacitor for stabilization.

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27	IM[0]	Input	Use to select the Interface type.		
			IM[0]	Command	Display Data
			0V	MIPI	MIPI
			1.8V	I2C or MIPI	MIPI
28	SDA	Input/ Output	Bi-direction data PIN in I2C I/F. If this pin is not used, please connect to VDDI.		
29	RESX	Input	This signal will reset the device and must be applied to properly initialize the chip. Signal is active low.		
30	SCL_WRX	Input	Synchronous clock signal in I2C I/F. If this pin is not used, please connect to VDDI.		
31	RL_SEL	Input	Use to select I2C slave address. RL_SEL = 0v: slave address = 0x4C or 0x4E. RL_SEL = 1.8v: slave address = 0x4D or 0x4E.		
32	OCP_OUT	Output	Over current protect output flag.		
33	V_TEST	Output	Connect to VCOM.		
34	GPIO	Input/ Output	Digital global purpose in/out test pin.		
35	OTP_VDD2	Output	Regulator output for MTP analog system power. Connect a capacitor for stabilization.		
36	EN_EXT_VDD	Input	Connect to GND.		
37	OTP_PWR	Input	Connect to GND.		
38	AVSS	Power	System GND for analog system.		
39	AVEE	Power	-4.0V~-5.5V Power supply for OLED cell. connect a capacitor for stabilization.		
40	AVDD	Power	5.3V~5.5V Power supply for analog system. connect a capacitor for stabilization.		
P2	VDD	Output	Regulator output for logic system power. Connect a capacitor for stabilization.		
P2	VDD	Output	Regulator output for logic system power. Connect a capacitor for stabilization.		