

# APPROVAL SHEET

客户名称: \_\_\_\_\_  
CUSTOMER

品 名: CMOS Camera Module  
PART NAME

规 格: JSK-RA045-V2.0  
SPECIFICATION

版 本 号: Second Version  
VERSION

日 期: 2020-4-15  
DATE :

			客户(CUSTOMER)		
APPROVAL			APPROVAL		
拟制 (DESIGNER)	审核 (CHECKER)	批准 (APPROVER)	拟制 (DESIGNER)	审核 (CHECKER)	批准 (APPROVER)
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Notes:

This specification shows the main information of the camera module. It contains the component structure and main functions of the camera module, as well as the information of quality inspection and reliability test.

## 2. Feature

**1 / 2.7 "CMOS image sensor, lens and FPC, AR0230 are ultra clear CMOS image sensor chips developed by MgO Electronics Co., Ltd. It uses the company's latest pixel technology and image processing technology to provide customers with cost-effective photography solutions. This product can output different sizes of images, such as VGA, CIF, QVGA. Ensure the original picture quality, faster frame rate. Users can set the register to control the image of the 2-wire performance bidirectional synchronous serial bus. The sensor can output 1920x1080 30 frames per second. It also has AEC, AWB, LSC, etc.**

### **DVP Parallel Interface Fixed Focus 2MP Camera Module**

Mainly used in

Digital products

Computer camera

MIPI INTERFACE (module type : fixe focus)

Mid tablet

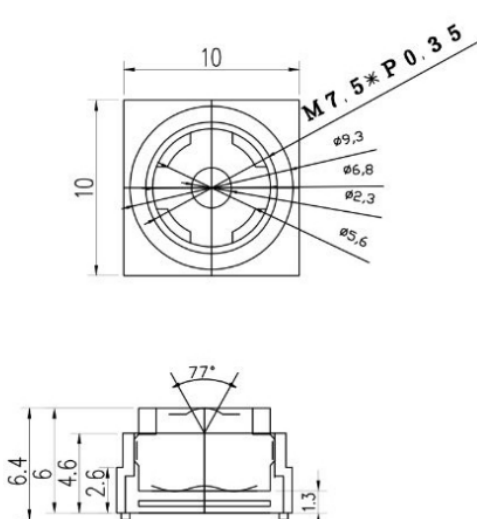
Vehicle data recorder

Other

### 3. Key specification datasheet

<b>Image Sensor</b>	<b>AR0230</b>
<b>EFL</b>	<b>3.29mm</b>
<b>F.NO</b>	<b>2.8</b>
<b>Pixel</b>	<b>1920 x 1080</b>
<b>View Angle</b>	<b>68.7°</b>
<b>Lens Type</b>	<b>1/4 inch</b>
<b>Lens Dimensions</b>	<b>8.00 x 8.00 x 4.90 mm</b>
<b>Module Size</b>	<b>18.50 x 12.50</b>
<b>Module Type</b>	<b>Fixed Focus</b>
<b>Interface</b>	<b>MIPI and DVP Parallel</b>

### Camera lens :



Top view dimensions: 10 x 10 mm. Thread: M7.5\*P0.35. Hole diameters:  $\phi 9.3$ ,  $\phi 6.8$ ,  $\phi 2.3$ ,  $\phi 5.6$ .

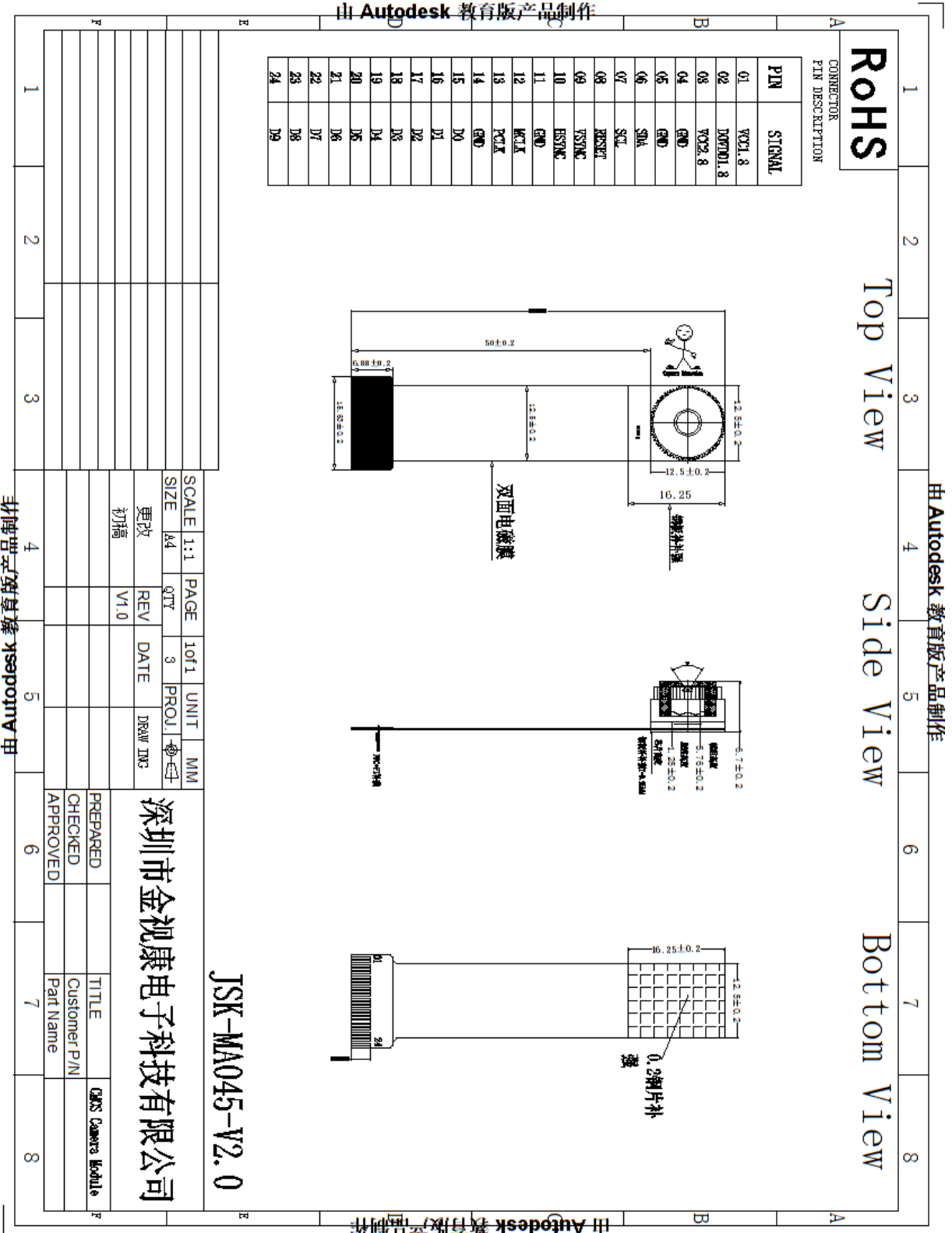
Side view dimensions: 6.4, 6, 4.6, 2.6, 1.3 mm. Chief ray angle: 77°.

DIV.	VALUE	ANGLE	
0~10	$\pm 0.05$	0~30'	$\pm 0.3'$
10~30	$\pm 0.075$	31'~90'	$\pm 0.5'$
30~80	$\pm 0.12$		
80~90	$\pm 0.2$		

1. SENSOR SIZE	<u>1/2.7"</u>
2. FOCAL LENGTH (EFL)	<u>f=4.88</u>
3. F/NO (Infinite)	<u>F/NO=2.2</u>
4. BACK FOCAL LENGTH	<u>=1.3</u>
5. FIELD OF VIEW (diagonal by sensor)	<u>=77°</u>
(horizontal)	<u>=64.2°</u>
(vertical)	<u>=49°</u>
6. CHIEF RAY ANGLE	<u>&lt;23°</u>
7. TV DISTORTION:	<u>&lt;1.5%</u>
8. RELATIVE ILLUMINATION:	<u>=36%</u>
9. IR COATIN:	<u>NONE</u>
10. COMPOSITION:	<u>5P</u>

### 5. Module mechanical drawing



## 6. Reliability test

N O.	Test Item		Result	Qty	test equipment	Notes
1	High and low temperature experiment (storage)	High Tem 65° C 70 小时	OK	5	High tem box	
		Low Tem -20° C 70 小时	OK	5	Low tem box	
2	High and low temperature cycle test	Low Tem -20° C(30min)to High Tem 70° (30min) 96H	OK	5	High and low temperature box	
3	Low temperature operation	Low Tem -20° C(30min)	OK	5	Low tem box	
4	High temperature operation	65° 96H Temperature rise and fall each (30min)	OK	5	High temperature incubator	
5	Temperature and humidity test (storage)	High Tem 65° C humidity 80% 24H	OK	5	High tem box	
6		Low Tem -20° C humidity 80% 24H	OK	5	Low tem box	
7	life test	The switch spacing is 3 seconds, and the performance is tested every 2000 times, totally 5 groups	OK	5	Transfer box	
8	Drop test	Height 1500mm, 10 times 10. Free fall in Y, z directions	OK	5	Drop machine	
9	vibration test	Frequency: 10hz55hz, amplitude: 1mm, 10. Free vibration in Y, z directions, closed-loop sweep frequenc	OK	5	Vibrator	
10	Push pull test	Tensile test, vertical pull up 1.5kgf	OK	5	Manual tension gauge	
11		Thrust test, horizontal pushing forward 2.0 KGF	OK	5	Manual tension gauge	
12	CAM Adhesion force test	CAM Adhesion force between base and shell, greater than 0.6kg (vertical direction)	OK	5	Manual tension gauge	

## 7. Image specification

Test Item	Test environment		Test objectives	standard
	colour temperature	light		Pass
Resolution test (MTF)	D65	N/A	Test chart	≧ 40%
center				≧ 30%
Angle				≧ 3%
lack fidelity	D65	N/A	Test chart	≧ 3%
Gray Test	D65	N/A	Test chart	≧ 5
Vi (i = 1)				≧ 10
$\Delta Y_i$ (i= 2~6)				≧ 30%
shadow	D50+/-270	N/A	Imaging chip	≧ 30%
Image test	D50+/-270	N/A	Imaging chip	0
Dead zone pixels				24
Injured pixels				0
Particle (swarm)				0
Weak defect				0
Line defect				0
White pixels in dark mode		30+/-10	Dark field of view	0
Line defects in dark mode		30+/-10	Dark field of view	0