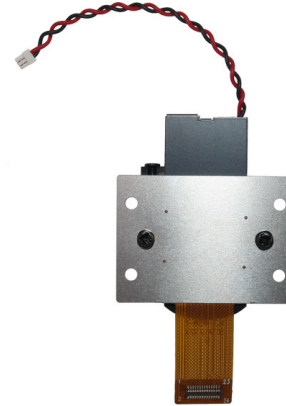
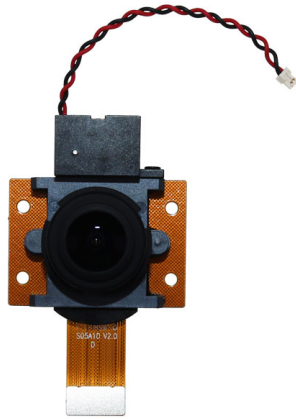


YDS-IRSW-OS05A10 V2.0

5MP OS05A10 IR Switch MIPI Interface M12 Fixed Focus Camera Module



Camera Module No.	YDS-IRSW-OS05A10 V2.0
Resolution	5MP
Image Sensor	OS05A10
Sensor Type	1/2.7"
Pixel Size	2.0 um x 2.0 um
EFL	1.95 mm
F.NO	2.20
Pixel	2688 x 1944
View Angle	180.0°(DFOV) 171.5°(HFOV) 118.0°(VFOV)
Lens Dimensions	22.20 x 21.50 x 12.96 mm
Module Size	50.00 x 30.00 mm
Module Type	Fixed Focus
Lens Model	YDS-LENS-E3335C
IR Switch Input Voltage	3.3V - 5.5V
Lens Filter IR Frequency	645nm +/- 15nm
Lens Filter AR Frequency	700nm - 1,000nm
Operation (IR Day Time)	Red Line: Negative Black Line: Positive
Operation (AR Night Time)	Red Line: Positive Black Line: Negative
IR Switch Connector	962-10231-030005 (2 Pin)
Interface	MIPI
Operating Temperature	-30°C to +85°C
Mating Connector	WP7A-S024VA1



YDS-IRSW-OS05A10 V2.0

5MP OS05A10 IR Switch MIPI Interface M12 Fixed Focus Camera Module



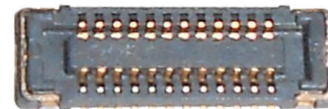
Top View



Side View



Bottom View



Mating Connector

RoHS

PIN SIGNAL

1	AGND
2	AVDD2.8V
3	SDA
4	SCL
5	PWDN
6	RSTXSHUNDN
7	MCP
8	MCN
9	DGND
10	MDP0
11	MDN0
12	DGND
13	MDP1
14	MDN1
15	DGND
16	MDP2
17	MDN2
18	DGND
19	MDP3
20	MDN3
21	DGND
22	DVDD1.2V
23	DOVDD1.8V
24	MCLK

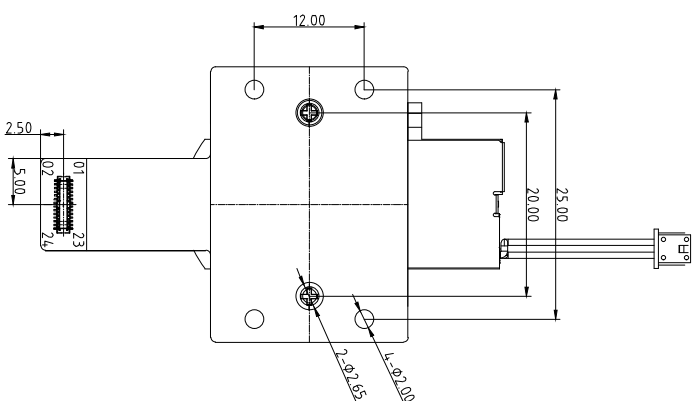
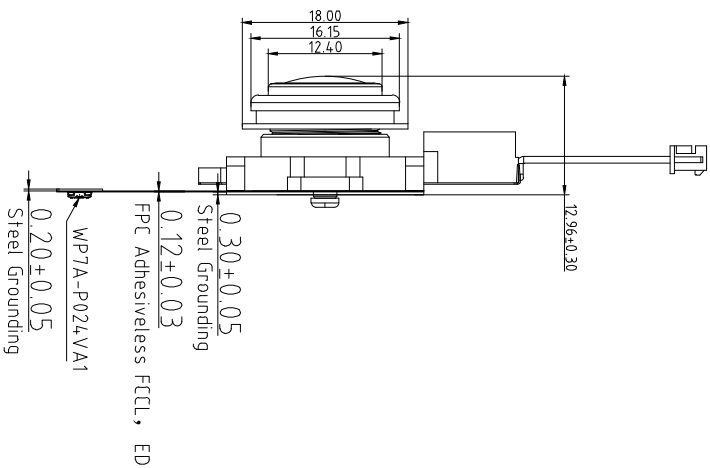
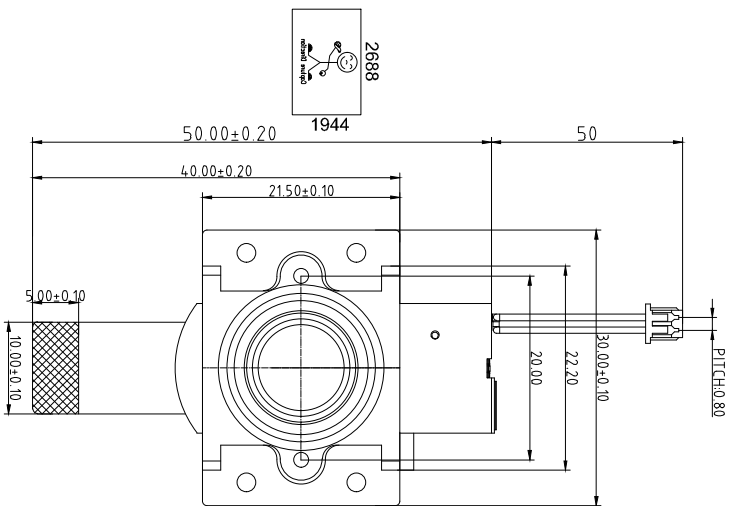
Parameter:

1、Sensor specification:

Image Sensor: OS05A10
 Pixel: 2um×2um
 Lens Type: 1/2.7
 Important Voltage Description: DVDD1.2V
 (external power supply);

2、Lens specification:

FOV: 180°(D);171.5°(H);118°(V)
 F/NO.: 2.2
 OP distortion: <-9%
 Focal length: 1.95mm
 Composition: 6G+IR Switch



NOTE:

1.The device slave address:0x6C(w);0x6D(r)

Version	Mark	Information	Date
V1.0	PD	First Version	09-09-2019
V2.0		Change screw holes and ICR	11-01-2019

Designed By	Kevin
Checked By	Aouly

Model Name:	IRSW-OS05A10 V2.0
Projection Type:	Third Angle
Unit:	mm
Scale:	1:1
Material:	-----
Sheet:	1 of 1
Version:	1/0

3

3

2

2

1

1

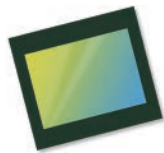
A

B

C

D

E



OS05A10 5-megapixel product brief



Versatile 5-Megapixel PureCel® Sensor with High Dynamic Range for a Wide Range of Commercial Security and Consumer Applications



available in
a lead-free
package

OmniVision's low-power OS05A10 is a 5-megapixel image sensor that brings crisp 1080p high definition, 2K, and 5-megapixel video to a wide range of commercial security and consumer applications, including 360-degree full-view cameras. Built on OmniVision's advanced PureCel® pixel architecture, the OS05A10 utilizes backside illumination (BSI) technology to deliver enhanced low-light sensitivity and wide field of view (FOV).

Available in the popular 1/2.7-inch optical format, the OS05A10 enables video applications in widely used 4:3 and 16:9 aspect ratios. The sensor can capture 1080p full high definition slow-motion video at 120 frames per second (fps) and 2688 x 1944 resolution at 60 fps.

Additionally, the OS05A10 features a 11-degree chief ray angle (CRA) and a dual-exposure staggered high dynamic range (HDR) mode to enable excellent scene reproduction in difficult high-contrast lighting conditions.

The OS05A10 is compatible with MIPI and LVDS interfaces and comes in a chip scale package (CSP).

Find out more at www.ovt.com.



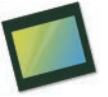
Applications

- Security Cameras
- High Resolution Consumer Cameras
- Action Cameras

Product Features

- 2 μm x 2 μm pixel
- optical size of 1/2.7"
- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- supports output formats:
 - 12-/10-bit RAW RGB
- supports image sizes:
 - 5MP (2688x1944)
 - 1080p (1920x1080)
 - 720p (1280x720)
- supports 2x2 binning
- standard serial SCCB interface
- 12/10-bit ADC
- up to 4-lane MIPI/LVDS serial output interface (supports maximum speed up to 1500 Mbps/lane)
- 2-exposure staggered HDR support
- programmable I/O drive capability
- light sensing mode (LSM)
- PLL with SCC support
- support for frame sync

OS05A10



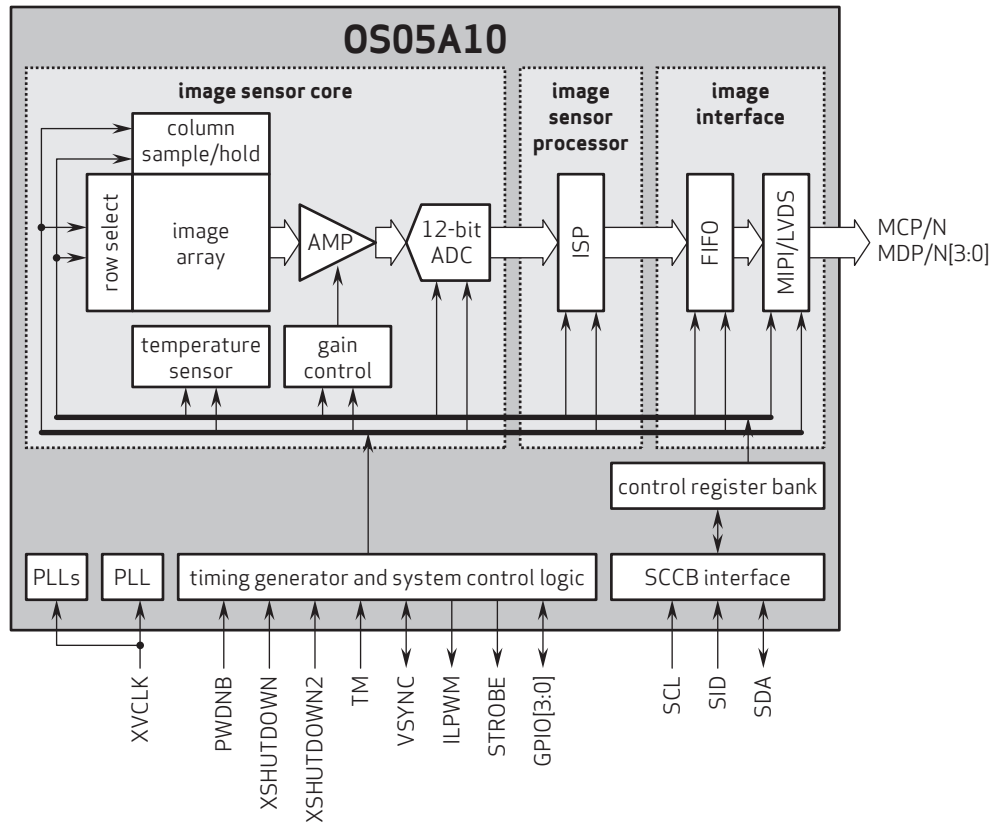
Ordering Information

- OS05A10-H73A-1B (color, lead-free)
73-pin CSP

Product Specifications

- active array size: 2688 x 1944
- maximum image transfer rate:
 - 2688x1944: 60 fps
 - 2688x1520: 60 fps
- power supply:
 - core: 1.2V
 - analog: 2.8V
 - I/O: 1.8V
- power requirements:
 - active: 210 mW
 - standby: 2 mA
 - XSHUTDOWN: 2 μA
- temperature range:
 - operating: -30°C to +85°C junction temperature
 - stable image: 0°C to +60°C junction temperature
- output formats: 10/12-bit RGB RAW
- lens size: 1/2.7"
- lens chief ray angle: 11° linear
- scan mode: progressive
- pixel size: 2.0 μm x 2.0 μm
- image area: 5434.56 μm x 3948.05 μm

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

Tel: +1 408 567 3000
Fax: +1 408 567 3001
www.ovt.com

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OmniVision

YDS-LENS-E3335C

SPECIFICATION SHEET									
Material No. 物料号		/							
传感器规格 Sensor Spec		CCD/CMOS							
最大像面		Ø5.6mm							
Max Image Circle		1.95mm							
EFL 有效焦距		F2.2							
FNo. F值		OS05A20							
F.O.V. 视场角		D.对角 180°(5.57mm) H.水平 171.5°(5.376mm) V.垂直 118°(3.888mm)							
Back Focal Length 后截距		3.07mm (0.3mm filler +0.4 cover glass)							
Lens Effective Diameter 通光口径		Front Ø9.4mm Back Ø8mm							
Lens construction 镜头组成		6-5(ASG)							
OP Distortion 光学畸变		-9%							
Resolution 分辨率		Mega pixel							
Relative Illumination 相对照度		≥40%							
Iris 光圈		Fixed							
Max Chief Ray Angle 最大主光线入射角		15.6±3°							
Min.O.D 最近物距		0.1m							
Working Distance 工作物距		∞							
Mount 接口		M12X0.5							
TTL 光学总长		12.5±0.2mm (0.3mm filler +0.4 cover glass)							
Dimension (ØxL) 外形尺寸		Ø18x12.5							
Filter Spec 滤光片规格		/							

Technical drawings showing the camera module dimensions and mounting details. Dimensions include: 12.5±0.2 (total height), Ø18 (diameter), 180° (field of view angle), 12.2 (mounting hole diameter), M12x0.5 (mounting hole), 10 (mounting hole offset), and 10 (mounting hole offset).

(0.3mm Filter+0.4 cover glass)

Image Circle vs. Sensor Format

Diagram illustrating the image circle and sensor format. Labels include: Height, Width, Diagonal, Circular Fisheye, Partial Frame, Full Horizontal, Full Frame.

REV. NO.	DATE	DESCRIPTION	REVISED	APPR.	APPR.	NAME	DATE
00	2019.6.30	新规范作成	HLQ	XLL	AUDI.		

UNLESS TOLERANCE

Single Part Size: 201 | Portfolio Size: 203 | 3RD Angle Projection

NEW



0.4mm Pitch, Stacking Type
Board-to-Board (FPC) Connector

CONNECTOR

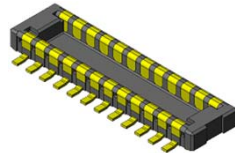
MB-0228-3

September 2017

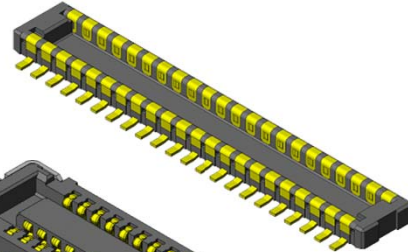
WP7 Series

RoHS Compliant

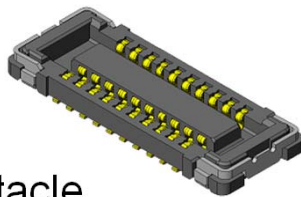
Plug



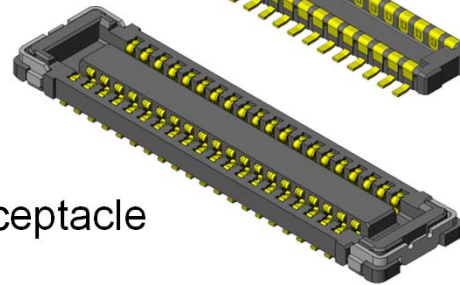
Plug



Receptacle



Receptacle



The WP7 Series is a low-profile board-to-board (FPC) connector with 0.4mm pitch spacing that is ideal for high-density mounting in slim information communication devices like mobile phones, smartphones, LCD, and notebook PC.

To satisfy different product function requirements, a low pin count type and a high pin count type (WP7A / WP7B) are available with the same mounting pattern.

Features

- 0.4mm pitch, 2 rows, 0.7mm stacking height.
- Contact structure ensures high wear-resistance and high contact reliability.
- Secure hold-downs prevent insulator breakage and peeling from FPC.
- 2-point contact design to resist twisting stress.
- Pb-free (Ni barrier on contact prevents solder wicking.)
- Receptacle contacts adopt an optimal configuration according to the pin counts.
High removal force WP7A (low pin count: 10-32 pos.)
Low insertion force WP7B (high pin count 34-70 pos.)
- Signal contact supports 10 Gbps transmission rate.
- Supports MIPI, USB3.1 Gen2, and PCIe Gen3 transmission.

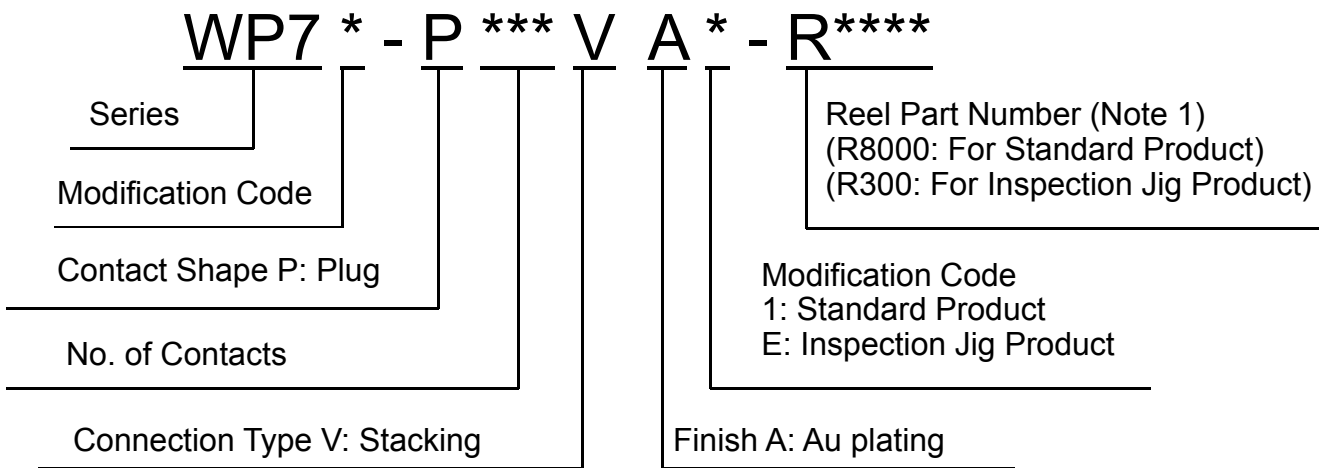
General Specifications

- | | |
|---|---|
| <ul style="list-style-type: none"> ■(WP7A) No. of Contacts:
10, 16, 20, 22, 24, 26,
28, 30, 32 pos. ■(WP7B) No. of Contacts:
34, 40, 50, 60, 70 pos. ■Pitch: 0.4mm, 2 rows ■Operating Temperature:
-40 Deg. C to +85 Deg. C ■Contact Resistance:
70mΩ max. (initial) ■Life Time: 30 mating cycles | <ul style="list-style-type: none"> ■Rated Current: AC, DC 0.3A each per terminal ■Rated Voltage: AC, DC 50V ■Insulation Resistance: 100MΩ min. (initial) ■Dielectric Withstanding Voltage:
AC250Vr.m.s for 1 minute ■(WP7A) total insertion force:
1.50N x n max. (n: No. of pos.) ■(WP7A) total removal force:
0.15N x n min. (n: No. of pos.) ■(WP7B) total insertion force:
1.00N x n max. (n: No. of pos.) ■(WP7B) total removal force:
0.10N x n min. (n: No. of pos.) |
|---|---|

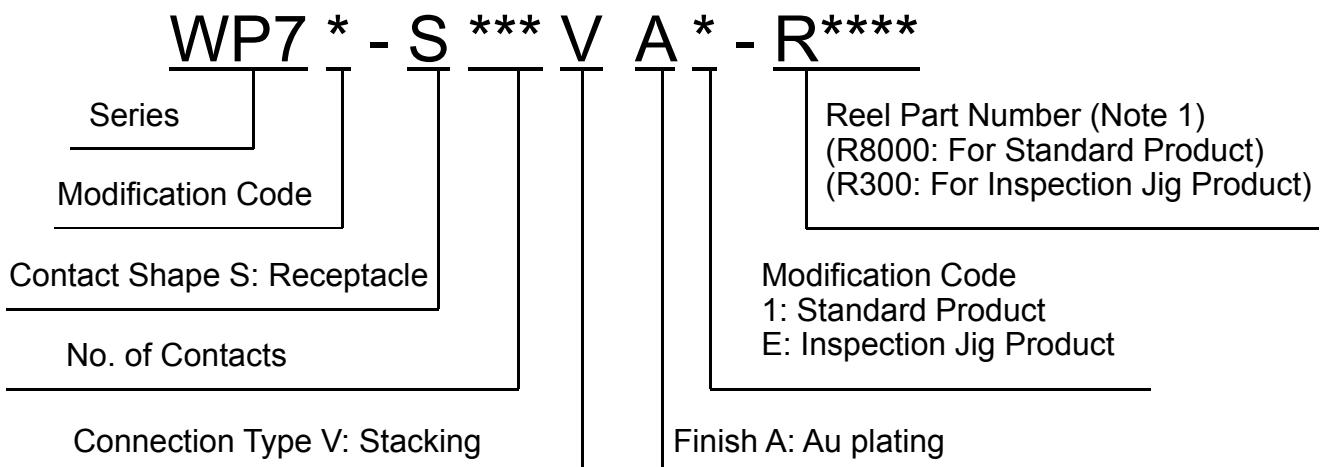
Materials and Finishes

Component	Material / Finish
Contact	Cu alloy / Au plating
Insulator	Heat-resistant plastic
Hold-Down	Plug: Cu alloy / Au plating Receptacle: Cu alloy / Sn plating

Ordering Information (Plug)



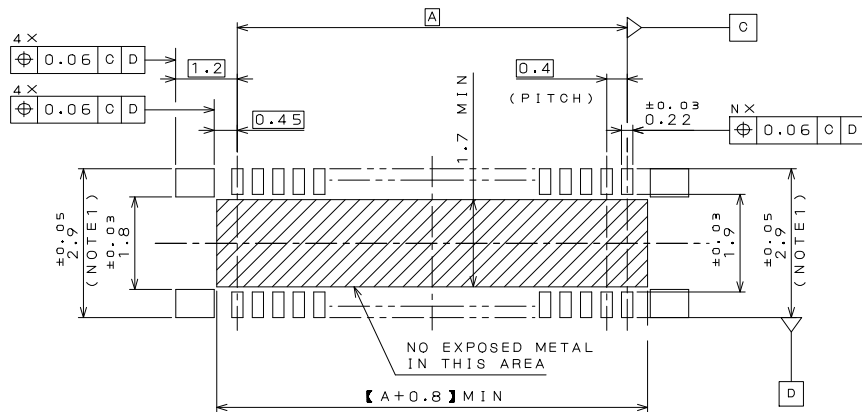
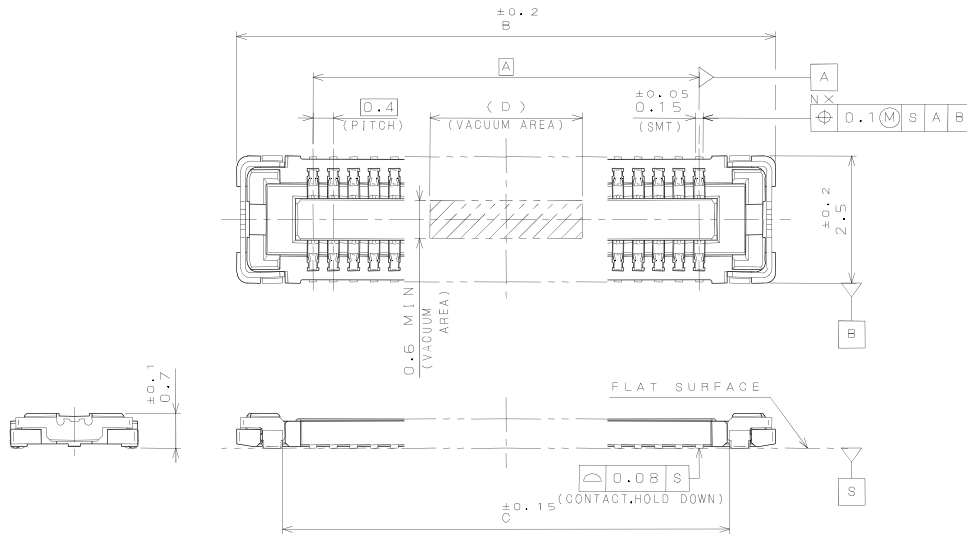
Ordering Information (Receptacle)



Note 1) An embossed tape reel contains 8,000 pieces of standard product, or 300 pieces of inspection jig product.
Please contact us for details on embossed tape specifications.

Part Number	WP7A-S***VA1
SJ Drawing	SJ111877

WP7A Receptacle



APPLICABLE P.C.B. DIMENSION (REF.)
適合基板寸法 (参考)

DIMENSIONS 寸法 NUMBER OF CONTACT 芯数	DIMENSIONS			
	A	B	C	D
10	1.6	4.6	2.8	2.0
16	2.8	5.8	4.0	2.0
20	3.6	6.6	4.8	2.0
22	4.0	7.0	5.2	2.0
24	4.4	7.4	5.6	2.0
26	4.8	7.8	6.0	5.0
28	5.2	8.2	6.4	5.0
30	5.6	8.6	6.8	5.0
32	6.0	9.0	7.2	5.0

Note 1) Dimension 3.5 ± 0.05 is recommended in case repair is needed.



YDS CAMERA MODULE

your best camera partner

Camera Module Pinout Definition Reference Chart

OmniVision	Sony	Samsung	On-Semi	Aptina	Himax	GalaxyCore	PixArt	SmartSens	Sensors
Pin Signal									
Description									
DGND GND									
ground for digital circuit									
AGND									
ground for analog circuit									
PCLK DCK									
DVP PCLK output									
XCLR PWDN XSHUTDOWN STANDBY									
power down active high with internal pull-down resistor									
MCLK XVCLK XCLK INCK									
system input clock									
RESET RST									
reset active low with internal pull-up resistor									
NC NULL									
no connect									
SDA SIO_D SIOD									
SCCB data									
SCL SIO_C SIOC									
SCCB input clock									
VSYNC XVS FSYNC									
DVP VSYNC output									
HREF XHS									
DVP HREF output									
DOVDD									
power for I/O circuit									
AFVDD									
power for VCM circuit									
AVDD									
power for analog circuit									
DVDD									
power for digital circuit									
STROBE FSTROBE									
strobe output									
FSIN									
synchronize the VSYNC signal from the other sensor									
SID									
SCCB last bit ID input									
ILPWM									
mechanical shutter output indicator									
FREQ									
frame exposure / mechanical shutter									
GPIO									
general purpose inputs									
SLASEL									
I2C slave address select									
AFEN									
CEN chip enable active high on VCM driver IC									
MIPI Interface									
MDN0 DN0 MD0N DATA_N DMO1N									
MIPI 1st data lane negative output									
MDP0 DP0 MD0P DATA_P DMO1P									
MIPI 1st data lane positive output									
MDN1 DN1 MD1N DATA2_N DMO2N									
MIPI 2nd data lane negative output									
MDP1 DP1 MD1P DATA2_P DMO2P									
MIPI 2nd data lane positive output									
MDN2 DN2 MD2N DATA3_N DMO3N									
MIPI 3rd data lane negative output									
MDP2 DP2 MD2P DATA3_P DMO3P									
MIPI 3rd data lane positive output									
MDN3 DN3 MD3N DATA4_N DMO4N									
MIPI 4th data lane negative output									
MDP3 DP3 MD3P DATA4_P DMO4P									
MIPI 4th data lane positive output									
MCN CLKN CLK_N DCKN									
MIPI clock negative output									
MCP CLKP MCP CLK_P DCKN									
MIPI clock positive output									
DVP Parallel Interface									
D0 DO0 Y0									
DVP data output port 0									
D1 DO1 Y1									
DVP data output port 1									
D2 DO2 Y2									
DVP data output port 2									
D3 DO3 Y3									
DVP data output port 3									
D4 DO4 Y4									
DVP data output port 4									
D5 DO5 Y5									
DVP data output port 5									
D6 DO6 Y6									
DVP data output port 6									
D7 DO7 Y7									
DVP data output port 7									
D8 DO8 Y8									
DVP data output port 8									
D9 DO9 Y9									
DVP data output port 9									
D10 DO10 Y10									
DVP data output port 10									
D11 DO11 Y11									
DVP data output port 11									

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Cameras Applications



IMAGING DEVICES



Camera Reliability Test

Reliability Inspection Item		Testing Method	Acceptance Criteria	
Category	Item			
Environmental	Storage Temperature	High 60°C 96 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature	High 60°C 24 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 24 Hours	Temperature Chamber	No Abnormal Situation
	Humidity	60°C 80% 24 Hours	Temperature Chamber	No Abnormal Situation
	Thermal Shock	High 60°C 0.5 Hours Low -20°C 0.5 Hours Cycling in 24 Hours	Temperature Chamber	No Abnormal Situation
Physical	Drop Test (Free Falling)	Without Package 60cm	10 Times on Wood Floor	Electrically Functional
		With Package 60cm	10 Times on Wood Floor	Electrically Functional
	Vibration Test	50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional
		50Hz Z-Axis 2mm 30min	Vibration Table	Electrically Functional
	Cable Tensile Strength Test	Loading Weight 4 kg 60 Seconds Cycling in 24 Hours	Tensile Testing Machine	Electrically Functional
Electrical	ESD Test	Contact Discharge 2 KV	ESD Testing Machine	Electrically Functional
		Air Discharge 4 KV	ESD Testing Machine	Electrically Functional
	Aging Test	On/Off 30 Seconds Cycling in 24 Hours	Power Switch	Electrically Functional
	USB Connector	On/Off 250 Times	Plug and Unplug	Electrically Functional



Camera Inspection Standard

Inspection Item		Inspection Method	Standard of Inspection		
Category	Item				
Appearance	FPC/ PCB	Color	The Naked Eye	Major Difference is Not Allowed.	
		Be Torn/Chopped	The Naked Eye	Copper Crack Exposure is Not Allowed.	
		Marking	The Naked Eye	Clear, Recognizable (Within 30cm Distance)	
	Holder	Scratches	The Naked Eye	The Inside Crack Exposure is Not Allowed	
		Gap	The Naked Eye	Meet the Height Standard	
		Screw	The Naked Eye	Make Sure Screws Are Presented (If Any)	
		Damage	The Naked Eye	The Inside Crack Exposure is Not Allowed	
	Lens	Scratch	The Naked Eye	No Effect On Resolution Standard	
		Contamination	The Naked Eye	No Effect On Resolution Standard	
		Oil Film	The Naked Eye	No Effect On Resolution Standard	
		Cover Tape	The Naked Eye	No Issue On Appearance.	
	Function	Image	No Communication	Test Board	Not Allowed
			Bright Pixel	Black Board	Not Allowed In the Image Center
Dark Pixel			White board	Not Allowed In the Image Center	
Blurry			The Naked Eye	Not Allowed	
No Image			The Naked Eye	Not Allowed	
Vertical Line			The Naked Eye	Not Allowed	
Horizontal Line			The Naked Eye	Not Allowed	
Light Leakage			The Naked Eye	Not Allowed	
Blinking Image			The Naked Eye	Not Allowed	
Bruise			Inspection Jig	Not Allowed	
Resolution			Chart	Follows Outgoing Inspection Chart Standard	
Color			The Naked Eye	No Issue	
Noise			The Naked Eye	Not Allowed	
Corner Dark			The Naked Eye	Less Than 100px By 100px	
Color Resolution			The Naked Eye	No Issue	
Dimension	Height	The Naked Eye	Follows Approval Data Sheet		
	Width	The Naked Eye	Follows Approval Data Sheet		
	Length	The Naked Eye	Follows Approval Data Sheet		
	Overall	The Naked Eye	Follows Approval Data Sheet		

YDSCAM Package Solutions

YDS Camera Module



Complete with Lens Protection Film



Tray with Grid and Space



Place Cameras on the Tray



YDSCAM Package Solutions

Full Tray of Cameras



Cover Tray with Lid



Place Tray into Anti-Static Bag



Vacuum the Anti-Static Bag



YDSCAM Package Solutions

Sealed Vacuum Anti-Static Bag with Labels

1. Model and Description 2. Quantity 3. Manufacturing Date Code 4. Caution



YDSCAM Package Solutions

Place Foam Sheets Between Tray Bags



Foam Sheets are Larger Than Trays



Place Foam Sheets and Trays into Box



Foam Sheets are Tightly Fitting in Box



Seal the Carbon Box



Label the Carbon Shipping Box





YDSCAM Package Solutions

USB Camera Module

Complete with Lens Protection Film



Place Camera Sample into Anti-Static Bag

Place USB Cameras into Tray



Seal the Tray with Anti-Static Bag

Label the Carbon Shipping Box



YDSCAM Package Solutions

Place Camera Sample into Anti-Static Bag



Place Connectors into Anti-Static Bag



Label the Sample Bags



Place Connectors into Reel



Place Samples into the Carbon Box



Place Connectors into the Carbon Box





YDS CAMERA MODULE

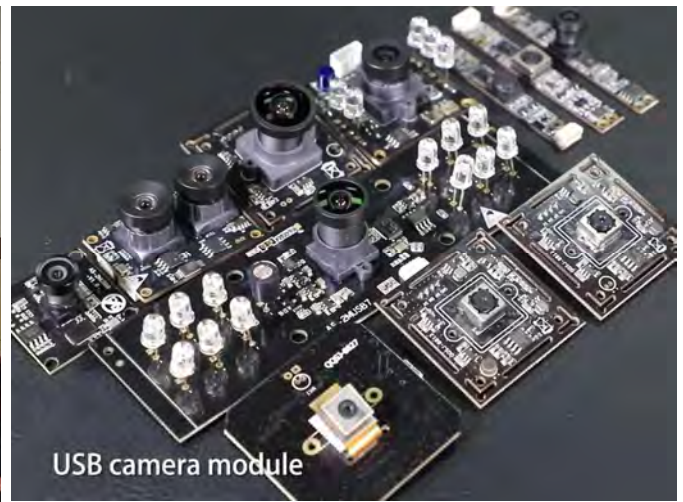
your best camera partner

Company YDSCAM

YingDeShun Co. Ltd. (YDS) was established in 2017, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. YDS is occupying 20,000 square feet automated plants with 100 employees of annual throughput 30,000,000 units cameras.

YDS provides OEM, ODM design, contract manufacturing, and builds the camera products. You may provide the requirements to us, even with a hand draft, our sales and engineering work together to meet your needs. We consider ourselves your last-term partner in developing practical and innovative solutions.

Our team covers everything from initial concept development to mass produced product. YDS specializes in customized camera design, raw material, electronic engineering, firmware/software development, product testing, and packing design. Our experienced strategic supply systems offer a robust and dependable manufacturing capacity for orders of various sizes.



Limited Warranty

YDS provides the following limited warranty if you purchased the Product(s) directly from YDS company or from YDS's website www.YDSCAM.com. Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. YDS guarantees that the Product(s) will be free from defects in materials and workmanship under normal use for a period of one (1) year from the date you receive the product ("Warranty Period").

For all Product(s) that contain or develop material defects in materials or workmanship during the Warranty Period, YDS will, at its sole option, either: (i) repair the Product(s); (ii) replace the Product(s) with a new or refurbished Product(s) (replacement Product(s) being of identical model or functional equivalent); or (iii) provide you a refund of the price you paid for the Product(s).

This Limited Warranty of YDS is solely limited to repair and/or replacement on the terms set forth above. YDS is not reliable or responsible for any subsequent events.



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YDS CAMERA MODULE

your best camera partner

YDS Strength

Powerful Factory



Professional Service



Promised Delivery



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