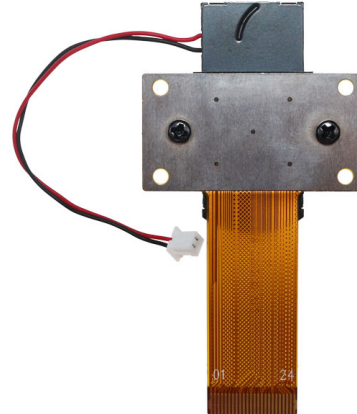
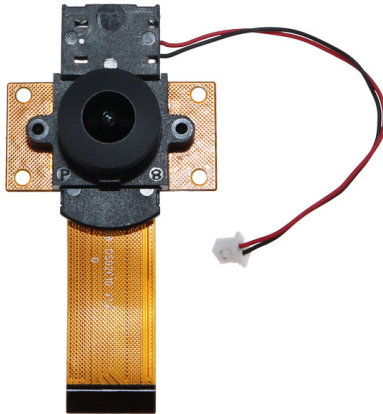


YDS-IRSW-OS02C10 V1.2

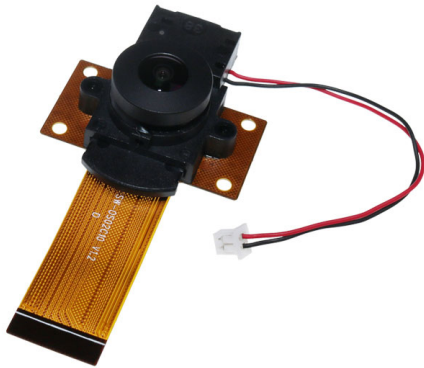
5MP OmniVision OS02C10 IR Switch MIPI Interface M12 Fixed Focus Camera Module



| | |
|----------------------------------|---|
| Camera Module No. | YDS-IRSW-OS02C10 V1.2 |
| Resolution | 5MP |
| Image Sensor | OS02C10 |
| Sensor Type | 1/2.8" |
| Pixel Size | 2.9 um x 2.9 um |
| EFL | 1.75 mm |
| F.NO | 2.00 |
| Pixel | 1920 x 1080 |
| View Angle | 200.0°(DFOV) 200.0°(HFOV) 100.0°(VFOV) |
| Lens Dimensions | 16.20 x 16.10 x 12.82 mm |
| Module Size | 56.47 x 30.00 mm |
| Module Type | Fixed Focus |
| Lens Model | YDS-LENS-TRC-4175A6 |
| 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 | FH12-24S-0.5SH |



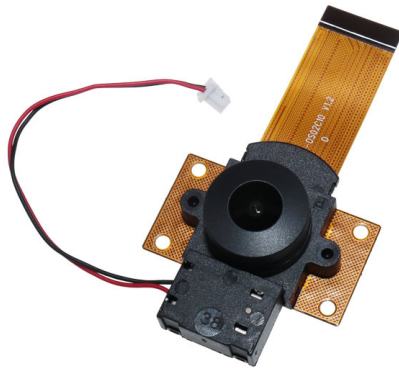
YDS-IRSW-OS02C10 V1.2 5MP OmniVision OS02C10 IR Switch MIPI Interface M12 Fixed Focus Camera Module



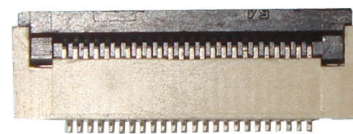
Top View



Side View



Bottom View

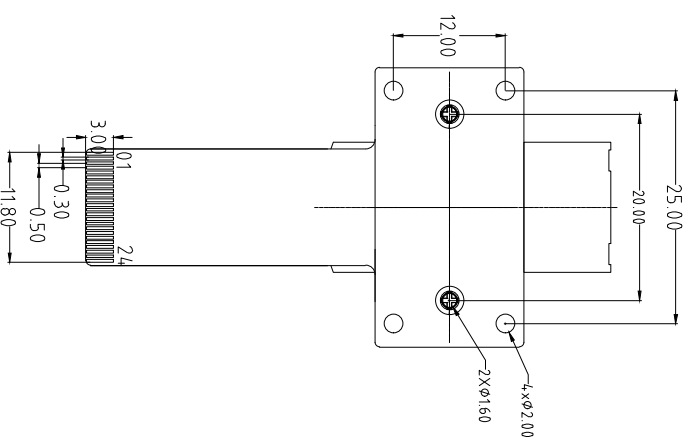
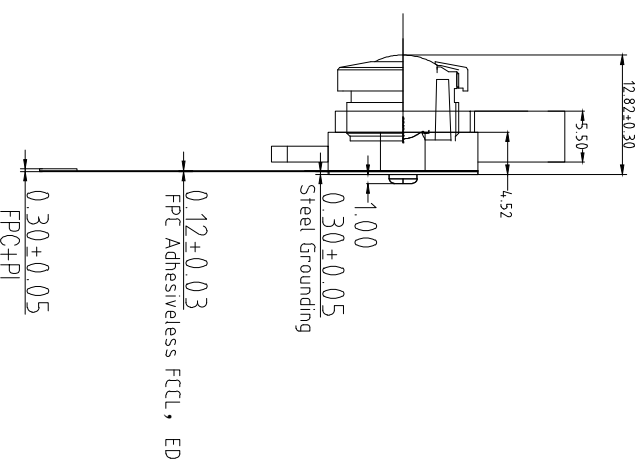
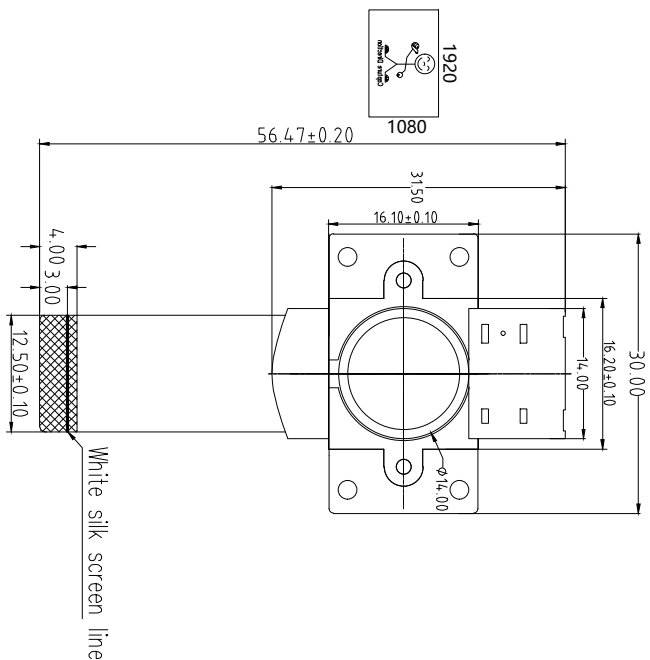


Mating Connector

ROHS

PIN SIGNAL

| | |
|----|-------------|
| 1 | AGND |
| 2 | AVDD2.8V |
| 3 | SDA |
| 4 | SCL |
| 5 | PWDN |
| 6 | RST/XSHUNDN |
| 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 | DVDD1.1V |
| 23 | DOVDD1.8V |
| 24 | MCLK |



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

Parameter:

1、Sensor specification:

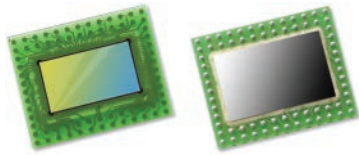
Image Sensor: OS02C10
Pixel: 2.9umx2.9um
Lens Type: 1/2.8
Important Voltage Description: DVDD1.1V
(external power supply);

2、Lens specification:

FOV: 200°(D);200°(H);100°(V)
F/NO.: 2.0
TV distortion: <-35.9%
Focal length: 1.75mm
Composition: 2G4P+IR Switch

| | | | |
|-------------|-------|------------------|-------------------|
| Designed By | Kevin | Model Name: | IRSW-OS02C10 V1.2 |
| Checked By | Aouly | Projection Type: | Third Angle |
| | | Unit: | mm |
| | | Material: | ----- |
| | | Scale: | 1:1 |
| | | Sheet: | 1 of 1 |
| | | Version: | 1/0 |

| Version | Information | Date |
|---------|------------------------|-----------|
| V1.0 | First Version | 3-2-2019 |
| V1.2 | Change lens and IR cut | 5-31-2021 |



OS02C10 2-megapixel product brief



available in
a lead-free
package

Image Sensor Combines Ultra Low Light and Nyxel® NIR Technologies for Industry's Best Nighttime Camera Performance

OmniVision's OS02C10 is a 2.9-micron, 2-megapixel image sensor with breakthrough ultra-low-light (ULL) technology. Combining ULL with OmniVision's industry-leading Nyxel® near-infrared (NIR) technology, the OS02C10 works equally well in all lighting conditions. It can detect incident light in both visible and NIR wavelengths and produce precise color and monochrome images for security applications such as remote surveillance cameras with AI for accurate facial recognition.

Nyxel® NIR technology infuses the OS02C10 with exceptional quantum efficiency (QE) of 60% at 850 nm and 40% at 940 nm, which is 2x to 4x better than competing devices. This enables the use of lower-power IR illumination in total darkness, resulting in an estimated 3x reduction in system-level power consumption. Additionally, 940 nm NIR lighting cannot be detected by the human eye in dark indoor settings, while 850 nm light is ideal for outdoor security cameras. The OS02C10's ability to capture crisp, clear images using undetectable 940 nm NIR light means that indoor security cameras will not disturb sleeping occupants, and can be easily concealed from intruders.

The amount of NIR light that a sensor requires to capture high-quality images can be quantified with a new metric called NIR SNR1, which takes into account the QE, pixel size and read noise. The OS02C10 achieves an SNR_{1850nm} of 23 nW/cm² and an SNR_{1940nm} of 31 nW/cm², which means designers can reduce IR illumination to consume 2x to 4x less power compared to the competitors' sensors, for the same environment and over the same image-detection range.

The OS02C10 has a superior low-noise design, achieving an SNR1 of 0.16 lux while producing high definition 1080p images. OmniVision's proprietary dual-conversion-gain technology allows this sensor to achieve the industry's best ULL performance, while the 3-frame staggered shutter minimizes motion artifacts and enables a high dynamic range (HDR) of 120 dB. Additionally, these technologies are easily upgradable to 2K and 4K resolution as security systems begin their transition to higher-quality displays.

Find out more at www.ovt.com.



OmniVision.

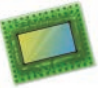
Applications

- Security Camera
- High Resolution Consumer Camera
- Action Camera

Product Features

- QE enhancement in NIR range
- support for image size:
 - 1920 x 1080
 - VGA
 - QVGA, and any cropped size
- high dynamic range
- high sensitivity
- programmable conversion gain
- image sensor processor functions:
 - defective pixel cancellation
 - automatic black level correction, etc.
- pixel data: 12b RAW RGB
- SCCB for register programming
- programmable GPIOs
- high speed serial data transfer with MIPI CSI-2 or LVDS
- external frame synchronization capability
- embedded temperature sensor
- one time programmable (OTP) memory

OS02C10



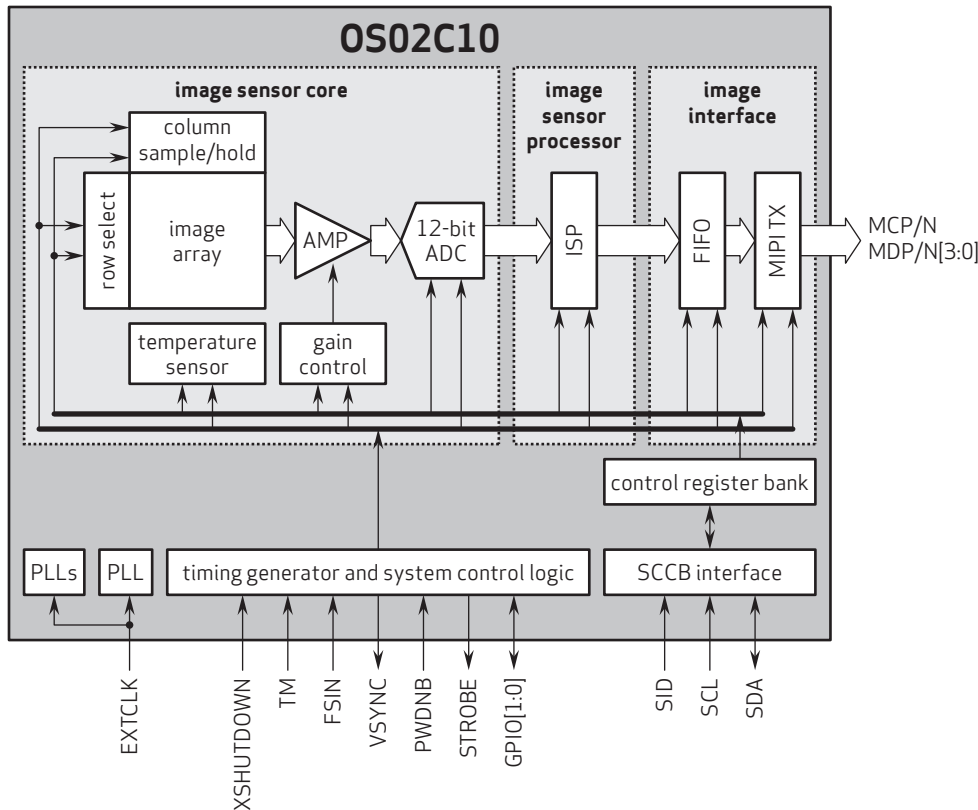
Ordering Information

- OS02C10-J70A-Z (color, lead-free)
70-pin fan-out package

Product Specifications

- active array size: 1920 x 1080
- maximum image transfer rate:
 - 40X3 fps @ 1080p in 10-bit
 - 30X3 fps @ 1080p in 12-bit
- power supply:
 - analog: 2.8V
 - digital: 1.1V
 - I/O pins: 1.8V
- temperature range:
 - operating: -30°C to +85°C junction temperature
- output interfaces:
 - up to 4-lane MIPI CSI-2 or LVDS
- lens size: 1/2.8"
- lens chief ray angle: 9° linear
- output formats: linear output, dual exposure HDR (long and short), 3-exposure HDR (long, short, and very short), conversion gain programmable in each channel
- scan mode: progressive
- shutter: rolling shutter
- pixel size: 2.9 μm x 2.9 μm
- image area: 5614.4 μm x 3178.4 μm

Functional Block Diagram



4275 Burton Drive
Santa Clara, CA 95054
USA

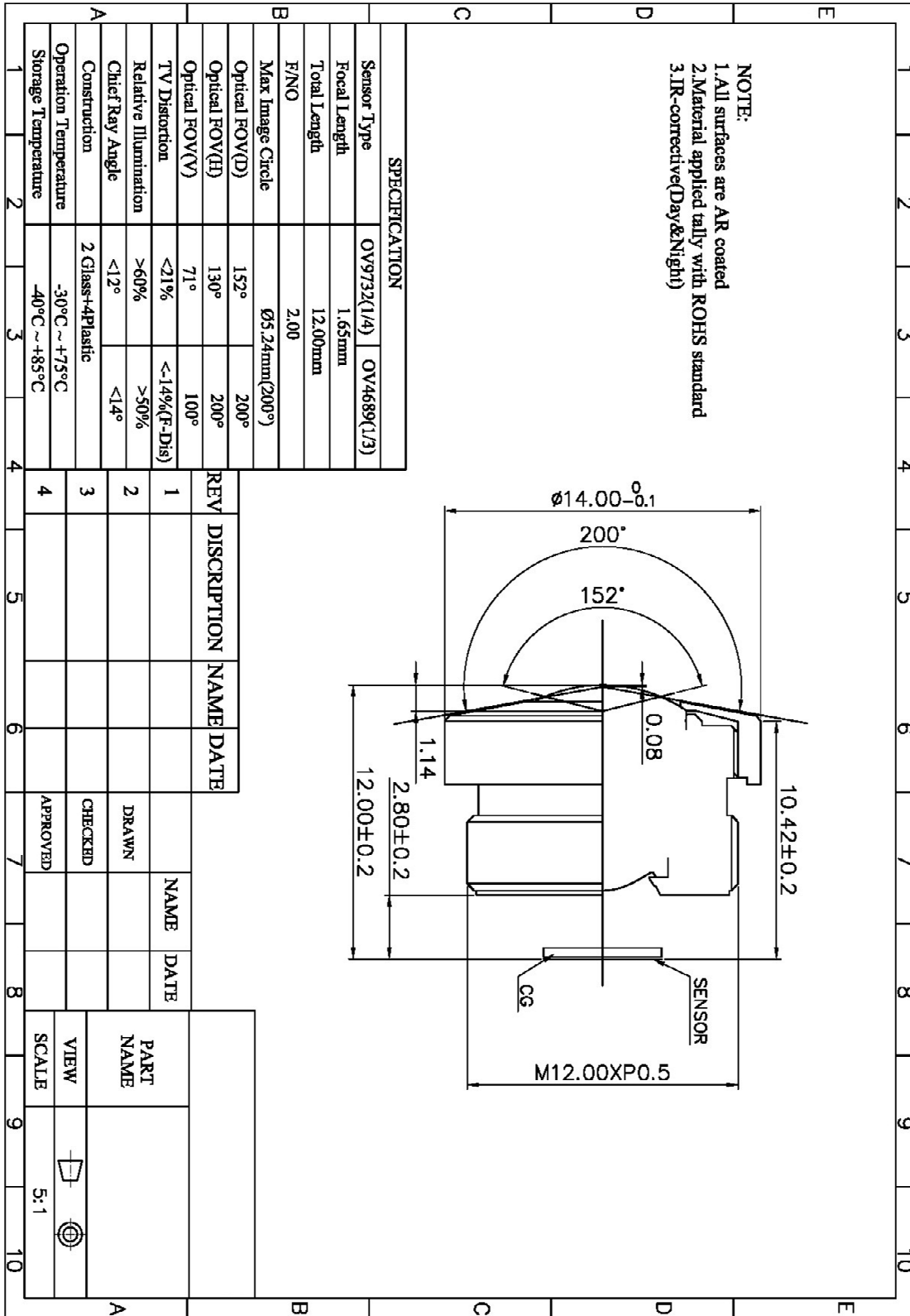
Tel: +1 408 567 3000
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www.ovt.com

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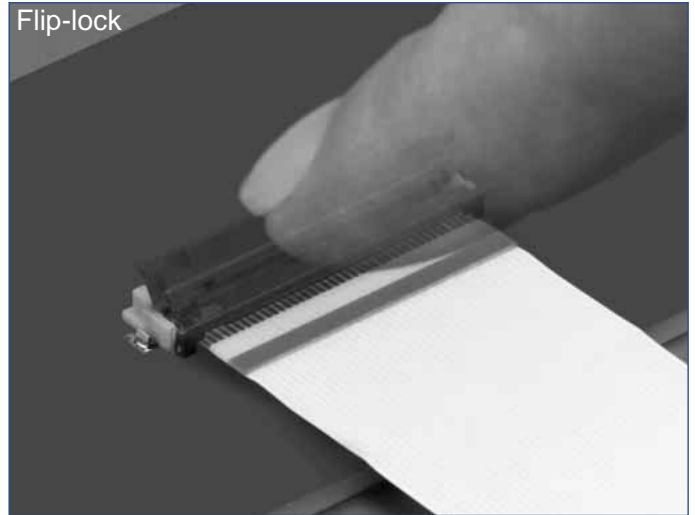
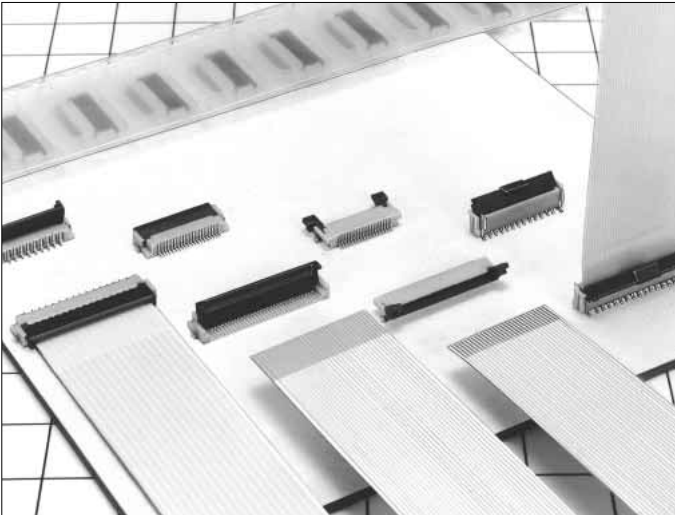
OmniVision

YDS-LENS-TRC-4175A2



0.5mm and 1mm Pitch Connectors For FPC/FFC

FH12 Series



■ Features

1. Ease of Use and Space Savings

Only one finger or 6.9N (Newtons) of force is required to lock Hirose's rotational actuator (flip-lock) as compared to using 2 fingers and 39.2N to close a FFC/FPC connector from our competition.

The Flip-Lock design also allows customers to place 2 or more connectors side by side as there is no need to waste additional board space for a side latch.

2. Strengthened Flip-lock Actuator

The standard Flip-Lock requires only 2.0mm height above the board. A strengthened lock lever is available which only requires an additional 0.4mm.

3. Supports Thin FPC (0.18mm)

Hirose does not require double-sided FPC to have any additional strengthening plate or stiffener and can therefore support a thickness of as little as 0.18mm +/- 0.05.

4. Hirose Ensures Reliability

Hirose's patented half tuning fork contacts maintain the required normal force without relying on the connector housing. With our competitor's conventional products the housing walls support the contact force, which does not provide for long-term reliability.

5. Prevention of Solder Bridge

Excess solder cavity absorbs excessive solder and avoids solder bridging.

6. Three different assembly types

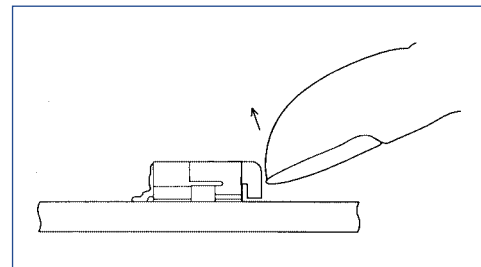
FH12 is offered in Top & Bottom Contact and Vertical Mount and offered in both a 0.5mm contact pitch as well as a 1.0mm contact pitch (bottom contact only).

■ Applications

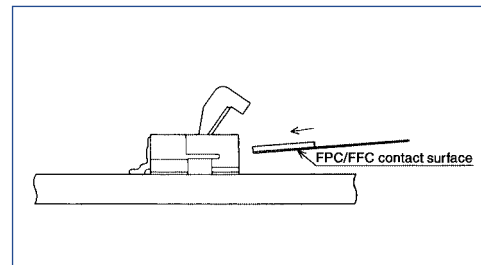
Notebook computers, printers, PDAs, digital cameras and other compact devices for interconnecting the main circuit board with the LCD, HDD or other device.

Rotating One-touch Mechanism

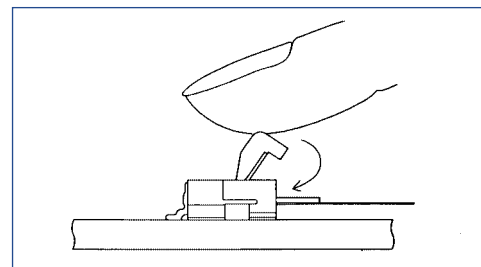
①



②



③



Product Specifications

| | | | |
|--------|---------------------------------|--|--|
| Rating | Current rating: 0.5A DC(Note 1) | Operating Temperature Range: -40 to +70°C (Note 2) | Storage Temperature Range: -10 to +50°C (Note 3) |
| | Voltage rating: 50V AC | Operating Humidity Range: Relative humidity, 90% max. (Not dewed) | Storage Humidity Range: Relative humidity, 90% max. (Not dewed) |

| | | |
|----------------|------------------------|----------------------------------|
| Applicable FPC | t=0.3±0.05 Gold plated | t=0.18 ± 0.05 for FH12F-*S-0.5SH |
|----------------|------------------------|----------------------------------|

| Item | Specification | Conditions |
|--------------------------------------|---|--|
| 1. Insulation resistance | 500M ohms minimum | 100V DC |
| 2. Withstanding voltage | No flashover or insulation breakdown. | 150V AC/1 minute |
| 3. Contact resistance | 50m ohms maximum | 1mA |
| 4. Durability (Insertion/withdrawal) | Contact resistance: 50m ohms maximum No damage, cracks, or parts dislocation. | 20 cycles |
| 5. Vibration | No electrical discontinuity of 1μs or more Contact resistance: 50m ohms maximum. No damage, cracks, or parts dislocation. | Frequency: 10 to 55 Hz, single amplitude of 0.75 mm, 2 hours in each of the 3 directions. |
| 6. Shock | No electrical discontinuity of 1μs or more Contact resistance: 50m ohms maximum. No damage, cracks, or parts dislocation. | Acceleration of 490 m/s ² , 11 ms duration, sine half-wave waveform, 3 cycles in each of the 3 axis. |
| 7. Humidity(Steady state) | Contact resistance: 50m ohms maximum. Insulation resistance: 50M ohms minimum. No damage, cracks, or parts dislocation. | 96 hours at 40°C and humidity of 90% to 95% |
| 8. Temperature Cycle | Contact resistance: 50m ohms maximum. Insulation resistance: 50M ohms minimum. No damage, cracks, or parts dislocation. | Temperature: -40°C → 15 to 35°C → 85°C → 15 to 35°C, Time: 30 → 5 max. → 30 → 5 max.(minutes) 5 cycles |
| 9. Resistance to Soldering heat | No deformation of components affecting performance. | Reflow: At the recommended temperature profile Manual soldering: 350±5°C for 3 seconds |

Note 1: When passing the current through all of the contacts, use 70% of the current rating.

Note 2: Includes temperature rise caused by current flow.

Note 3: The term "storage" refers to products stored for long period of time prior to mounting and use. Operating Temperature Range and Humidity range covers nonconducting condition of installed connectors in storage, shipment or during transportation.

Material

| Part | Material | Finish | Remarks |
|----------------|-------------------------|--------------------|---------|
| Insulator | Polyamide, LCP(60 pos.) | Color : Beige | UL94V-0 |
| Actuator | PPS | Color : Dark brown | |
| Contact | Phosphor bronze | Gold plated | |
| Metal Fittings | Brass | Tin plated | |

Ordering Information

FH12 **A** - **10** (**4**) - **S** **A** - **0.5** **SH** (**55**)
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

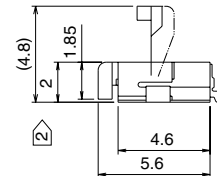
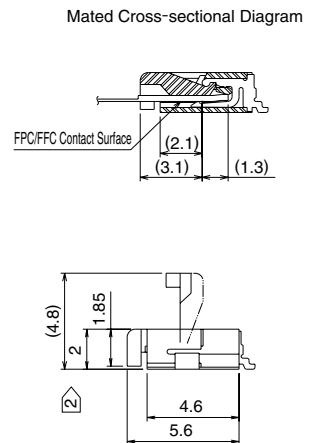
| | |
|--|--|
| ① Series Name : FH12 | ⑤ Contact alignment: Single |
| ② Blank : standard type A : Top contact type S : Type with strengthened flip-lock actuator F : Type with 0.18mm FPC End Thickness | ⑥ Eccentric direction: Blank : standard type A : Eccentric type |
| ③ Standard type : Number of contacts Eccentric type : Number of contacts in 0.5mm housing | ⑦ Contacts Pitch : 0.5mm, 1mm |
| ④ Standard type : Blank Eccentric type : Number of contacts | ⑧ Contact type SH : SMT horizontal mounting type SV : SMT vertical mounting type |
| | ⑨ Plating specification (55) : Gold plated |

FH12 Series 0.5mm and 1mm Pitch Connectors For FPC/FPC

Series Configuration

| Pitch | Bottom Contact Type | Top Contact Type | Vertical mounting Type |
|-------|--|--|--|
| 0.5mm |  <p>FH12- ** S-0.5SH P.12 Number of contacts 6, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 33, 34, 35, 36, 40, 45, 50, 53</p> |  |  |
| | <p>Type with Strengthened Lock Lever</p> | | |
| | <p>FH12S- ** S-0.5SH P.13 Number of contacts 30, 40, 45, 50, 53</p> | | |
| | <p>Type with 0.18mm FPC End Thickness</p> | | |
| | <p>FH12F- ** S-0.5SH P.14 Number of contacts 6, 8, 10, 12, 13, 14, 15, 16, 18, 20, 22, 24, 25, 26, 28, 30, 32, 34, 36, 40</p> | | |
| 1mm |  <p>Standard FH12- ** S-1SH P.18 Eccentric FH12- ** (***) SA-1SH Standard Number of contacts 5, 6, 7, 8, 9, 11, 12, 16, 17, 22, 26 Eccentric Number of contacts 4, 6, 8, 10, 11, 14, 19, 24</p> | |  <p>FH12- ** S-1SV P.19 Number of contacts 6, 7, 8, 16, 20, 22, 24</p> |

0.5mm Pitch Bottom Contact Type



Unit:mm

| Part Number | CL No. | Number of Contacts | A | B | C | D | RoHS |
|---------------------------|---------------|--------------------|------|------|------|-------|------|
| FH12- 6S-0.5SH(55) | 586-0582-5-55 | 6 | 2.5 | 6.1 | 7.1 | 3.57 | YES |
| FH12- 8S-0.5SH(55) | 586-0744-5-55 | 8 | 3.5 | 7.1 | 8.1 | 4.57 | |
| FH12-10S-0.5SH(55) | 586-0522-3-55 | 10 | 4.5 | 8.1 | 9.1 | 5.57 | |
| FH12-11S-0.5SH(55) | 586-0600-5-55 | 11 | 5 | 8.6 | 9.6 | 6.07 | |
| FH12-12S-0.5SH(55) | 586-0704-0-55 | 12 | 5.5 | 9.1 | 10.1 | 6.57 | |
| FH12-13S-0.5SH(55) | 586-0549-0-55 | 13 | 6 | 9.6 | 10.6 | 7.07 | |
| FH12-14S-0.5SH(55) | 586-0533-0-55 | 14 | 6.5 | 10.1 | 11.1 | 7.57 | |
| FH12-15S-0.5SH(55) | 586-0523-6-55 | 15 | 7 | 10.6 | 11.6 | 8.07 | |
| FH12-16S-0.5SH(55) | 586-0531-4-55 | 16 | 7.5 | 11.1 | 12.1 | 8.57 | |
| FH12-17S-0.5SH(55) | 586-0606-1-55 | 17 | 8 | 11.6 | 12.6 | 9.07 | |
| FH12-18S-0.5SH(55) | 586-0530-1-55 | 18 | 8.5 | 12.1 | 13.1 | 9.57 | |
| FH12-19S-0.5SH(55) | 586-0534-2-55 | 19 | 9 | 12.6 | 13.6 | 10.07 | |
| FH12-20S-0.5SH(55) | 586-0524-9-55 | 20 | 9.5 | 13.1 | 14.1 | 10.57 | |
| FH12-22S-0.5SH(55) | 586-0532-7-55 | 22 | 10.5 | 14.1 | 15.1 | 11.57 | |
| FH12-24S-0.5SH(55) | 586-0521-0-55 | 24 | 11.5 | 15.1 | 16.1 | 12.57 | |
| FH12-25S-0.5SH(55) | 586-0692-3-55 | 25 | 12 | 15.6 | 16.6 | 13.07 | |
| FH12-26S-0.5SH(55) | 586-0576-2-55 | 26 | 12.5 | 16.1 | 17.1 | 13.57 | |
| FH12-28S-0.5SH(55) | 586-0612-4-55 | 28 | 13.5 | 17.1 | 18.1 | 14.57 | |
| Note ② FH12-30S-0.5SH(55) | 586-0525-1-55 | 30 | 14.5 | 18.1 | 19.1 | 15.57 | |
| FH12-32S-0.5SH(55) | 586-0681-7-55 | 32 | 15.5 | 19.1 | 20.1 | 16.57 | |
| FH12-33S-0.5SH(55) | 586-0520-8-55 | 33 | 16 | 19.6 | 20.6 | 17.07 | |
| FH12-34S-0.5SH(55) | 586-0617-8-55 | 34 | 16.5 | 20.1 | 21.1 | 17.57 | |
| FH12-35S-0.5SH(55) | 586-0740-4-55 | 35 | 17.0 | 20.6 | 21.6 | 18.07 | |
| FH12-36S-0.5SH(55) | 586-0526-4-55 | 36 | 17.5 | 21.1 | 22.1 | 18.57 | |
| Note ② FH12-40S-0.5SH(55) | 586-0527-7-55 | 40 | 19.5 | 23.1 | 24.1 | 20.57 | |
| Note ② FH12-45S-0.5SH(55) | 586-0528-0-55 | 45 | 22 | 25.6 | 26.6 | 23.07 | |
| Note ② FH12-50S-0.5SH(55) | 586-0529-2-55 | 50 | 24.5 | 28.1 | 29.1 | 25.57 | |
| Note ② FH12-53S-0.5SH(55) | 586-0595-7-55 | 53 | 26 | 29.6 | 30.6 | 27.07 | |

Note 1 : Embossed tape reel packaging (2,000 pieces/reel).
 Order by number of reels.

Note ② : If there is no problem with the connector height, we recommend the type with the strengthened Flip-lock actuator (FH12S-*S-0.5SH).
 Standard type connector height: 2 mm
 Connector height of type with strengthened Flip-lock actuator: 2.4 mm



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 |
| FREX | | | | | | | | | 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



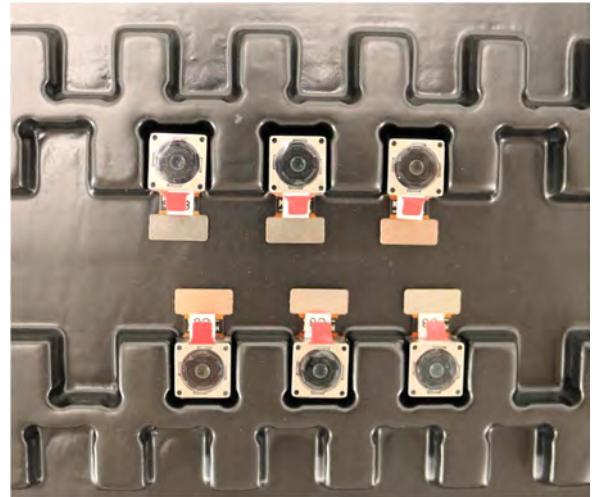
Complete with Lens Protection Film



Tray with Grid and Space



Place Cameras on the Tray

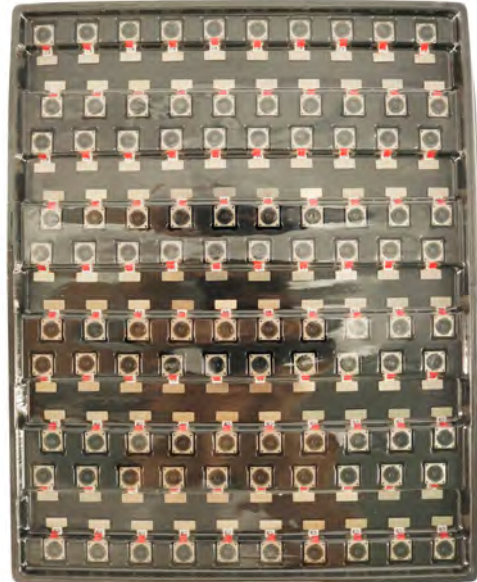


YDSCAM Package Solutions

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

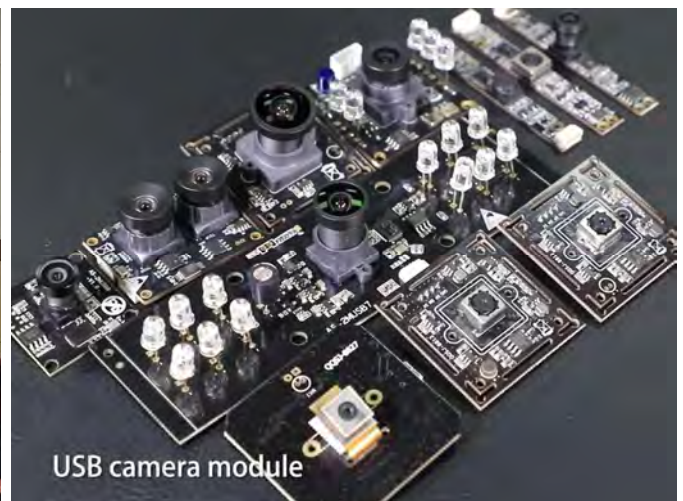
your best camera partner

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 Strength

Powerful Factory



Professional Service



Promised Delivery



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