KLT-J4K-OV2732 V3.2 NIR
2MP OmniVision OV2732 MIPI and DVP Parallel Interface No IR Filter Fixed Focus Camera Module

Front View

Back View

Specifications

Camera Module No.	KLT-J4K-OV2732 V3.2 NIR
Resolution	2MP
Image Sensor	OV2732
Sensor Type	1/4"
Pixel Size	2.0 um x 2.0 um
EFL	3.20 mm
F.NO	2.80
Pixel	1920 x 1080
View Angle	70.0°(DFOV), 58.6°(HFOV), 45.3°(VFOV)
Lens Dimensions	8.00 x 8.00 x 4.72 mm
Module Size	18.50 x 12.50 mm
Module Type	Fixed Focus
Interface	MIPI and DVP Parallel
Auto Focus VCM Driver IC	None
Lens Model	KLT-LENS-M5182
Lens Type	No IR Filter Lens
Operating Temperature	-40°C to +85°C
Mating Connector	FH12-24S-0.5SH

KLT-J4K-OV2732 V3.2 NIR
2MP OmniVision OV2732 MIPI and DVP Parallel Interface No IR Filter Fixed Focus Camera Module
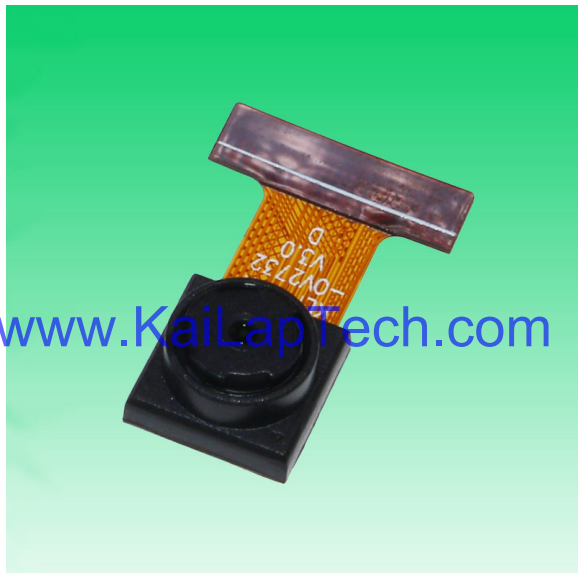
Top View

Side View

Bottom View

Mating Connector

ROHS

NO	SIGNAL
1	FSIN
2	AGND
3	SIO_D
4	AVDD 2.8V
5	SIO_C
6	RESET
7	VSYNC
8	PWDN
9	HREF
10	DVDD 1.2V
11	DOVDD 1.8V
12	D9/MDN1
13	MCLK
14	D8/MDP1
15	DGND
16	D7/MCN
17	PCLK
18	D6/MCP
19	D2
20	D5/MDN0
21	D3
22	D4/MDP0
23	D10
24	D11

NOTE:

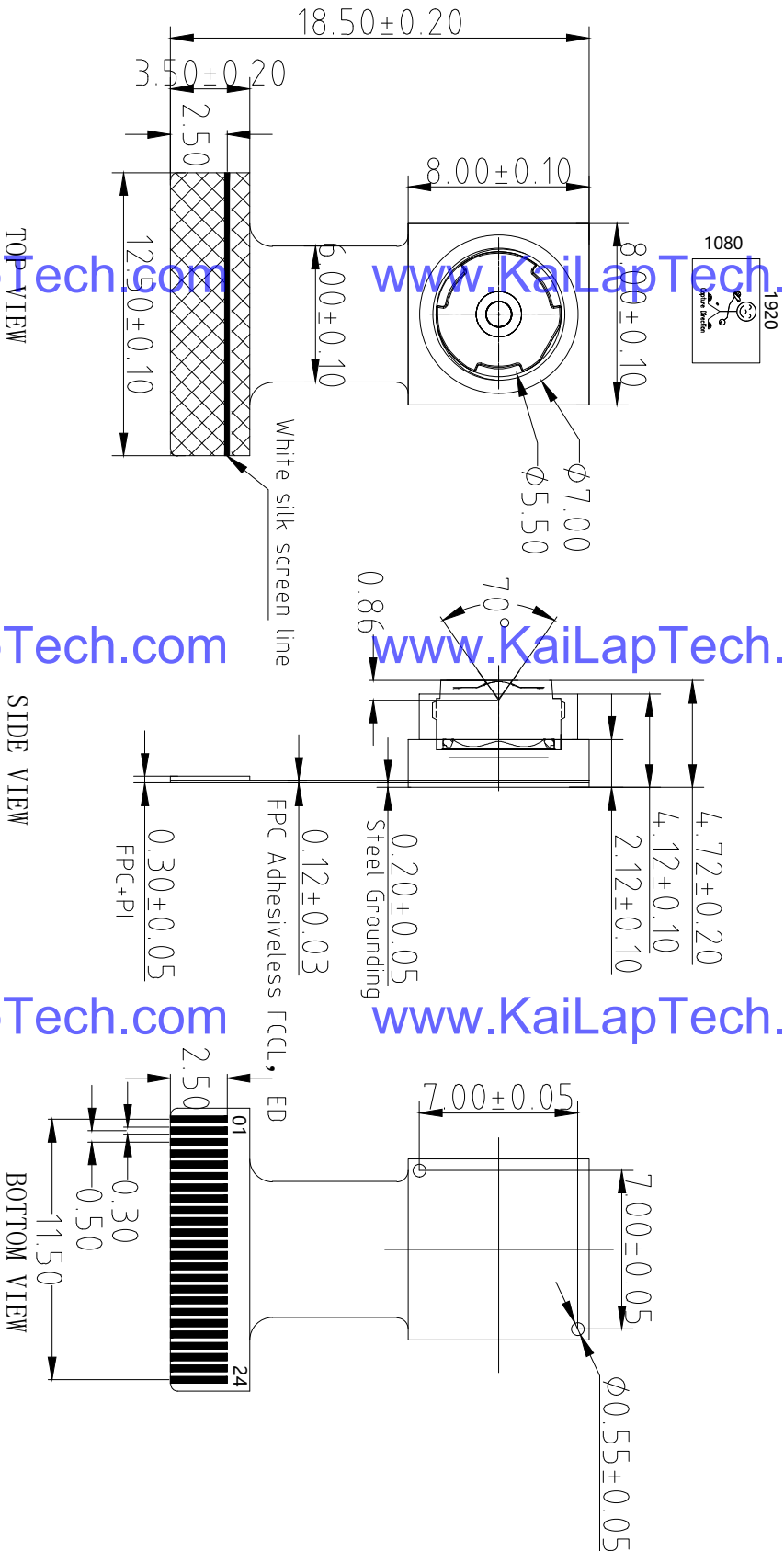1.The device slave address:0x20(w),0x21(r)

Parameters:

1、Sensor specification:

Image Sensor：OV2732

Pixel：2um×2um

Lens Type：1/4

Important Voltage Description: DVDD1.2V
(external power supply),

2、Lens specification:

FOV：70°(D),58.6°(H),45.3°(V)

F/NO.：2.8

TV distortion：<1.0%

Focal length：3.2mm

Composition：4P

TOP VIEW

18.50±0.20

3.50±0.20

2.50

12.0±0.10

8.00±0.10

8.00±0.10

6.00±0.10

1080

1920

White silk screen line

Φ7.00

Φ5.50

SIDE VIEW

0.86

70°

0.30±0.05

FPC+PI

0.12±0.03

FPC Adhesiveless FCCL, ED

0.20±0.05

Steel Grounding

4.72±0.20

4.12±0.10

2.12±0.10

BOTTOM VIEW

2.50

0.30

0.50

11.50

01

24

7.00±0.05

7.00±0.05

Φ0.55±0.05
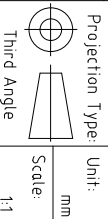
Lens Model: KLT-LENS-M5182

SPECIFICATION

NO	SPECIFICATION		
1. SENSOR SIZE	1/4" (5M COB)		
2. MAX IMAGE CIRCLE	Ø4.85mm		
3. TOTAL TRACK	4.0±0.1mm		
4. EFL	3.2mm		
5. OPTICAL BFL	1.32mm		
6. MECHANICAL BFL	0.96mm		
7. F/NO	2.8±5%		
8. VIEW OF FIELD	VERTICAL	45.3° (Y=1.36)	
	HORIZONTAL	58.6° (Y=1.81)	
	DIAGONAL	70.0° (Y=2.26)	
9. OPTICAL DISTORTION	<1.0%		
10. TV DISTORTION	<1.0%		
11. RELATIVE ILLUMINATION	>42.2%		
12. CONSTRUCTION	4P		
13. CHIEF RAY ANGLE	<25°		
14. CUT FREQUENCY AT 50%	AXIS	330Lp/mm	
	0.7Y	200Lp/mm	
15. THREAD	M5.0X0.35P		
16. IMAGE QUALITY	CENTER	20/10	
	EDGE	40/20	
17. APPERANCE QUALITY (Scratch/Dig)			

NO	MODIFY CONTENT	NAME	DATE
1	花膜99%改为5.5%C/C0.05改为5.5±0(0V-0.1C)	tomin	2016-12-05
2			
3			
4			

ANGLE	DIM		
RANGE			
ANGLE	±0.5°		
X.XXX	±0.010		
X.XX	±0.05		
X.X	±0.1		

UNIT: m m

NOTE:
1. 镜头表面不可有油污、灰尘、毛丝等异物。
2. 镜头配VCM锁附高度为 4.2±0.1mm，扭力为20~120gf.cm。
3. 镜头承受推力为≥2.0kg。
4. 镜头组品质参数需符合图中要求。

SCALE 10 : 1

MATERIAL:

BORDER: A4

DRAWING: NADB — tomin — 2016-12-05

CHECKED BY

APPROVED BY

OPTICAL NO.

REV. A-01

3-75°
3-45°
Ø4.8
Ø4.70
Ø5.0±0.10

73°(MAX)
70°(D)
Ø1.1 +0.00/-0.02
0.8(MAX)
0.86(D)
0.80
4±0.1
1.32
3.05±0.05
0.3
0.95
0.30
IMAGE PLANE
Ø5.50 +0.00/-0.05
M6.0X0.35P

0.5mm and 1mm Pitch Connectors For FPC/FFC

FH12 Series

Flip-lock

www.KaiLapTech.com

www.KaiLapTech.com
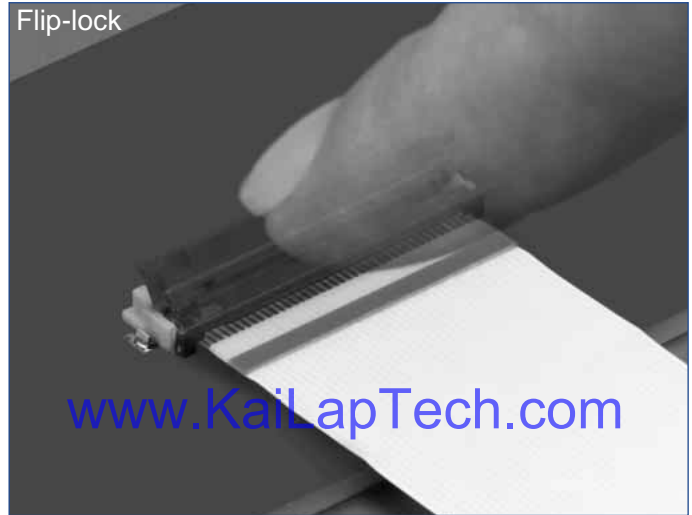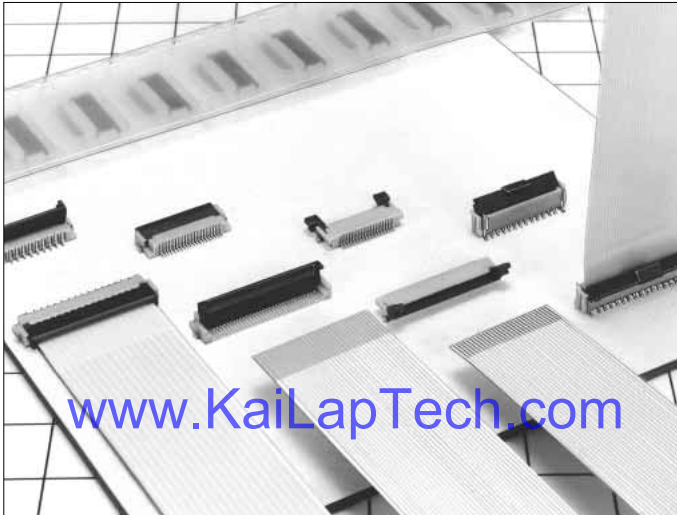
■Features

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.
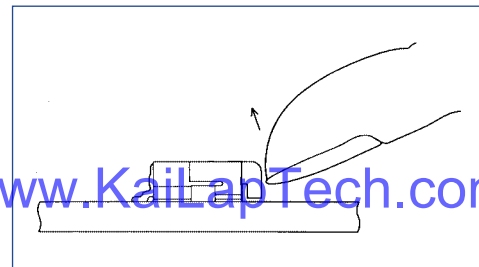
6. Three different assembly types

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).
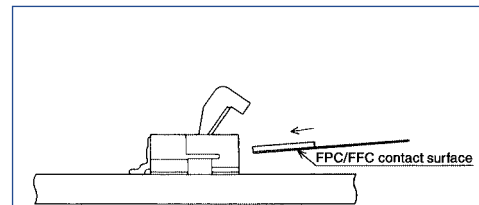
■Applications

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 www.KaiLapTech.com

② FPC/FFC contact surface

www.KaiLapTech.com

③

HRS

The product information in this catalog is for reference only. Please request the Engineering Drawing for the most current and accurate design information.
All non-RoHS products have been discontinued, or will be discontinued soon. Please check the products status on the Hirose website RoHS search at www.hirose-connectors.com, or contact your Hirose sales representative.

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

■Product Specifications

Rating	Current rating: 0.5A DC(Note 1)	Operating Temperature Range:−40 to +70℃ (Note 2)	Storage Temperature Range:−10 to +50℃ (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/s², 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℃ 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℃ → 15 to 35℃ → 85℃ → 15 to 35℃, 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℃ 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
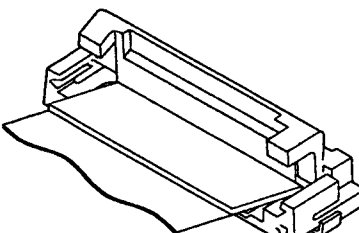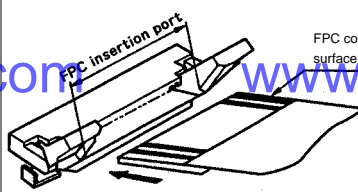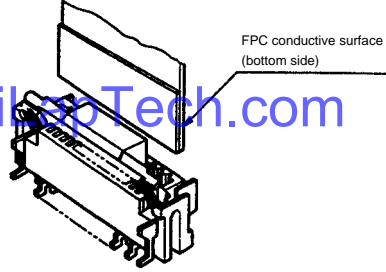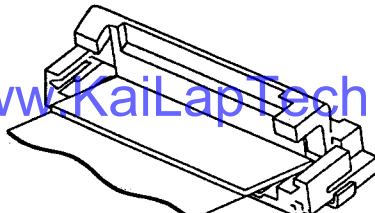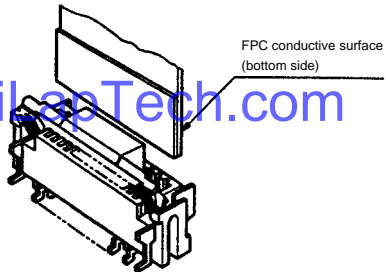
FH12　A - 10 (4) - S A - 0.5 SH (55)
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶ Series Name : FH12	❺ Contact alignment: Single
❷ Blank : standard type A : Top contact type S : Type with strengthed flip-lock actuator F : Type with 0.18mm FPC End Thickness	❻ Eccentric direction: Blank : standard type A : Eccentric type
❸ Standard type : Number of contacts Eccentric type : Number of contacts in 0.5mm housing	❼ Contacts Pitch : 0.5mm, 1mm
❹ Standard type : Blank Eccentric type : Number of contacts	❽ Contact type SH : SMT horizontal mounting type SV : SMT vertical mounting type
	❾ Plating specification (55) : Gold plated

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

◆Series Configuration

Pitch	Bottom Contact Type	Top Contact Type	Vertical mounting Type
0.5mm	**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 Type with Strengthened Lock Lever **FH12S- ∗∗ S-0.5SH** P.13 Number of contacts 30, 40, 45, 50, 53 Type with 0.18mm FPC End Thickness **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	FPC conductive surface **FH12A- ∗∗ S-0.5SH** P.15 Number of contacts 10, 12, 15, 16, 18, 20, 22, 24, 26, 28, 29, 30, 32, 33, 34, 36, 40, 42, 45, 50	FPC conductive surface (bottom side) **FH12- ∗∗ S-0.5SV** P.16 Number of contacts 10, 12, 13, 15, 16, 17, 18, 20, 22, 24, 26, 30, 32, 33, 34, 36, 40, 45, 49, 50, 60
1mm	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		FPC conductive surface (bottom side) **FH12- ∗∗ S-1SV** P.19 Number of contacts 6, 7, 8, 16, 20, 22, 24

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

■0.5mm Pitch Bottom Contact Type

Mated Cross-sectional Diagram

FPC/FFC Contact Surface

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	
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	YES
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

HRS 13
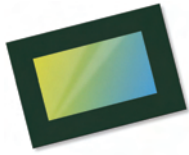
OV2732 1080p product brief

Low-Power 1080p High Definition PureCel® Sensor for Security Applications

lead free

available in a lead-free package

OmniVision's OV2732 is a compact and power-efficient PureCel® image sensor designed for IoT-based residential and commercial monitoring systems. The OV2732 captures quality images and videos with staggered high dynamic range (HDR), ensuring excellent scene reproduction in all lighting environments. The sensor features frame sync for use in multi-camera or 360-degree camera systems and supports ultra-low power mode (ULPM) and an ambient light sensor (ALS), making it particularly well-suited for battery-powered security applications.

Built on OmniVision's PureCel® technology, the 1/4-inch OV2732 captures 1080p high definition (HD) video at 60 frames per second (fps), 720p HD video at 90 fps, and VGA resolution video at 120 fps. The OV2732 delivers crisp images and video, even in challenging low-light conditions.

Find out more at www.ovt.com.

OmniVision®

Applications

- Internet of Things (IoT)
- High-end Video Conferencing
- Security
- Lifestyle Camera
- Home Monitoring

OV2732

Product Features

- programmable controls:
  - gain
  - exposure
  - frame rate
  - image size
  - horizontal mirror
  - vertical flip
  - cropping
  - windowing
- automatic image control functions:
  - black level calibration (BLC)
- serial camera control bus (SCCB)
- defective pixel correction (DPC)
- digital video port (DVP) parallel output interface

- support for two lane MIPI interface (up to 800 Mbps)
- support for image sizes:
  - 1080p @ 60 fps
  - 720p @ 90 fps
  - VGA @ 120 fps
  - QVGA @ 240 fps, and more
- support for light sensing mode (LSM)
- support for staggered 2 frame HDR
- support for black sun cancellation
- on-chip phase lock loop (PLL)

Product Specifications

- **active array size:** 1920 x 1080
- **power supply:**
  - **core:** 1.2V
  - **analog:** 2.8V
  - **I/O:** 1.8V
- **power requirements:**
  - **active:** 110 mW
- **temperature range:**
  - **operating:** -40°C to +85°C junction temperature
  - **stable image:** 0°C to +60°C junction temperature
- **output interfaces:** two-lane MIPI / DVP parallel
- **output formats:** 10/12-bit RAW RGB
- **lens size:** 1/4"
- **lens chief ray angle:** 12° linear

- **input clock frequency:** 6 - 27 MHz
- **scan mode:** progressive
- **maximum image transfer rate:**
  - **1080p:** 60 fps
  - **720p:** 90 fps
  - **VGA:** 120 fps
  - **QVGA:** 240 fps
- **shutter:** rolling shutter
- **maximum exposure interval:** 1184 × t_{ROW}
- **pixel size:** 2 µm x 2 µm
- **image area:** 3868 µm x 2190 µm
- **package dimensions:** 5174 µm x 3680 µm

Functional Block Diagram
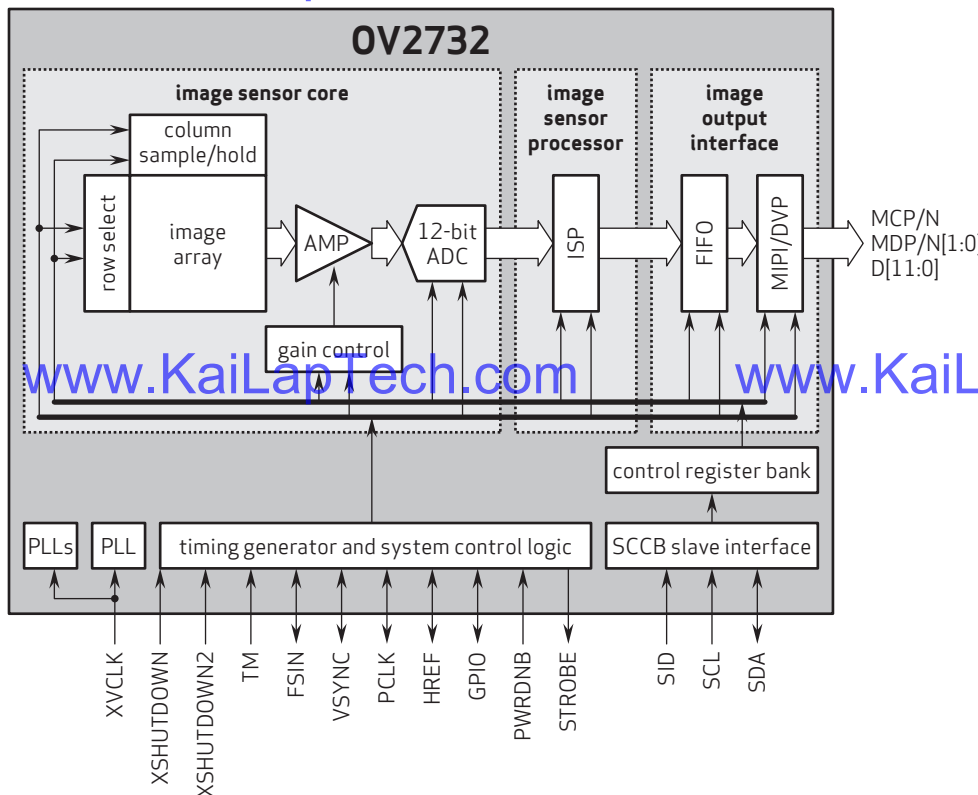
Camera Module Pinout Definition Reference Chart

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

KLT

your BEST camera module partner

Cameras Applications

IMAGING DEVICES

Visible cameras
Blind-spot, side-view (mirrorless cars), accident recorder, rear park assist
Stereo cameras: direction & distance for LDWS & traffic sign recognition

3D cameras
Gesture recognitions presence detection, driver monitoring

Long-range radar
Adaptive Cruise Control

Short-range radar
Front & rear parking

Night vision camera
Pedestrian / animal detection

LIDAR
3D mapping of surroundings

Dead reckoning sensors
Odometry

Ultrasound
Parking, SR pedestrian & obstacle detection

Day

Night

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
	Storage Temperature — Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature — High 60°C 24 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature — 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
	Drop Test (Free Falling) — With Package 60cm	10 Times on Wood Floor	Electrically Functional
	Vibration Test — 50Hz X-Axis 2mm 30min	Vibration Table	Electrically Functional
	Vibration Test — 50Hz Y-Axis 2mm 30min	Vibration Table	Electrically Functional
	Vibration Test — 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
	ESD Test — 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

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

KLT Package Solutions

KLT Camera Module

Complete with Lens Protection Film

Tray with Grid and Space

Place Cameras on the Tray

Camera Modules Package Solution

Full Tray of Cameras

Cover Tray with Lid

Put Tray into Anti-Static Bag

Vacuum the Anti-Static Bag

www.KaiLapTech.com   sales@KaiLapTech.com   Tel: (852) 6908 1256   Fax: (852) 3017 6778

Camera Modules Package Solution

Sealed Vacuum Bag with Labels
1. Model and Description 2. Quantity 3. Shipping Date 4. Caution

KLT-J4K-OV2732 V1.1
OV2732, MIPI & Parallel
Fixed Focus, 67.4 Degree
www.KaiLapTech.com

100
PIECES

Shipping Date
10 August 2017

CAUTION
STATIC SENSITIVE
DEVICES
NOT TO BE HANDLED
BY UNAUTHORISED
PERSONNEL

Large Order Package Solution

Place Foam Sheets Between Trays

Foam Sheets are Slightly Larger than Trays

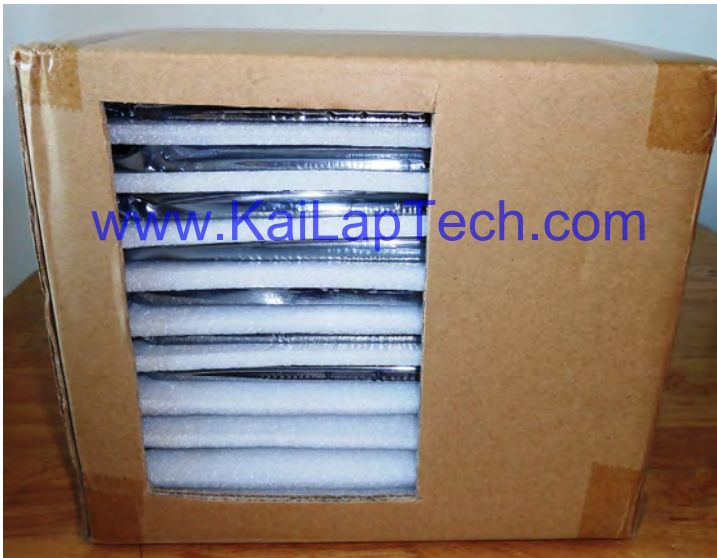www.KaiLapTech.com

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Place Foam Sheets and Trays into Box

Foam Sheets are Tightly Fitting Box

Small Order Package Solution

Place Foam Sheets and Trays into Small Box

Foam Sheets are Nicely Fitting the Small Box

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Package in Small Box for Shipment

Place Small Boxes into Larger Box

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Carbon Box Package Solution

Seal the Carbon Box   Final Package Labelled Box

www.KaiLapTech.com

Carbon Box Ready for Shipment
1. Delivery Address and Phone No. 2. Box No. and Ship Date 3. Fragile Caution

Please deliver to:

Kai Lap Technologies Group Ltd.

Kai Lap Technologies Group Ltd.
64-66A Sha Tsui Road, Tsuen Wan
HONG KONG

Attn: Sharon Chan
Phone: + 852 6908 1256

KLT KLT Camera Modules
www.KaiLapTech.com

PKG:

1 of 1

10 August 2017
MADE IN CHINA

KLT KLT Camera Modules
www.KaiLapTech.com

fragile
HANDLE WITH CARE

Sample Order Package Solution

Place Sample into Small Anti-Static Bag   **Place Connectors into Small Ant-Static Bag**

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Sample Labels on the Small Bag
1. Camera Module or Connector Model 2. Shipping Date and Quantity 3. Caution

www.KaiLapTech.com

www.KaiLapTech.com

KLT-J4K-OV2732 V1.1
OV2732 MIPI & Parallel
Fixed Focus, 67.4 Degree
www.KaiLapTech.com

Shipping Date
10 August 2017

CAUTION
STATIC SENSITIVE
DEVICES
NOT TO BE HANDLED
BY UNAUTHORISED
PERSONNEL

FH12-24S-0.5SH
Mating Connector for
KLT-J4K-OV2732 V1.0
www.KaiLapTech.com

10
PIECES

CAUTION
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PERSONNEL

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Connectors Large Order Package Solution

Connectors in a Wheel

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Label Connectors in the Wheel

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The Wheel is Perfectly Fitting the Box

www.KaiLapTech.com

3000 PIECES

Connectors Box Ready for Shipment

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Company Kai Lap Technologies (KLT)

Kai Lap Technologies Group Limited. (KLT) was established in 2009, a next-generation technology driven manufacturer specialized in research, design, and produce of audio and video products. KLT is occupying 20,000 square feet automated plants with 100 employees of annual throughput 30,000,000 units cameras.

KLT 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. KLT 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

KLT provides the following limited warranty if you purchased the Product(s) directly from KLT company or from KLT's website, www.KaiLapTech.com. Product(s) purchased from other sellers or sources are not covered by this Limited Warranty. KLT 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, KLT 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 KLT is solely limited to repair and/or replacement on the terms set forth above. KLT is not reliable or responsible for any subsequential events.

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KLT Strength

Powerful Factory

Professional Service

Promised Delivery