KLT-W4MF-OV5640 V1.0 NIR

5MP OmniVision OV5640 Interfaz MIPI Sin filtro de infrarrojos Foco fijo Modulo de camara



Vista frontal



Vista trasera

Especificaciones

Módulo de cámara No.	**KLT-W4MF-OV5640 V1.0 NIR**
Resolución	5MP
Sensor de imagen	OV5640
Tipo de sensor	1/4"
Tamaño de píxel	1.4 um x 1.4 um
EFL	2.34 mm
F.NO	2.40
Pixel	2592 x 1944
Ángulo de visión	87.9°(DFOV) 75.3°(HFOV) 59.8°(VFOV)
Dimensiones de la lente	8.50 x 8.50 x 4.12 mm
Tamaño del módulo	73.30 x 48.10 mm
Module Type	Foco fijo
Interfaz	MIPI
Controlador IC AF VCM	Incorporado
Modelo de lente	KLT-LENS-40103A1
Tipo de lente	Sin lente de filtro IR
Temperatura de funcionamiento	-30°C to +70°C
Conector de acoplamiento	AXK740147G

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

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CMOS CAMERA MODULES

your BEST camera module partner

KLT-W4MF-OV5640 V1.0 NIR

5MP OmniVision OV5640 Interfaz MIPI Sin filtro de infrarrojos Foco fijo Modulo de camara



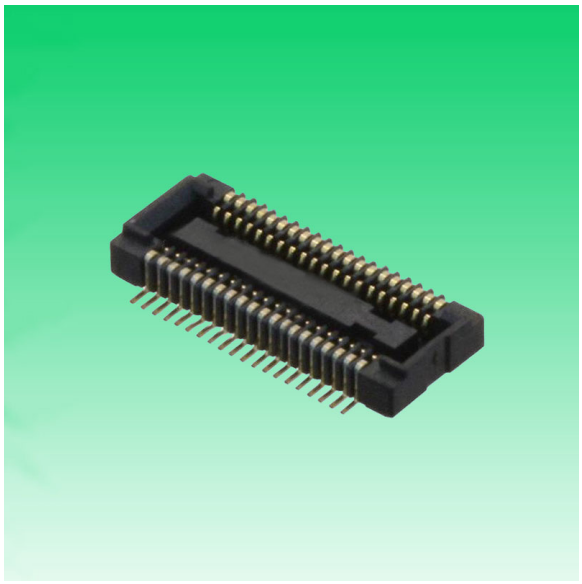
Vista superior



Vista lateral



Vista inferior



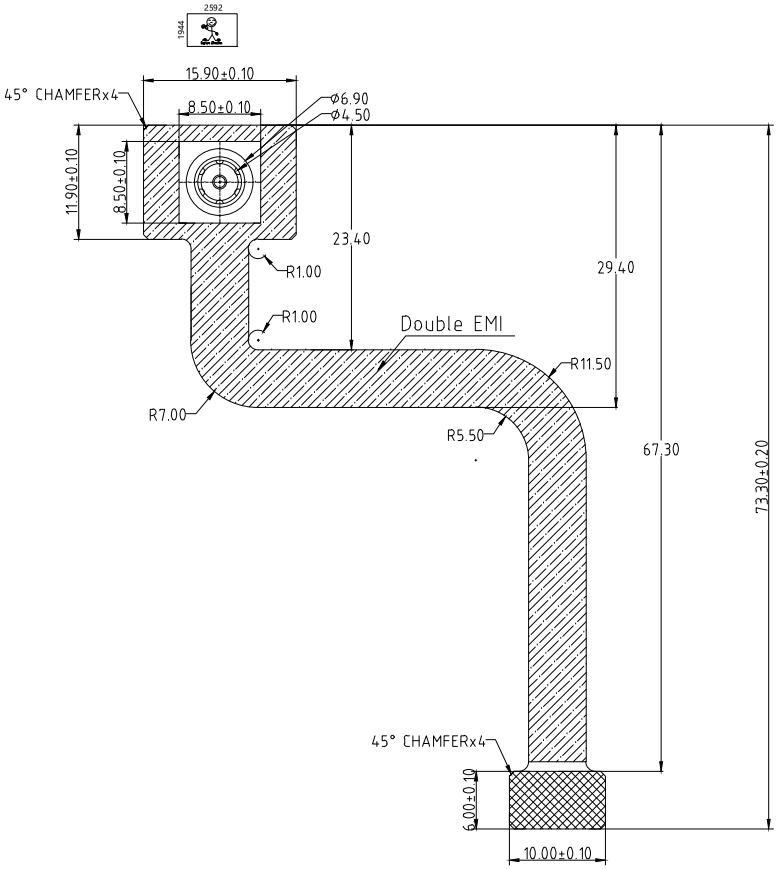
Conector de acoplamiento

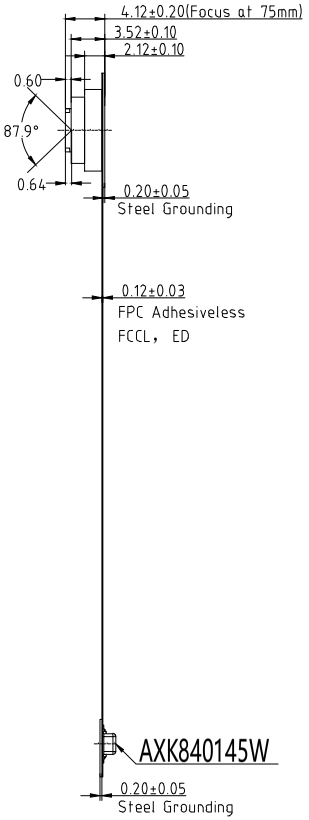
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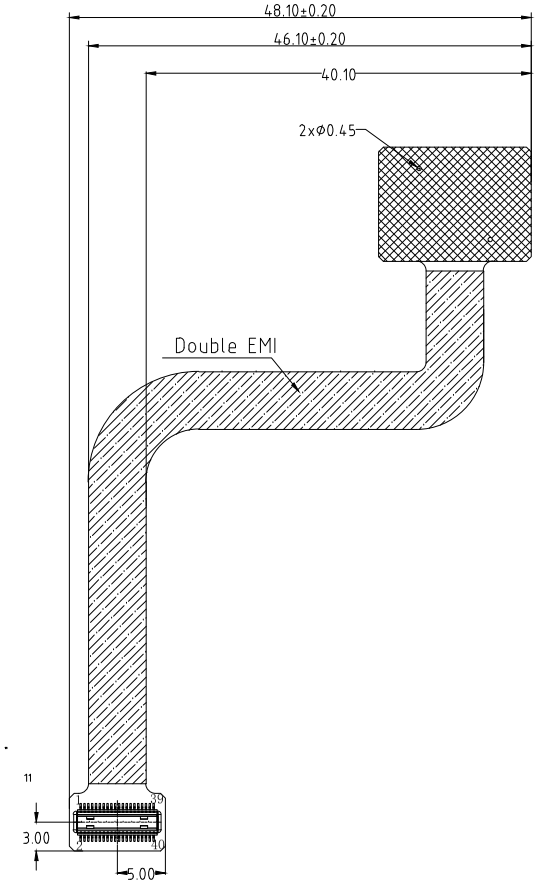
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RoHS	
PIN	SIGNAL
1	GND
2	GND
3	MCP
4	NC
5	MCN
6	NC
7	GND
8	NC
9	MDP0
10	NC
11	MDN0
12	1V8/DOVDD
13	GND
14	1V8/DOVDD
15	MDP1
16	NC
17	MDN1
18	NC
19	GND
20	GND
21	SIOD
22	NC
23	SIOC
24	GND
25	GND
26	PWDN
27	XCLK
28	RESET
29	GND
30	NC
31	NC
32	GND
33	GND
34	NC
35	1V5/DVDD
36	GND
37	1V5/DVDD
38	2V8/AVDD
39	1V5/DVDD
40	2V8/AVDD

Version	Information	Date
V1.0	First Version	12-12-2020







Parameter:

1、Sensor specification:

Image Sensor: OV5640

Pixel: 1.4um×1.4um

Lens Type: 1/4

Important Voltage Description: DVDD1.5V (external power supply);

2、Lens specification:

FOV: 87.9°(D);75.3°(H);59.8°(V)

F/NO.: 2.4

TV distortion: <1.5%

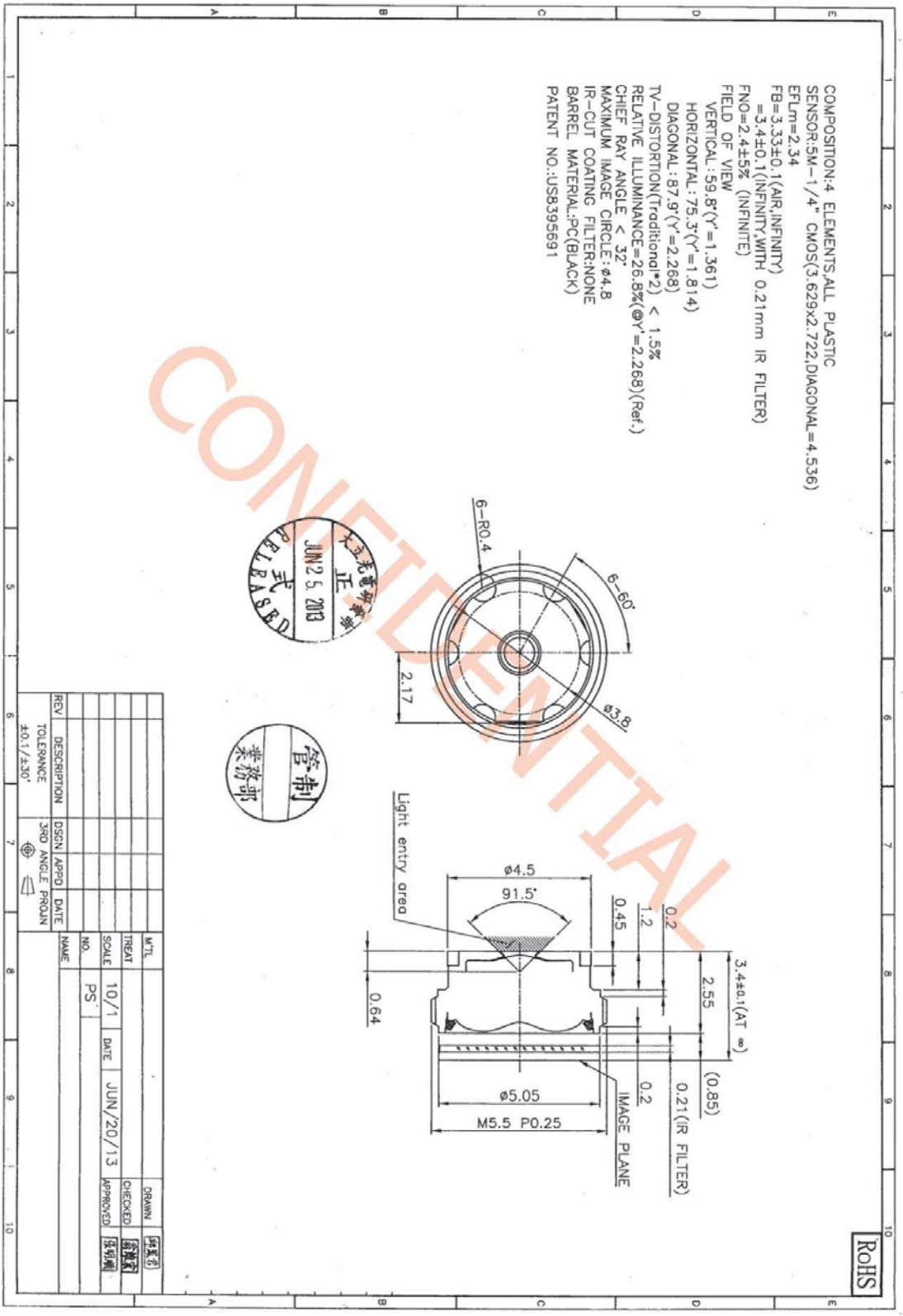
Focal length: 2.34mm

Composition: 4P

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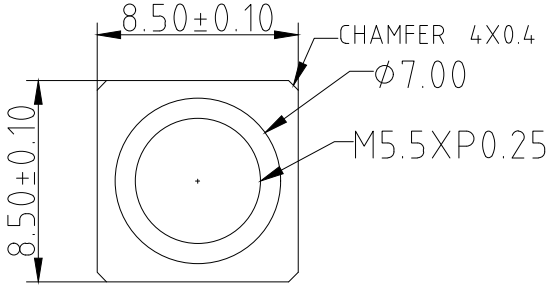
Designed By	Kevin	Model Name:	KLT-W4MF-OV5640 V1.0 NIR
Checked By	Aouly_Yan	Projection Type: Third Angle	Unit: mm / Material: ---------- / Scale: 1:1 / Sheet: 1 of 1 / Version: 1/0

Lens Model: KLT-LENS-40103A1

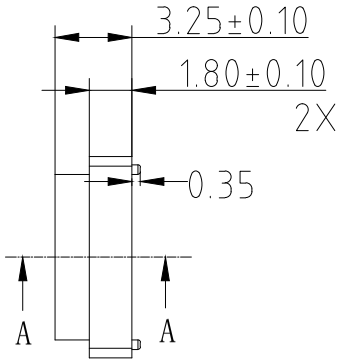


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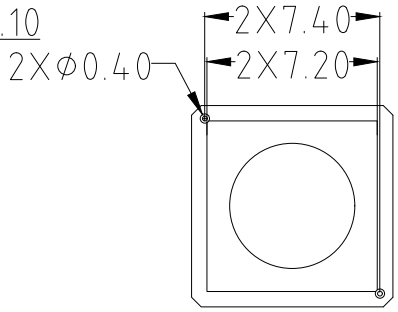
Version	Information	Date
V1.0	First Version	1-10-2022



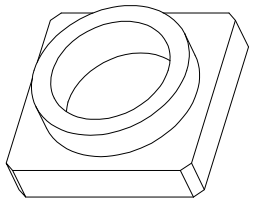
TOP VIEW

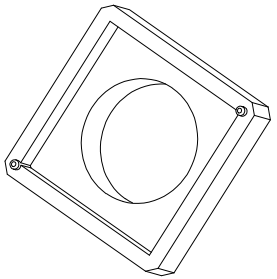


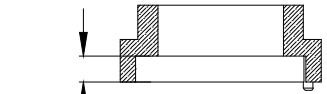
SIDE VIEW



BOTTOM VIEW







SECTION A-A

Kai Lap Technologies Group Ltd					
Designed By	Kevin	Model Name:	KLT-PKNZ3858B		
Checked By	Aouly_Yan	Projection Type: Third Angle	Unit: mm	Material: ----------	
			Scale: 1:1	Sheet: 1 of 1	Version: 1/0

Panasonic
ideas for life

NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD AND BOARD-TO-FPC CONNECTION

NARROW PITCH (0.4mm) CONNECTORS P4 SERIES

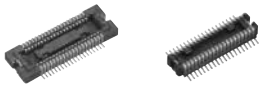


• Without retention fitting



Socket Header

• With retention fitting

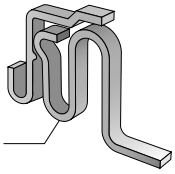


Socket Header

FEATURES

1. 0.4 mm pitch and support for mated heights of up to 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, 3.5 mm, and 4.0 mm.
2. Strong resistance to adverse environments! Utilizes *TOUGH CONTACT* construction for high contact reliability.
1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.

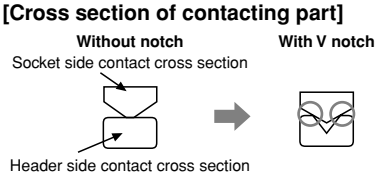
Contacts are formed by bending a thin metal sheet, which provides the contact parts with adequate spring characteristics ensuring greater resistance to prying forces and drop impacts.



2) V notch construction used for excellent resistance against foreign matters.

● What is V notch construction?
By using the edge for the contacting part and increasing contact pressure per unit area, the effectiveness in removing flux and contaminants is increased compared to its predecessor. This is also effective in preventing the trapping of contaminants.

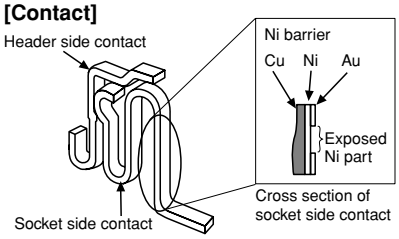
[Cross section of contacting part]



3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

● What is Ni barrier construction?
By providing an exposed nickel part on the gold (Au) plated contact, solder creeping is prevented despite the ultra low profile.

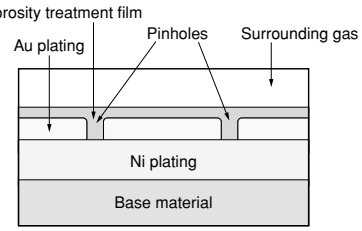
[Contact]



Note: Construction makes solder creeping difficult because header side is formed at the same time.

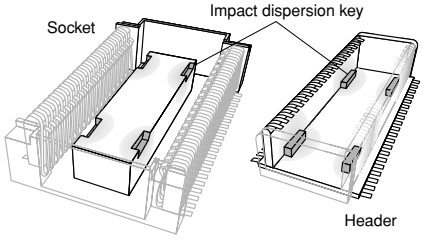
4) Porosity treatment applied for improved resistance against corrosion.

What is porosity treatment?
This treatment consists of coating the surface with a very thin film to seal pinholes in the gold plating. This porosity treatment technology ensures the same contact reliability for thin gold plating as that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

3. It is constructed with impact dispersion keys inside the body to disperse shocks when dropped.

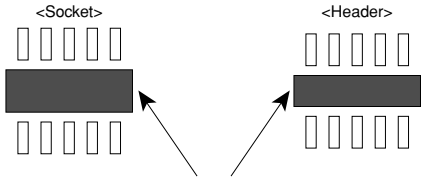


A high level of shock resistance is ensured by dispersing impact over the four locations where the socket indentations and header protrusions are mated together.

Note: The following numbers of contacts are not supported due to suction surface factors.

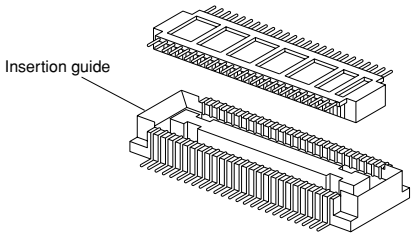
• Without retention fitting: 18 contacts or less
• With retention fitting: 22 contacts or less

4. Construction makes designing devices easier.
1) The lower connector bottom surface construction prevents contact and shorts between the PCB and metal terminals. This enables freedom in pattern wiring, helping to make PCB's smaller.

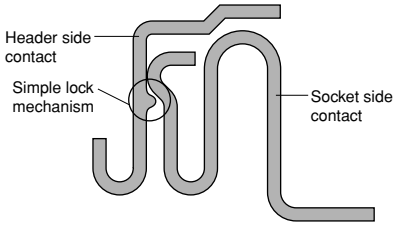


Connector bottom: Create any thru-hole and pattern wiring.

2) Guides are provided to take up any position shift and facilitate insertion.



3) The connector has a simple lock mechanism.
Superior mated operation with click feel to indicate that mated is complete.



5. Design makes efficient mounting.
Features a terminal flatness of 0.08 mm, construction resistant to creeping flux, and design that facilitates visual inspection of the soldered part.
6. Compliance with RoHS Directive
Environmentally friendly, the connectors comply with Europe's RoHS Directive. Cadmium, lead, mercury, hexavalent chromium, PBB and PBDE are not used.
7. Connectors for inspection available
Connectors for inspection are available that are ideal for modular unit inspection and inspection in device assembly processes.

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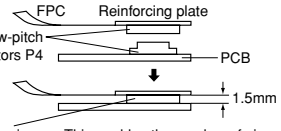
APPLICATIONS

Compact portable devices “Cellular phones, DVC, Digital cameras, etc”

Ideal for Board-to-FPC connections

Before mating

After mating



The simple lock mechanism ensures that the connector clicks into position when it is inserted for reliable single-action insertion on the PCB.

This enables the number of pins to be doubled while the size remains the same as that for existing FPC connectors. This, in turn, contributes to making products and equipment more compact.

TABLE OF PRODUCT TYPES

P4 (0.4 mm pitch): Without retention fitting


Socket


Header

☆: Available for sale

Number of contacts	Mated height 1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm
14	☆	☆	☆			
16	☆					
20	☆	☆	☆			
22	☆					
24	☆	☆	☆			
26	☆	☆				
28	☆					
30	☆	☆	☆			
34	☆	☆				
36	☆					
40	☆	☆	☆			
44	☆		☆			
50	☆	☆	☆			
54	☆					
60	☆		☆			
64	☆					
70	☆	☆	☆			
80	☆	☆				
90	☆		☆			
100	☆	☆	☆			

P4 (0.4 mm pitch): With retention fitting


Socket


Header

☆: Available for sale

Number of contacts	Mated height 1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm
10	☆					
12	☆					
20			☆	☆	☆	
22	☆					
24		☆				
28	☆					
30	☆					
32			☆			
34	☆					☆
40	☆		☆	☆		
44	☆					
46	☆					
50	☆		☆	☆	☆	☆
60	☆		☆	☆	☆	
80	☆	☆	☆	☆	☆	☆
90	☆		☆	☆		
100	☆					

Note: Please contact us regarding numbers of contacts other than those given above.

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ORDERING INFORMATION

AXK □ □□ □ □ □ □ □

7: Narrow Pitch Connector P4 (0.4 mm pitch) Socket
8: Narrow Pitch Connector P4 (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height
<Socket>
1: For mated height 1.5 mm
2: For mated height 2.0 mm
3: For mated height 2.5 mm and 3.0 mm
4: For mated height 3.5 mm
5: For mated height 4.0 mm
<Header>
1: For mated height 1.5 mm, 2.0 mm and 2.5 mm
2: For mated height 3.0 mm, 3.5 mm and 4.0 mm

Functions
1: With retention fitting, with positioning bosses
2: With retention fitting, without positioning bosses
3: Without retention fitting, with positioning bosses
4: Without retention fitting, without positioning bosses

Surface treatment (Contact portion / Terminal portion)
<Socket>
5: Ni plating on base, Au plating on surface
7: Ni plating on base, Au plating on surface (for Ni barrier product available)
<Header>
5: Ni plating on base, Au plating on surface

Other specifications
<Header>
Y: V notch type product
W: V notch and post edge horseshoe bend type product Note*

Packing
G: 3,000 pieces embossed tape and plastic reel × 2*

Note:
The post edge horseshoe bend indicated by the “W” in the tenth digit of the header part number refers to a construction that makes it difficult for the header post edge to deform when the connector is inserted and removed at an angle.

* Only a socket of mated height 3.5 mm and 4.0 mm: 2,000 pieces embossed tape and plastic reel × 2.

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PRODUCT TYPES

1. Without retention fitting TOUGH CONTACT

Mated height	Number of contacts	Part number			Packing	
		Socket	Header		Inner carton	Outer carton
		TOUGH CONTACT	TOUGH CONTACT	TOUGH CONTACT and Post edge horseshoe bend type (Recommendation)		
1.5 mm	14	AXK714147G	AXK814145YG	AXK814145WG	3,000 pieces	6,000 pieces
	16	AXK716147G	AXK816145YG	AXK816145WG		
	20	AXK720147G	AXK820145YG	AXK820145WG		
	22	AXK722147G	AXK822145YG	AXK822145WG		
	24	AXK724147G	AXK824145YG	AXK824145WG		
	26	AXK726147G	AXK826145YG	AXK826145WG		
	28	AXK728147G	AXK828145YG	AXK828145WG		
	30	AXK730147G	AXK830145YG	AXK830145WG		
	34	AXK734147G	AXK834145YG	AXK834145WG		
	36	AXK736147G	AXK836145YG	AXK836145WG		
	40	AXK740147G	AXK840145YG	AXK840145WG		
	44	AXK744147G	AXK844145YG	AXK844145WG		
	50	AXK750147G	AXK850145YG	AXK850145WG		
	54	AXK754147G	AXK854145YG	AXK854145WG		
	60	AXK760147G	AXK860145YG	AXK860145WG		
	64	AXK764147G	AXK864145YG	AXK864145WG		
	70	AXK770147G	AXK870145YG	AXK870145WG		
	80	AXK780147G	AXK880145YG	AXK880145WG		
	90	AXK790147G	AXK890145YG	AXK890145WG		
	100	AXK700147G	AXK800145YG	AXK800145WG		
2.0 mm	14	AXK714247G	AXK814145YG	AXK814145WG	3,000 pieces	6,000 pieces
	20	AXK720247G	AXK820145YG	AXK820145WG		
	24	AXK724247G	AXK824145YG	AXK824145WG		
	26	AXK726247G	AXK826145YG	AXK826145WG		
	30	AXK730247G	AXK830145YG	AXK830145WG		
	34	AXK734247G	AXK834145YG	AXK834145WG		
	40	AXK740247G	AXK840145YG	AXK840145WG		
	50	AXK750247G	AXK850145YG	AXK850145WG		
	70	AXK770247G	AXK870145YG	AXK870145WG		
	80	AXK780247G	AXK880145YG	AXK880145WG		
	100	AXK700247G	AXK800145YG	AXK800145WG		
2.5 mm	14	AXK714347G	AXK814145YG	AXK814145WG	3,000 pieces	6,000 pieces
	20	AXK720347G	AXK820145YG	AXK820145WG		
	24	AXK724347G	AXK824145YG	AXK824145WG		
	30	AXK730347G	AXK830145YG	AXK830145WG		
	40	AXK740347G	AXK840145YG	AXK840145WG		
	44	AXK744347G	AXK844145YG	AXK844145WG		
	50	AXK750347G	AXK850145YG	AXK850145WG		
	60	AXK760347G	AXK860145YG	AXK860145WG		
	70	AXK770347G	AXK870145YG	AXK870145WG		
	90	AXK790347G	AXK890145YG	AXK890145WG		
	100	AXK700347G	AXK800145YG	AXK800145WG		

Notes: 1. Regarding ordering units; During production: Please make orders in 1-reel units.
Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See “Regarding sample orders to confirm proper mounting” on page 13.)
Samples: Small lot orders are possible.
2. The standard type comes without positioning bosses. Connectors with positioning bosses are available on-demand production. For this type of connector, 8th digit of the part number changes from 4 to 3. e.g. Mated height 1.5 mm and 20 contacts for socket without retention fitting: AXK720137G
3. The 10th digit “Y” in the header part number indicates the connector has V notch. (For details, please refer to page 36.)
“W” indicates a product with V notch and post edge horseshoe bend. (“Post edge horseshoe bend” refers to a construction that makes it difficult for the header post edge to deform when the connector is inserted and removed at an angle.)
“Products with V notch” and “products with V notch and post edge horseshoe bend” are mating compatible.
4. Connectors of different mated height (3.0 mm, 3.5 mm and 4.0 mm) and different number of contacts are available on-demand production only. Please contact us for more details.

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SPECIFICATIONS

1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	0.3A/contact (Max. 5 A at total contacts)	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 70mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Composite insertion force	Max. 0.981N {100gf}/contacts × contacts (initial)	
	Composite removal force	Min. 0.0588N {6gf}/contacts × contacts (Mated height 1.5 mm, without removal and retention fitting) Min. 0.118N {12gf}/contacts × contacts (Mated height 1.5 mm, except without removal and retention fitting)	
	Post holding force	Min. 0.981N {100gf}/contacts	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	–55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 245°C	Infrared reflow soldering
		300°C within 5 sec. 350°C within 3 sec.	Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 70mΩ	Sequence 1. –55 $^{0}_{-3}$°C, 30 minutes 2. ~ , Max. 5 minutes 3. 85 $^{+3}_{0}$°C, 30 minutes 4. ~ , Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 70mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 70mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H_2S resistance (header and socket mated)	48 hours, contact resistance max. 70mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		Mated height 1.5mm, 20 contacts; Socket: 0.04g Header: 0.02g	

2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0), Black	—
Contact and Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) However, upper terminal of Ni barrier production: Exposed over Ni The area adjacent to the terminal of the sockets on models with Ni barrier is exposed to Ni on base.
Retention fitting portion	Copper alloy	Ni plating on base, Sn plating on surface (Except for front terminal)

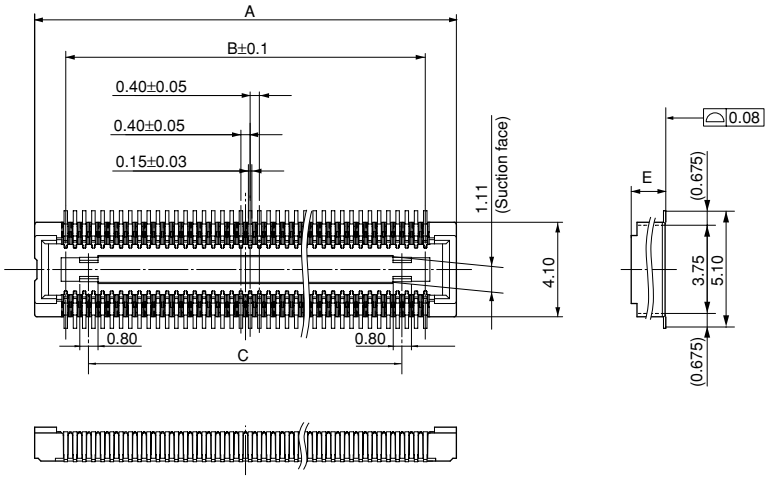
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DIMENSIONS (mm)

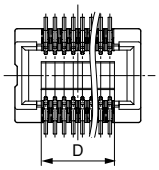
1. Without Retention Fitting

Socket (Mated height: 1.5 mm, 2.0 mm, and 2.5 mm)





Max. 18 contacts



General tolerance: ±0.2

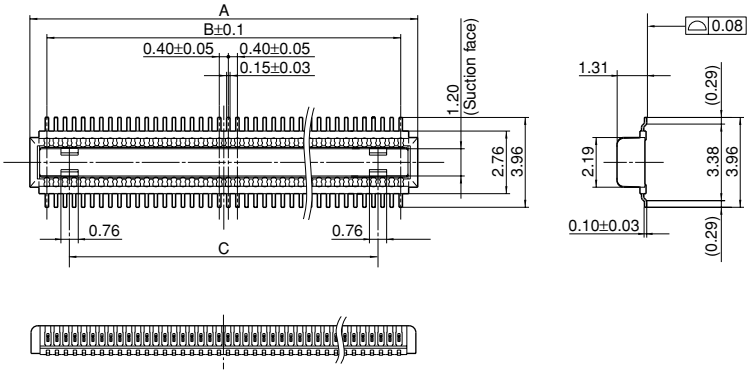
Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
14	5.1	2.4	—	2.8
16	5.5	2.8	—	3.2
20	6.3	3.6	1.6	—
22	6.7	4.0	2.0	—
24	7.1	4.4	2.4	—
26	7.5	4.8	2.8	—
28	7.9	5.2	3.2	—
30	8.3	5.6	3.6	—
34	9.1	6.4	4.4	—
36	9.5	6.8	4.8	—
40	10.3	7.6	5.6	—
44	11.1	8.4	6.4	—
50	12.3	9.6	7.6	—
54	13.1	10.4	8.4	—
60	14.3	11.6	9.6	—
64	15.1	12.4	10.4	—
70	16.3	13.6	11.6	—
80	18.3	15.6	13.6	—
90	20.3	17.6	15.6	—
100	22.3	19.6	17.6	—

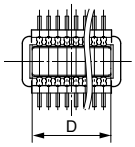
Mated height/dimension	E
1.5mm	1.50
2.0mm	1.92
2.5mm	2.42

Header (Mated height: 1.5 mm, 2.0 mm, and 2.5 mm “products with V notch”)





Max. 18 contacts



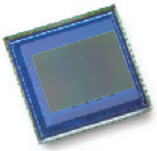
General tolerance: ±0.2

Dimension table (mm)

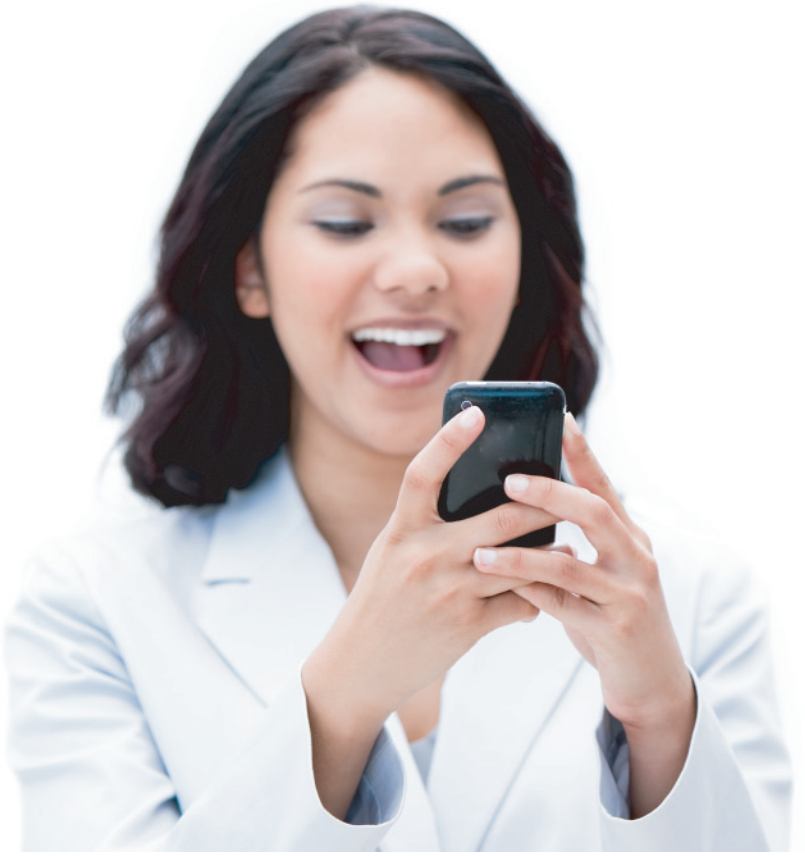
Number of contacts/ dimension	A	B	C	D
14	3.9	2.4	—	3.04
16	4.3	2.8	—	3.44
20	5.1	3.6	1.6	—
22	5.5	4.0	2.0	—
24	5.9	4.4	2.4	—
26	6.3	4.8	2.8	—
28	6.7	5.2	3.2	—
30	7.1	5.6	3.6	—
34	7.9	6.4	4.4	—
36	8.3	6.8	4.8	—
40	9.1	7.6	5.6	—
44	9.9	8.4	6.4	—
50	11.1	9.6	7.6	—
54	11.9	10.4	8.4	—
60	13.1	11.6	9.6	—
64	13.9	12.4	10.4	—
70	15.1	13.6	11.6	—
80	17.1	15.6	13.6	—
90	19.1	17.6	15.6	—
100	21.1	19.6	17.6	—

Note: “Products with V notch” and “products with V notch and post edge horseshoe bend” are mating compatible.

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OV5640 5-megapixel product brief



1/4-inch, 5-Megapixel SOC Image Sensor Optimized for High-Volume Mobile Markets

lead free

available in a lead-free package

The OV5640 delivers a complete 5-megapixel camera solution on a single chip, aimed at offering cost efficiencies that serve the high-volume autofocus (AF) camera phone market. The system-on-a-chip (SOC) sensor features OmniVision's 1.4 micron OmniBSI™ backside illumination architecture to deliver excellent pixel performance and best-in-class low-light sensitivity, while enabling ultra compact camera module designs of 8.5 mm x 8.5 mm with <6 mm z-height. The OV5640 provides the full functionality of a complete camera, including anti-shake technology, AF control, and MIPI while being easier to tune then two-chip solutions, making it an ideal choice in terms of cost, time-to-market and ease of platform integration.

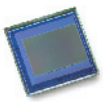
The OV5640 enables 720p HD video at 60 frames per second (fps) and 1080p HD video at 30 fps with complete user control over formatting and output data transfer. The 720p/60 HD video is captured in full field of view (FOV) with 2 x 2 binning, which doubles the sensitivity and improves the signal-to-noise ratio (SNR). Additionally, a unique post-binning re-sampling filter function removes zigzag artifacts around slant edges and minimizes spatial artifacts to deliver even sharper, crisper color images. To further improve camera performance and user experience, the OV5640 features an internal anti-shake engine for image stabilization, and it supports Scalado™ tagging for faster image preview and zoom.

The OV5640 offers a digital video port (DVP) parallel interface and a high-speed dual lane MIPI interface, supporting multiple output formats. An integrated JPEG compression engine simplifies data transfer for bandwidth-limited interfaces. The sensor's automatic image control functions include automatic exposure control (AEC), automatic white balance (AWB), automatic band filter (ABF), 50/60 Hz automatic luminance detection, and automatic black level calibration (ABLC). The OV5640 delivers programmable controls for frame rate, AEC/AGC 16-zone size/position/weight control, mirror and flip, cropping, windowing, and panning. It also offers color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling, and noise canceling to improve image quality.

Find out more at www.ovt.com.

OmniVision

OV5640



Applications

- Mobile Phones
- Digital Still and Video Cameras
- Entertainment

Product Features

- 1.4 µm x 1.4 µm pixel with OmniBSI technology for high performance (high sensitivity, low crosstalk, low noise, improved quantum efficiency)
- optical size of 1/4"
- automatic image control functions:
  - automatic exposure control (AEC)
  - automatic white balance (AWB)
  - automatic band filter (ABF)
  - automatic 50/60 Hz luminance detection
  - automatic black level calibration (ABLC)
- programmable controls for frame rate, AEC/AGC 16-zone size/position/ weight control, mirror and flip, cropping, windowing, and panning
- image quality controls: color saturation, hue, gamma, sharpness (edge enhancement), lens correction, defective pixel canceling, and noise canceling
- support for output formats: RAW RGB, RGB565/555/444, CCIR656, YUV422/420, YCbCr422, and compression
- support for LED and flash strobe mode
- support for internal and external frame synchronization for frame exposure mode
- support horizontal binning and vertical sub-sampling
- support horizontal binning and vertical sub-sampling
- post binning resampling filter to minimize spatial/aliasing artifacts on 2x2 binned image
- embedded JPEG compression
- support for anti-shake
- digital video port (DVP) parallel output interface and dual lane MIPI output interface
- embedded 1.5V regulator for core power
- programmable I/O drive capability, I/O tri-state configurability
- support for black sun cancellation
- embedded arbitrary scalar supporting any size from 5 MP and below
- auto focus control (AFC) with embedded AF VCM driver
- embedded microcontroller
- suitable for module size of 8.5 x 8.5 x <6mm with both CSP and RW packaging

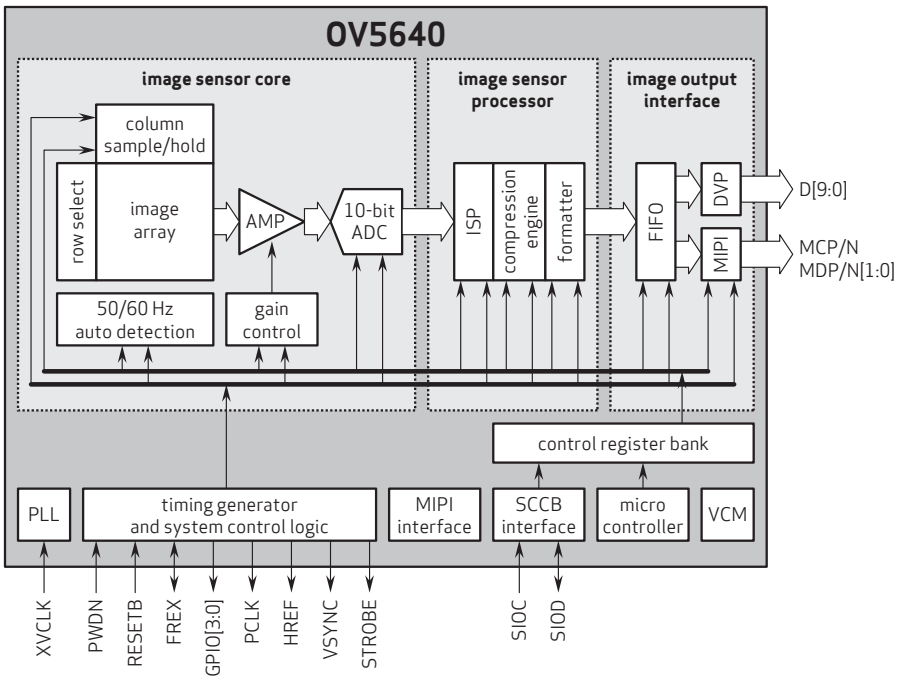
Ordering Information

- **OV05640-A71A**
  (color, lead-free, 71-pin CSP3)
- **OV05640-G04A**
  (color, chip probing, 200 µm backgrinding, reconstructed wafer)

Product Specifications

- **active array size:** 2592 x 1944
- **power supply:**
  - **core:** 1.5 V ±5%
    (with embedded 1.5 V regulator)
  - **analog:** 2.6 - 3.0 V (2.8 V typical)
  - **I/O:** 1.8 V / 2.8 V
- **power requirements:**
  - **active:** 140 mA
  - **standby:** 20 µA
- **temperature range:**
  - **operating:** -30°C to 70°C junction temperature
  - **stable image:** 0°C to 50°C junction temperature
- **output formats:** 8/10-bit RAW RGB output
- **lens size:** 1/4"
- **lens chief ray angle:** 24°
- **input clock frequency:** 6 - 27 MHz
- **shutter:** rolling shutter / frame exposure
- **maximum image transfer rate:**
  - **QSXGA (2592x1944):** 15 fps
  - **1080p:** 30 fps
  - **1280 x 960:** 45 fps
  - **720p:** 60 fps
  - **VGA (640x480):** 90 fps
  - **QVGA (320x240):** 120 fps
- **sensitivity:** 600 mV/lux-sec
- **maximum exposure interval:** 1964 x t_{ROW}
- **max S/N ratio:** 36 dB
- **dynamic range:** 68 dB @ 8x gain
- **pixel size:** 1.4 µm x 1.4 µm
- **dark current:** 8 mV/sec @ 60°C junction temperature
- **image area:** 3673.6 µm x 2738.4 µm
- **package dimensions:**
  - **CSP3:** 5985 µm x 5835 µm
  - **COB:** 6000 µm x 5850 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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Version 1.2, February, 2011

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Aplicaciones de cámaras



Piloto de conductor automotriz



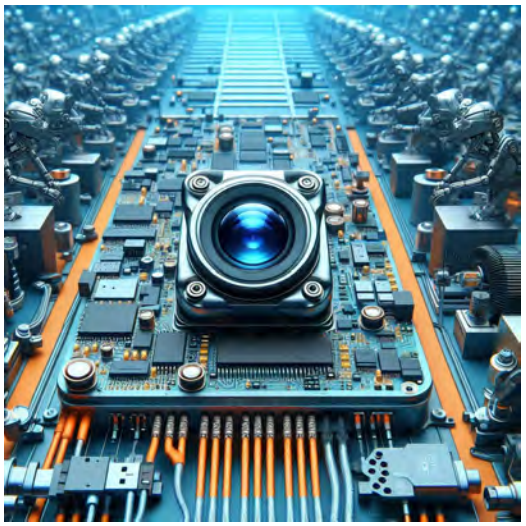
Transmisión en vivo



Video conferencia



Detección biométrica de seguimiento ocular



Visión de máquina



Monitor Agrícola



Seguridad de visión nocturna



Drones y Deportes Eagle Eyes



Cámara interactiva para mascotas

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Aplicaciones de cámaras



















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Cuadro de referencia de definición de pines del módulo de cámara

OmniVision Sony Himax Samsung On-Semi Aptina Himax GalaxyCore PixArt Sensores de imagen	
Señal de clavija	**Descripción**
DGND GND	tierra para circuito digital
AGND	tierra para circuito analógico
PCLK DCK	Salida DVP PCLK
XCLR PWDN XSHUTDOWN STANDBY	Apagado activo alto con resistencia desplegable interna.
MCLK XVCLK XCLK INCK	reloj de entrada del sistema
RESET RST	restablecer activo bajo con resistencia pull-up interna
NC NULL	no conecta
SDA SIO_D SIOD	datos SCCB
SCL SIO_C SOIC	Reloj de entrada SCCB
VSYNC XVS FSYNC	Salida DVP VSYNC
HREF XHS	Salida DVP HREF
DOVDD	alimentación para circuito de E/S
AFVDD	alimentación para el circuito VCM
AVDD	alimentación para circuito analógico
DVDD	potencia para circuito digital
STROBE FSTROBE	salida estroboscópica
FSIN	sincronizar la señal VSYNC del otro sensor
SID	Entrada de ID del último bit de SCCB
ILPWM	indicador de salida de persiana mecánica
FREX	exposición de marco / obturador mecánico
GPIO	insumos de propósito general
SLASEL	Selección de dirección esclava I2C
AFEN	El chip CEN habilita el nivel alto activo en el controlador IC VCM
Salida positiva del reloj MIPI	
MDN0 DN0 MD0N DATA_N DMO1N	Salida negativa del primer carril de datos MIPI
MDP0 DP0 MD0P DATA_P DMO1P	Salida positiva del primer carril de datos MIPI
MDN1 DN1 MD1N DATA2_N DMO2N	Salida negativa del segundo carril de datos MIPI
MDP1 DP1 MD1P DATA2_P DMO2P	Salida positiva del segundo carril de datos MIPI
MDN2 DN2 MD2N DATA3_N DMO3N	Salida negativa del tercer carril de datos MIPI
MDP2 DP2 MD2P DATA3_P DMO3P	Salida positiva del tercer carril de datos MIPI
MDN3 DN3 MD3N DATA4_N DMO4N	Salida negativa del cuarto carril de datos MIPI
MDP3 DP3 MD3P DATA4_P DMO4P	Salida positiva del cuarto carril de datos MIPI
MCN CLKN CLK_N DCKN	Salida negativa del reloj MIPI
MCP CLKP MCP CLK_P DCKN	Salida positiva del reloj MIPI
Interfaz paralela DVP	
D0 DO0 Y0	Puerto de salida de datos DVP 0
D1 DO1 Y1	Puerto de salida de datos DVP 1
D2 DO2 Y2	Puerto de salida de datos DVP 2
D3 DO3 Y3	Puerto de salida de datos DVP 3
D4 DO4 Y4	Puerto de salida de datos DVP 4
D5 DO5 Y5	Puerto de salida de datos DVP 5
D6 DO6 Y6	Puerto de salida de datos DVP 6
D7 DO7 Y7	Puerto de salida de datos DVP 7
D8 DO8 Y8	Puerto de salida de datos DVP 8
D9 DO9 Y9	Puerto de salida de datos DVP 9
D10 DO10 Y10	Puerto de salida de datos DVP 10
D11 DO11 Y11	Puerto de salida de datos DVP 11

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Prueba de confiabilidad de la cámara

Artículo de inspección de confiabilidad			Método de prueba	Método de prueba
Categoría		Artículo		
Ambiental	Almacenamiento Temperatura"	Alto 60°C 96 horas	Cámara de temperatura	Ninguna situación anormal
		Mínimo -20°C 96 horas	Cámara de temperatura	Ninguna situación anormal
	Operación Temperatura	Máxima 60°C 24 horas	Cámara de temperatura	Ninguna situación anormal
		Bajo -20°C las 24 horas	Cámara de temperatura	Ninguna situación anormal
	Humedad	60°C 80% 24 Horas	Cámara de temperatura	Ninguna situación anormal
	Choque termal	Máxima 60°C 0,5 horas Mínimo -20°C 0,5 horas Ciclismo en 24 horas	Cámara de temperatura	Ninguna situación anormal
Físico	Prueba de caída (Caída libre)	Sin paquete 60cm	10 veces sobre piso de madera	Eléctricamente funcional
		Con paquete 60cm	10 veces sobre piso de madera	Eléctricamente funcional
	Test de vibración	50 Hz Eje X 2 mm 30 min	Mesa de vibración	Eléctricamente funcional
		50 Hz Eje Y 2 mm 30 min	Mesa de vibración	Eléctricamente funcional
		50 Hz Eje Z 2 mm 30 min	Mesa de vibración	Eléctricamente funcional
	Cable de tracción Prueba de fuerza	Peso de carga 4 kg 60 segundos Ciclismo en 24 horas	Máquina de prueba de tracción	Eléctricamente funcional
Eléctrico	Prueba ESD	Contacto Descarga 2 KV	Máquina de prueba ESD	Eléctricamente funcional
		Descarga de aire 4 KV	Máquina de prueba ESD	Eléctricamente funcional
	Test de envejeci-miento	Encendido/apagado 30 segun-dos Ciclismo en 24 horas	Interruptor de alimentación	Eléctricamente funcional
	Conector USB	Encendido/apagado 250 veces	Conectar y desconectar	Eléctricamente funcional






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Estándar de inspección de cámara

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articulo de INSPECCION			Método de inspección	Estándar de inspección
Categoría		Artículo		
Apariencia	FPC / PCB	Color	El ojo desnudo	No se permiten diferencias importantes.
		Estar rasgado / picado	El ojo desnudo	No se permite la exposición a grietas de cobre.
		Calificación	El ojo desnudo	Claro, reconocible (dentro de una distancia de 30 cm)
	Poseedor	Arañazos	El ojo desnudo	No se permite la exposición interior a grietas
		Brecha	El ojo desnudo	Cumplir con el estándar de altura
		Tornillo	El ojo desnudo	Asegúrese de que se presenten los tornillos (si los hay)
		Daño	El ojo desnudo	No se permite la exposición interior a grietas
	Lente	Rascar	El ojo desnudo	Sin efecto sobre el estándar de resolución
		Contaminación	El ojo desnudo	Sin efecto sobre el estándar de resolución
		Película de aceite	El ojo desnudo	Sin efecto sobre el estándar de resolución
		Cinta de cubierta	El ojo desnudo	No hay problema de apariencia.
Función	Imagen	Sin comunicacion	Tablero de prueba	No permitido
		Píxel brillante	Pizarra	No permitido en el centro de imágenes
		Píxel oscuro	Pizarron	No permitido en el centro de imágenes
		Borroso	El ojo desnudo	No permitido
		Sin imágen	El ojo desnudo	No permitido
		Linea vertical	El ojo desnudo	No permitido
		Linea horizontal	El ojo desnudo	No permitido
		Fugas de luz	El ojo desnudo	No permitido
		Imagen parpadeante	El ojo desnudo	No permitido
		Moretón	Inspection Jig	No permitido
		Resolución	Chart	Sigue el estándar del cuadro de inspección saliente
		Color	El ojo desnudo	Sin problema
		Ruido	El ojo desnudo	No permitido
		Esquina Oscura	El ojo desnudo	Menos de 100 px por 100 px
		Resolución de color	El ojo desnudo	No Issue
Dimensión		Altura	El ojo desnudo	Sigue la hoja de datos de aprobación
		Ancho	El ojo desnudo	Sigue la hoja de datos de aprobación
		Longitud	El ojo desnudo	Sigue la hoja de datos de aprobación
		En general	El ojo desnudo	Sigue la hoja de datos de aprobación

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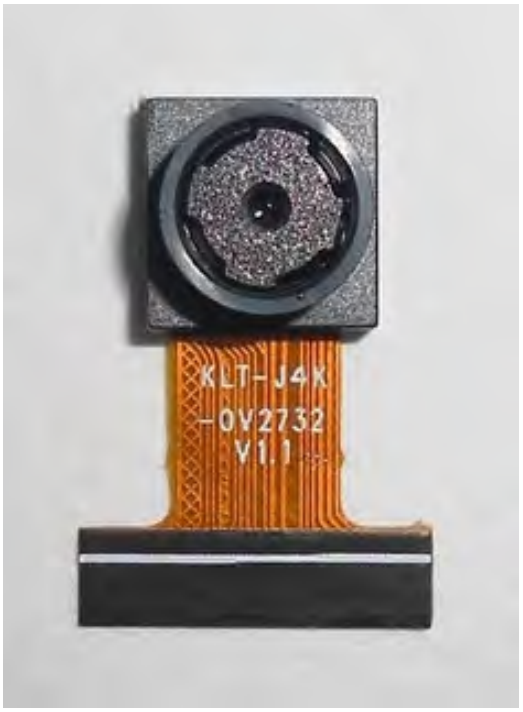
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Soluciones de paquetes KLT

Módulo de cámara KLT



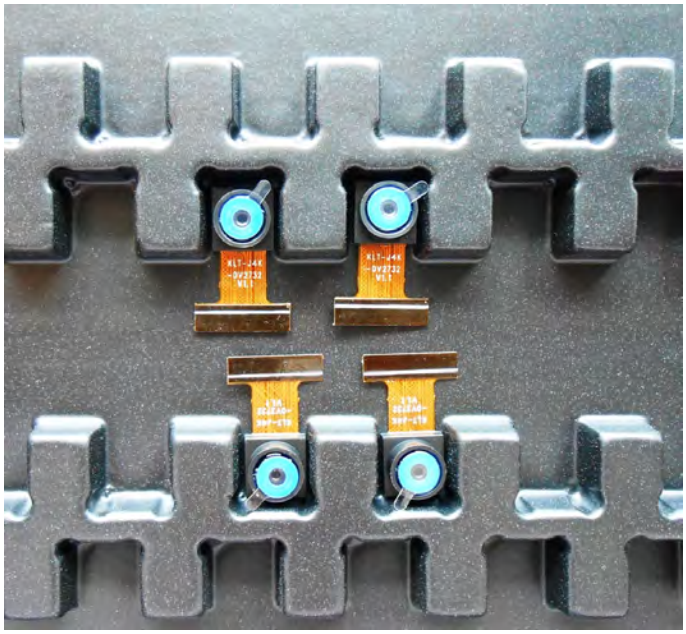
Completo con película protectora de lentes



Bandeja con Rejilla y Espacio



Coloque las cámaras en la bandeja



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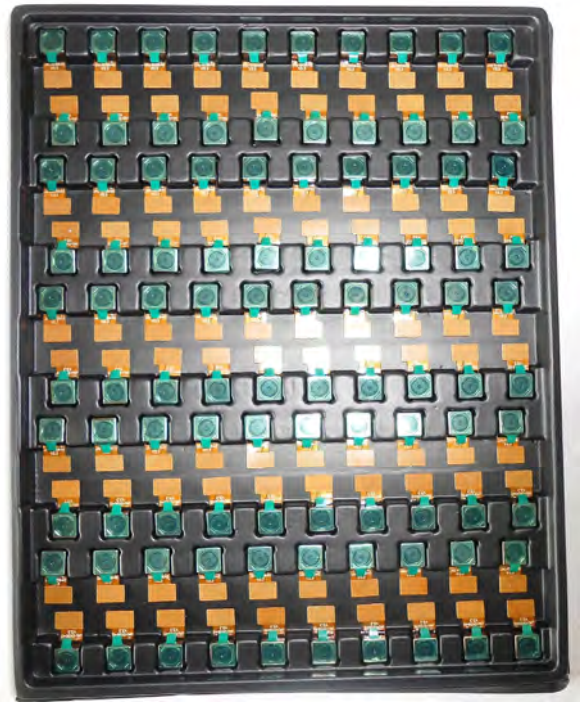
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Solución de paquete de módulos de cámara

Bandeja completa de cámaras



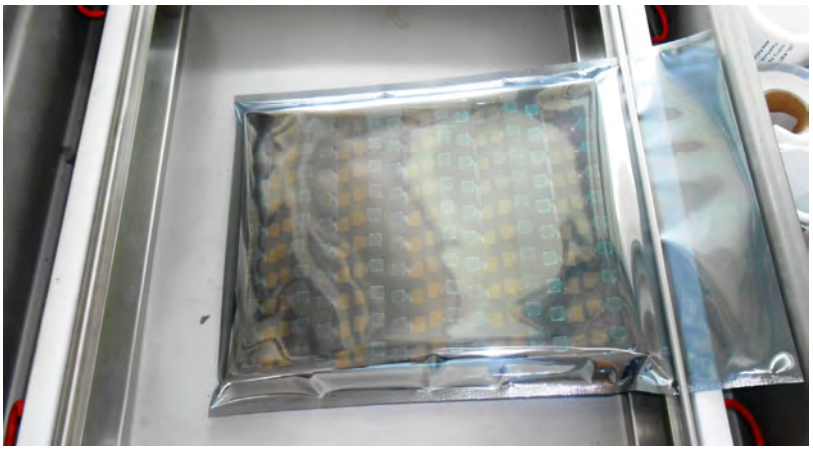
Cubra la bandeja con tapa



Coloque la bandeja en una bolsa antiestática



Aspire la bolsa antiestática



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Solución de paquete de módulos de cámara

Bolsa de vacío sellada con etiquetas
1. Modelo y descripción 2. Cantidad 3. Fecha de envío 4. Precaución



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Solución de paquete de pedidos grandes

Coloque láminas de espuma entre las bandejas



Las láminas de espuma son un poco más grandes que las bandejas



Coloque las láminas y bandejas de espuma en la caja



Las láminas de espuma son una caja que se ajusta perfectamente



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Solución de paquete para pedidos pequeños

Coloque las láminas y bandejas de espuma en una caja pequeña



Las láminas de espuma se ajustan muy bien a la caja pequeña



Paquete en caja pequeña para envío



Coloque cajas pequeñas en cajas más grandes



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Solución de paquete de caja de carbono

Sellar la caja de carbón



Caja etiquetada del paquete final



Caja de carbón lista para su envío
1. Dirección de entrega y número de teléfono 2. Número de caja y fecha de envío 3. Precaución frágil



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Solución de paquete de pedido de muestra

Coloque la muestra en una bolsa antiestática pequeña



Coloque los conectores en una pequeña bolsa antiestática





Etiquetas de muestra en la bolsa pequeña
1. Módulo de cámara o modelo de conector 2. Fecha de envío y cantidad
3. Precaución



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Solución de paquete para pedidos grandes de conectores

Conectores en una rueda



Conectores de etiquetas en la rueda



La rueda encaja perfectamente en la caja



Caja de conectores lista para su envío



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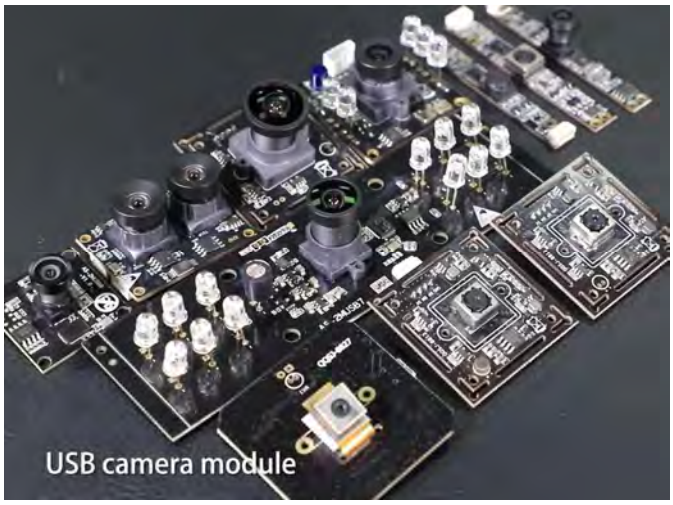
Empresa Kai Lap Technologies (KLT)

Kai Lap Technologies Group Limited. (KLT) se estableció en 2009, un fabricante impulsado por tecnología de próxima generación especializado en investigación, diseño y producción de productos de audio y video. KLT ocupa 20.000 pies cuadrados de plantas automatizadas con 100 empleados y un rendimiento anual de 30.000.000 de unidades de cámaras.

KLT proporciona diseño OEM y ODM, fabricación por contrato y fabrica productos de cámara. Puede proporcionarnos los requisitos, incluso con un borrador manual, nuestras ventas e ingeniería trabajan juntas para satisfacer sus necesidades. Nos consideramos su socio a largo plazo en el desarrollo de soluciones prácticas e innovadoras.

Nuestro equipo cubre todo, desde el desarrollo del concepto inicial hasta el producto producido en masa. KLT se especializa en diseño de cámaras personalizadas, materias primas, ingeniería electrónica, desarrollo de firmware/software, pruebas de productos y diseño de embalaje. Nuestros experimentados sistemas de suministro estratégico ofrecen una capacidad de fabricación sólida y confiable para pedidos de diversos tamaños.





Garantía limitada

KLT ofrece la siguiente garantía limitada si compró los Productos directamente de la empresa KLT o del sitio web de KLT, www.KaiLapTech.com. Los productos comprados a otros vendedores o fuentes no están cubiertos por esta Garantía limitada. KLT garantiza que los Productos estarán libres de defectos de materiales y mano de obra en condiciones de uso normal durante un período de un (1) año a partir de la fecha de recepción del producto (“Período de garantía”).

Para todos los Productos que contengan o desarrollen defectos materiales o de mano de obra durante el Período de garantía, KLT, a su exclusivo criterio, podrá: (i) reparar los Productos; (ii) reemplazar los Productos por productos nuevos o reacondicionados (los Productos de reemplazo deben ser de modelo idéntico o equivalente funcional); o (iii) proporcionarle un reembolso del precio que pagó por los Productos.

Esta Garantía limitada de KLT se limita únicamente a la reparación y/o reemplazo en los términos establecidos anteriormente. KLT no es confiable ni responsable de ningún evento posterior.

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Fuerza KLT

Potente fábrica





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Entrega prometida





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