

KLT-E7MA-OV5645 V2.1

5MP OmniVision OV5645 MIPI-Schnittstelle Autofokus Kameramodul



Vorderansicht



Rückansicht

Spezifikationen

Kameramodul Nr.	KLT-E7MA-OV5645 V2.1
Auflösung	5MP
Bildsensor	OV5645
Sensorart	1/4"
Pixel Größe	1.4 um x 1.4 um
EFL	3.29 mm
F.NO	2.80
Pixel	2592 x 1944
Betrachtungswinkel	68.7°(DFOV) 58.1°(HFOV) 45.3°(VFOV)
Linsenabmessungen	8.50 x 8.50 x 5.17 mm
Modulgröße	100.00 x 8.50 mm
Modultyp	Autofokus
Schnittstelle	MIPI
Autofokus-VCM-Treiber-IC	Eingebettet
Linsenmodell	KLT-LENS-M5101
Linsentyp	650 nm IR-Schnitt
Betriebstemperatur	-30°C to +70°C
Gegenstecker	AXK724147G

KLT-E7MA-OV5645 V2.1**5MP OmniVision OV5645 MIPI-Schnittstelle Autofokus Kameramodul**

Ansicht von oben



Seitenansicht



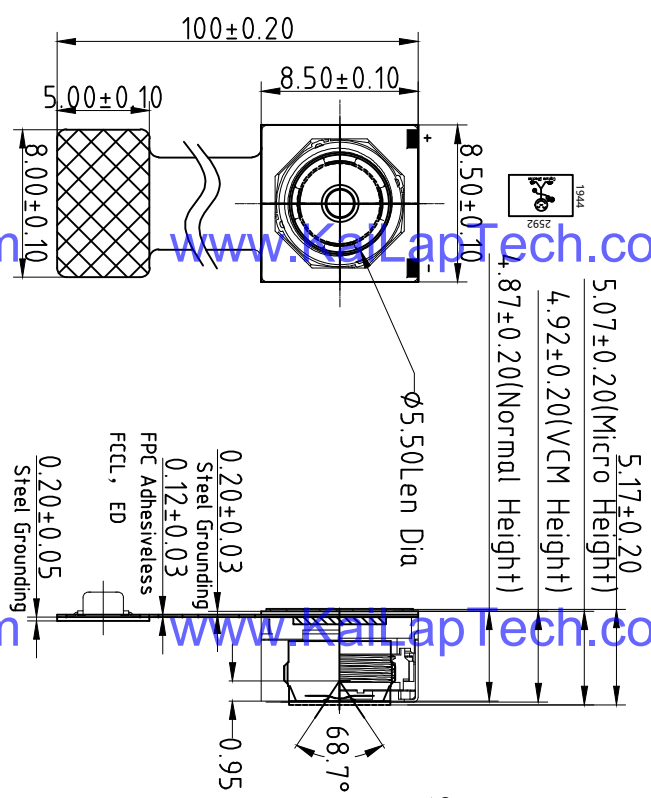
Untersicht



Gegenstecker

D			E	
Version		Information	Date	
V1.0		First Version	10-29-2018	
V2.1		Change lens	9-24-2020	

A		B	C	D
RoHS				
PIN	SIGNAL			
1	DATAP1			
2	IOVDD1.8V			
3	DVDD1.5V			
4	NC			
5	PWDN			
6	NC			
7	RESET			
8	SCL			
9	AVDD2.8V			
10	SDA			
11	AGND			
12	NC			
13	GND			
14	AFVDD2.8V			
15	DATAN0			
16	NC			
17	DATAP0			
18	NC			
19	CLKN			
20	NC			
21	CLKP			
22	GND			
23	DATAN1			
24	MCLK			



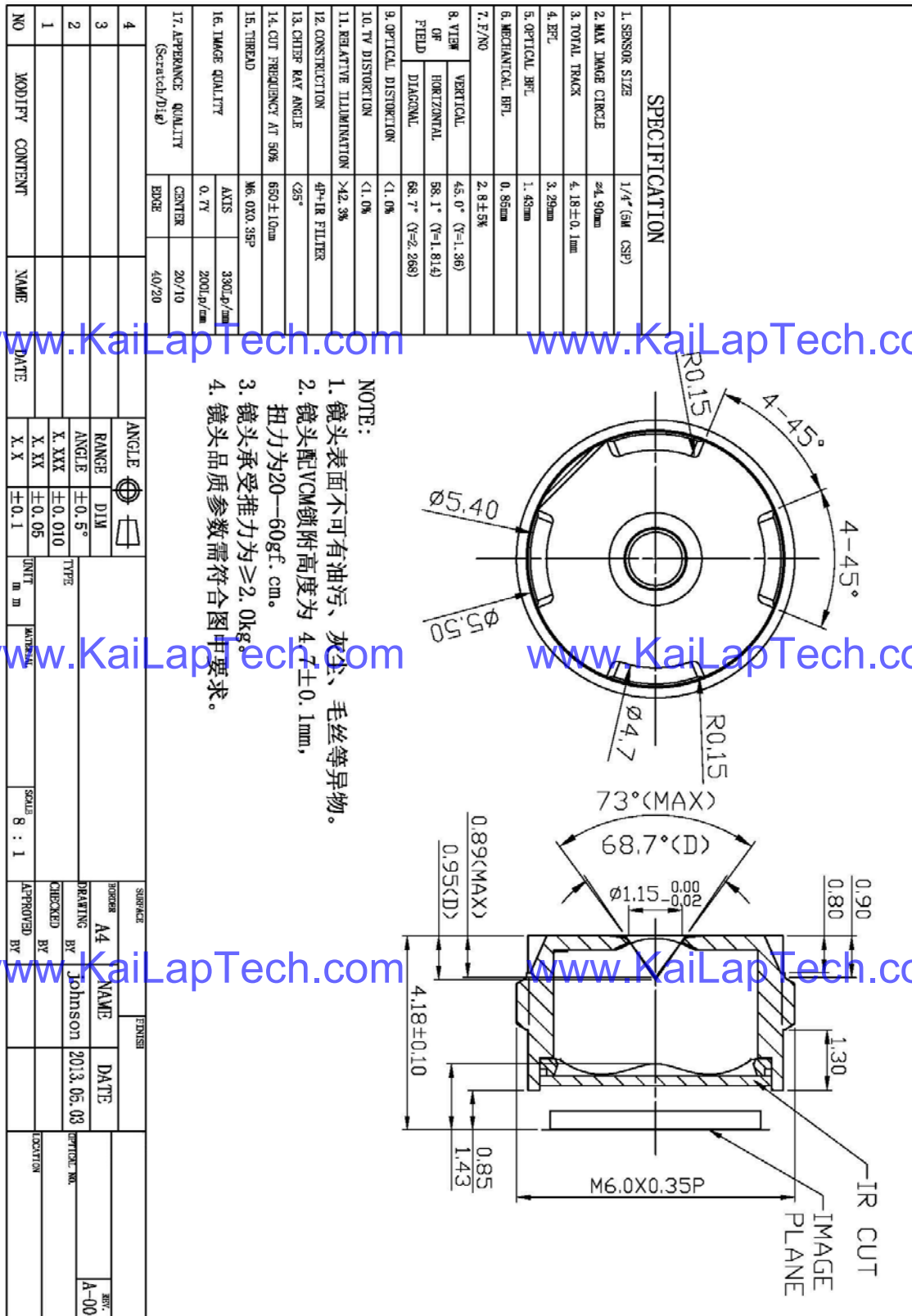
Parameter:

1、Sensor specification:
Image Sensor: OV5645
Pixel: 1.4umx1.4um
Lens Type: 1/4
Important Voltage Description: DVDD1.5V (external power supply);

2、Lens specification:
FOV: 68.7°
F/NO.: 2.8
TV distortion: <1.0%
Focal length: 3.29mm
Composition: 4P+IR FILTER
IR Cut Coating: 650nm±10nm@50%

Kai Lap Technologies Group Ltd				
Designed By	Kevin	Model Name:	KLT-E7MA-OV5645 V2.1	
Checked By	Aouly_Yan	Projection Type:	Unit:	Material:
		Third Angle	mm	1 of 1
		Scale:	1:1	Version:
				1/0

Lens Model: KLT-LENS-M5101



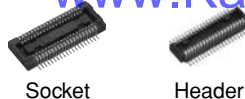
Panasonic
ideas for life

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

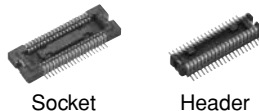
NARROW PITCH (0.4mm) CONNECTORS P4 SERIES



• Without retention fitting



• With retention fitting

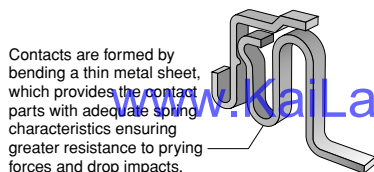


FEATURES

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.

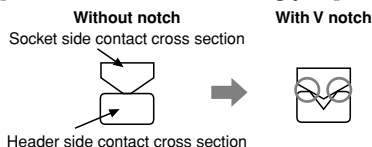


2) V notch construction used for excellent resistance against foreign matters.

• 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]

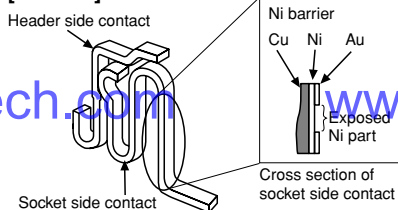


3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

• 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]

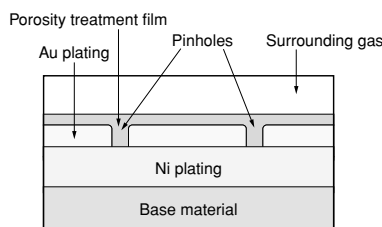


Note: Construction makes solder creeping difficult because header side is formed at the same time.

4) Porosity treatment applied for improved resistance against corrosion.

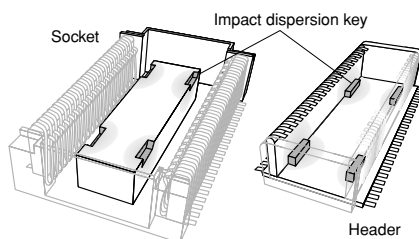
What is porosity treatment?

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.

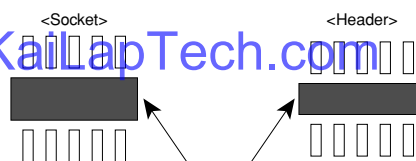
Note: The following numbers of contacts are not supported due to suction surface factors.

• Without retention fitting: 18 contacts or less

• With retention fitting: 22 contacts or less

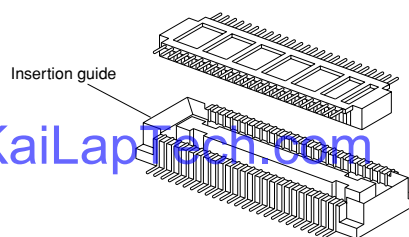
4. Construction makes designing devices easier.

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.



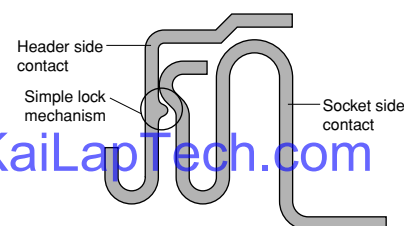
Connector bottom: Create any thru-hole and pattern wiring.

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.

APPLICATIONS

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

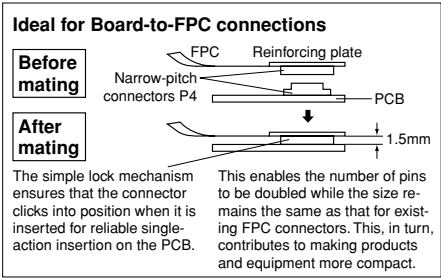


TABLE OF PRODUCT TYPES

P4 (0.4 mm pitch): Without retention fitting



☆: Available for sale

Mated height							
	1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm	
Number of contacts	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



☆: Available for sale

Mated height							
	1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm	
Number of contacts	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.

AXK7, 8

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*

* Only a socket of mated height 3.5 mm and 4.0 mm: 2,000 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.

www.KaiLapTech.com

www.KaiLapTech.com

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		
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.

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. 1,000M Ω (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 70m Ω	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Composite insertion force	Max. 0.981N {100gf}/contacts \times contacts (initial)	
	Composite removal force	Min. 0.0588N {6gf}/contacts \times contacts (Mated height 1.5 mm, without removal and retention fitting) Min. 0.118N {12gf}/contacts \times 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 300°C within 5 sec. 350°C within 8 sec.	Infrared reflow soldering Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M Ω , contact resistance max. 70m Ω	Sequence 1. -55 \pm 3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 \pm 3°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M Ω , contact resistance max. 70m Ω	Bath temperature 40 \pm 2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100M Ω , contact resistance max. 70m Ω	Bath temperature 35 \pm 2°C, saltwater concentration 5 \pm 1%
	H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. 70m Ω	Bath temperature 40 \pm 2°C, gas concentration 3 \pm 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

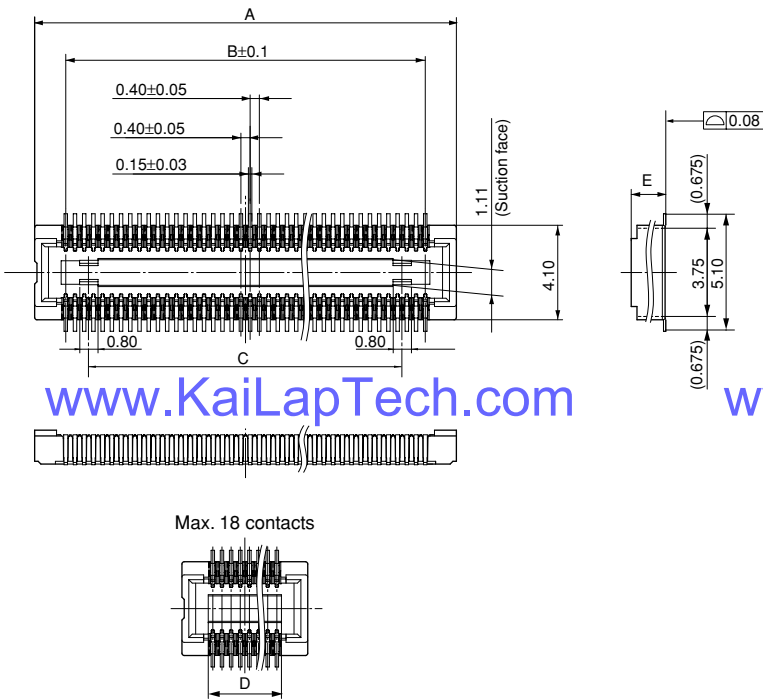
Part name	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0), Black	—
Contact and Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) However, upper terminal of Ni 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)

AXK7, 8

DIMENSIONS (mm)

1. Without Retention Fitting

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



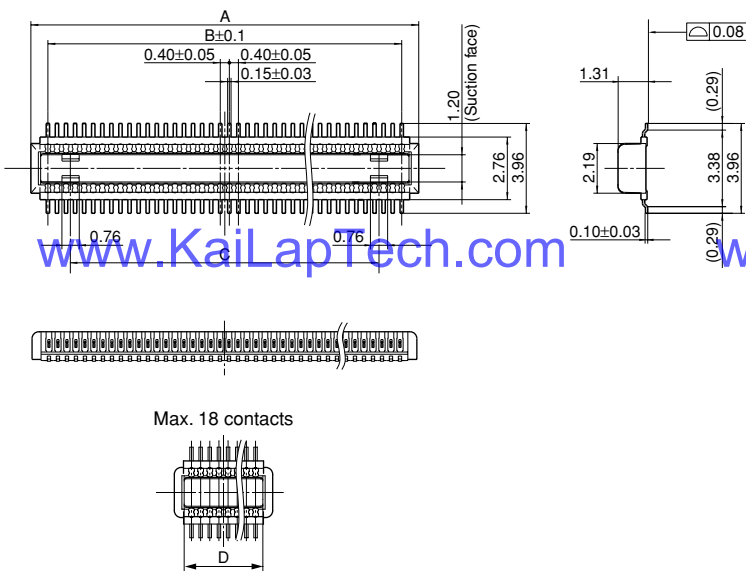
Dimension table (mm)

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

General tolerance: ±0.2

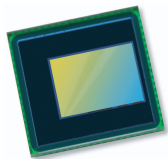
Header (Mated height: 1.5 mm, 2.0 mm, and 2.5 mm "products with V notch")



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.



OV5645 5-megapixel product brief



High Quality 5-Megapixel Photography and HD Video for Low-Cost Mobile Devices



available in
a lead-free
package

www.KailapTech.com

OmniVision's OV5645 is a high performance, 5-megapixel system-on-chip (SOC) ideally suited for the cost-sensitive segment of the mobile handset market. The CameraChip™ sensor's single MIPI port replaces both a bandwidth-limited DVP interface and a costly embedded JPEG compressor, allowing the new OV5645 sensor to save significant silicon area and cost. An embedded autofocus control with voice coil motor driver offers further cost savings for the end user, making the OV5645 a highly attractive alternative to other 5-megapixel sensors currently on the market.

The OV5645 also features a new picture-in-picture (PIP) architecture that offers an easy-to-implement, low-cost dual camera system solution for mobile handsets and smartphones. The feature is based on a master/slave configuration where a front-facing camera (OV7965) can be connected through the OV5645 master camera, enabling a two-camera system with PIP functionality without the need for an additional MIPI interface into the baseband processor.

www.KailapTech.com

Built on OmniVision's 1.4-micron OmniBSI™ pixel architecture, the OV5645 offers high performance 5-megapixel photography and 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 sensor's 720p HD video is captured in full field-of-view with 2 x 2 binning, which doubles the sensitivity and improves the signal-to-noise ratio (SNR). 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.

Find out more at www.ovt.com.

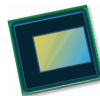
Applications

- Cellular Phones
- PC Multimedia
- Toys
- Digital Still Cameras

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, and automatic blacklevel calibration (ABLC)
- 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, YUV422/420, YCbCr422
- support for video or snapshot operations
- support for internal and external frame synchronization for frame exposure mode
- support for LED and flash strobe mode
- support for horizontal and vertical sub-sampling, binning
- support for minimizing artifacts on binned image
- support for data compression output
- support for anti-shake
- standard serial SCCB interface
- 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
- support for images sizes: 5 megapixel, and any arbitrary size scaling down from 5 megapixel
- support for 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

OV5645



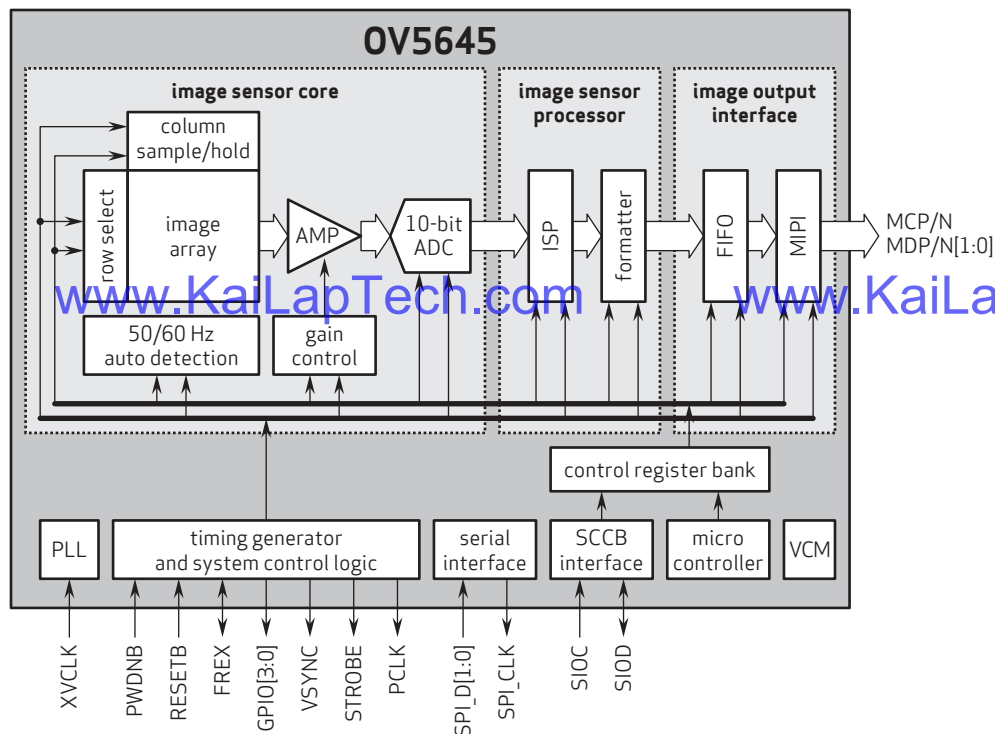
Ordering Information

- OV5645-A66A (color, lead-free, 66-pin CSP3)
- OV5645-G04A (color, chip probing, 200 μm backgrinding, reconstructed wafer)

Product Specifications

- active array size: 2592 x 1944
- power supply:
 - core: 1.5V \pm 5% (with embedded 1.5V regulator)
 - analog: 2.6 - 3.0V (2.8V typical)
 - I/O: 1.8V, 2.8V
- temperature range:
 - operating: -30°C to 70°C junction temperature
 - stable image: 0°C to 50°C junction temperature
- output formats: 8-/10-bit RGB RAW, RGB565/555/444, YUV422/420, YCbCr422 output
- lens size: 1/4"
- lens chief ray angle: 29.1°
- input clock frequency: 6 - 27 MHz
- max S/N ratio: 36 dB
- maximum image transfer rate:
 - QSXGA (2592x1944): 15 fps
 - 1080p: 30 fps
 - 1280x960: 45 fps
 - 720p: 60 fps
- shutter: rolling shutter / frame exposure
- maximum exposure interval: 1964 x t_{row}
- pixel size: 1.4 μm x 1.4 μm
- image area: 3673.6 μm x 2738.4 μm
- package/die dimensions:
 - CSP3: 6200 μm x 4860 μm
 - COB: 6190 μm x 4850 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

OmniVision reserves the right to make changes to their products or to discontinue any product or service without further notice. OmniVision, the OmniVision logo and OmniPixel are registered trademarks of OmniVision Technologies, Inc. OmniBSI+ is a trademark of OmniVision Technologies, Inc. All other trademarks are the property of their respective owners.



Referenztable für die Pinbelegungsdefinition des Kameramoduls

OmniVision Sony Himax Samsung On-Semi Aptina Himax GalaxyCore PixArt Bildsensoren	
Pin Signal	Beschreibung
DGND GND	Masse für digitale Schaltung
AGND	Masse für analoge Schaltung
PCLK DCK	DVP-PCLK-Ausgang
XCLR PWDN XSHUTDOWN STANDBY	Abschalten aktiv hoch mit internem Pulldown-Widerstand
MCLK XVCLK XCLK INCK	Systemeingangsuhr
RESET RST	Aktiv Low mit internem Pull-up-Widerstand zurücksetzen
NC NULL	keine Verbindung
SDA SIO_D SIOD	SCCB-Daten
SCL SIO_C SOIC	SCCB-Eingangstakt
VSYNCS XVS FSYNCS	DVP-VSYNCS-Ausgang
HREF XHS	DVP-HREF-Ausgang
DOVDD	Strom für E/A-Schaltung
AFVDD	Strom für VCM-Schaltung
AVDD	Strom für analoge Schaltung
DVDD	Strom für digitale Schaltung
STROBE FSTROBE	Strobe-Ausgang
FSIN	Synchronisieren Sie das VSYNCS-Signal vom anderen Sensor
SID	SCCB letzte Bit-ID-Eingabe
ILPWM	mechanische Shutter-Ausgangsanzeige
FREX	Rahmenbelichtung / mechanischer Verschluss
GPIO	Allzweckeingänge
SLASEL	I2C-Slave-Adresse auswählen
AFEN	CEN-Chip aktivieren aktiv hoch auf VCM-Treiber-IC
MIPI Schnittstelle	
MDN0 DN0 MD0N DATA_N DMO1N	MIPI 1st negative Ausgabe der Datenspur
MDP0 DP0 MD0P DATA_P DMO1P	MIPI 1st positiver Ausgang der Datenspur
MDN1 DN1 MD1N DATA2_N DMO2N	MIPI 2nd negative Ausgabe der Datenspur
MDP1 DP1 MD1P DATA2_P DMO2P	MIPI 2nd positiver Ausgang der Datenspur
MDN2 DN2 MD2N DATA3_N DMO3N	MIPI 3rd negative Ausgabe der Datenspur
MDP2 DP2 MD2P DATA3_P DMO3P	MIPI 3rd positiver Ausgang der Datenspur
MDN3 DN3 MD3N DATA4_N DMO4N	MIPI 4th negative Ausgabe der Datenspur
MDP3 DP3 MD3P DATA4_P DMO4P	MIPI 4th positiver Ausgang der Datenspur
MCN CLKN CLK_N DCKN	MIPI Uhr negativer Ausgang
MCP CLKP MCP CLK_P DCKN	MIPI Takt positiver Ausgang
DVP Parallel Schnittstelle	
D0 DO0 Y0	DVP Datenausgabeport 0
D1 DO1 Y1	DVP Datenausgabeport 1
D2 DO2 Y2	DVP Datenausgabeport 2
D3 DO3 Y3	DVP Datenausgabeport 3
D4 DO4 Y4	DVP Datenausgabeport 4
D5 DO5 Y5	DVP Datenausgabeport 5
D6 DO6 Y6	DVP Datenausgabeport 6
D7 DO7 Y7	DVP Datenausgabeport 7
D8 DO8 Y8	DVP Datenausgabeport 8
D9 DO9 Y9	DVP Datenausgabeport 9
D10 DO10 Y10	DVP Datenausgabeport 10
D11 DO11 Y11	DVP Datenausgabeport 11

Kameraanwendungen

your BEST camera module partner



www.KaiLapTech.com



www.KaiLapTech.com



www.KaiLapTech.com

www.KaiLapTech.com



www.KaiLapTech.com



www.KaiLapTech.com



Kamera-Zuverlässigkeitstest

Reliability Inspection Item			Testmethode	Akzeptanzkriterium
Kategorie		Artikel		
Umwelt	Lager Temperatur	Hoch 60°C 96 Std	Temperaturkammer	Keine anormale Situation
		Niedrig -20°C 96 Std	Temperaturkammer	Keine anormale Situation
	Betriebs Temperatur	Hoch 60°C 24 Std	Temperaturkammer	Keine anormale Situation
		Niedrig -20°C 24 Std	Temperaturkammer	Keine anormale Situation
	Feuchtigkeit	60°C 80% 24 Std	Temperaturkammer	Keine anormale Situation
	Thermischer Schock	Hoch 60°C 0.5 Std Niedrig -20°C 0.5 Std Radfahren rein 24 Std	Temperaturkammer	Keine anormale Situation
Physisch	Falltest (Im freien Fall)	Ohne Verpackung 60cm	10 Mal auf Holzboden	Elektrisch funktionsfähig
		Mit Paket 60cm	10 Mal auf Holzboden	Elektrisch funktionsfähig
	Vibrations Test	50Hz X-Axis 2mm 30 Minuten	Vibrationstisch	Elektrisch funktionsfähig
		50Hz Y-Axis 2mm 30 Minuten	Vibrationstisch	Elektrisch funktionsfähig
		50Hz Z-Axis 2mm 30 Minuten	Vibrationstisch	Elektrisch funktionsfähig
Elektrisch	ESD-Test	Kontaktaufnahme 2 KV	ESD-Prüfmaschine	Elektrisch funktionsfähig
		Luftentladung 4 KV	ESD-Prüfmaschine	Elektrisch funktionsfähig
	Alterungstest	On/Off 30 Sekunden Radfahren rein 24 Std	Stromschalter	Elektrisch funktionsfähig
	USB-Anschluss	On/Off 250 Mal	Einstecken und ausstecken	Elektrisch funktionsfähig



Inspektionsgegenstand		Untersuchungsmethode	Inspektionsstandard
Kategorie	Artikel		
Aussehen	FPC oder PCB	Farbe	Größere Unterschiede sind nicht zulässig.
		Zerrissen/gehackt werden	Das Freilegen von Kupferrissen ist nicht zulässig.
		Markierung	Klar, erkennbar (innerhalb von 30 cm Entfernung)
	Halterin	Kratzer	Die Freilegung von Rissen im Inneren ist nicht zulässig
		Lücke	Erfüllen Sie den Höhenstandard
		Schraube	Stellen Sie sicher, dass Schrauben vorhanden sind (falls vorhanden)
		Schaden	Die Freilegung von Rissen im Inneren ist nicht zulässig
	Linse	Kratzen	Keine Auswirkung auf den Auflösungsstandard
		Kontamination	Keine Auswirkung auf den Auflösungsstandard
		Ölfilm	Keine Auswirkung auf den Auflösungsstandard
		Abdeckband	Kein Problem beim Aussehen.
Funktion	Bild	Keine Kommunikation	Testboard
		Helles Pixel	Tafel
		Dunkles Pixel	Weißer Tafel
		Verschwommen	Das bloße Auge
		Kein Bild	Das bloße Auge
		Vertikale Linie	Das bloße Auge
		Horizontale Linie	Das bloße Auge
		Kleines Leck	Das bloße Auge
		Blinkendes Bild	Das bloße Auge
		Prellung	Inspektionslehre
		Auflösung	Diagramm
		Farbe	Das bloße Auge
		Lärm	Das bloße Auge
		Ecke dunkel	Das bloße Auge
		Farbauflösung	Das bloße Auge
Abmessungen		Höhe	Das bloße Auge
		Breite	Das bloße Auge
		Länge	Das bloße Auge
		Gesamt	Das bloße Auge

KLT-Paketlösungen

KLT Kameramodul



Komplett mit Linsenschutzfolie



Tablett mit Gitter und Raum

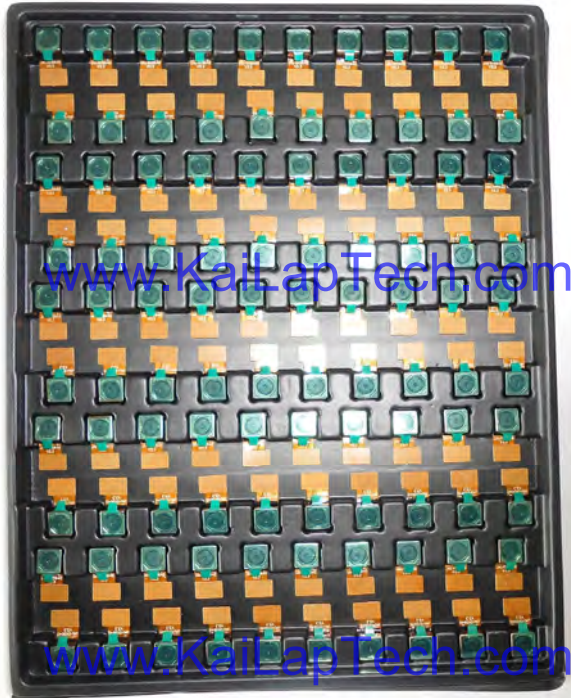


Legen Sie die Kameras auf das Tablett



Paketlösung für Kameramodule

Volles Tablett mit Kameras



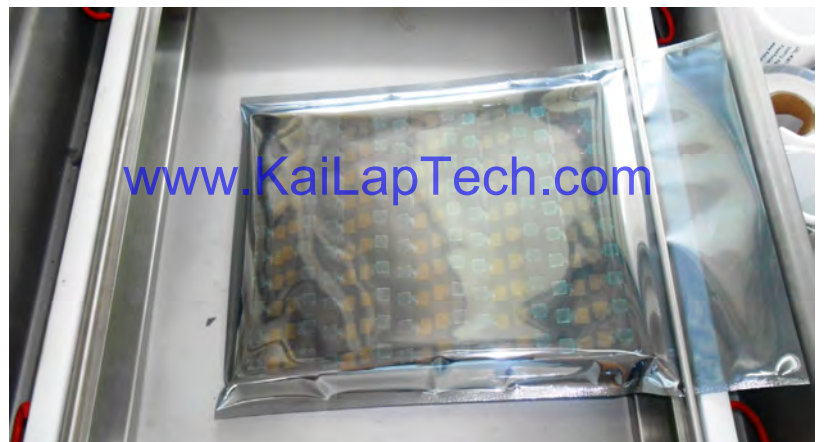
Abdeckschale mit Deckel



In Antistatikbeutel stecken



Staubsaugen Sie den antistatischen Beutel



Paketlösung für Kameramodule

Versiegelter Vakuumbbeutel mit Etiketten

1. Modell und Beschreibung 2. Menge 3. Versanddatum 4. Achtung



Paketlösung für große Bestellungen

Schaumstoffplatten zwischen
die Tablettts legen



Schaumstoffplatten sind etwas
größer als Tablettts



www.KaiLapTech.com

www.KaiLapTech.com

Legen Sie Schaumstoffplatten und
Tablettts in die Schachtel



Schaumstoffplatten sind eng anliegende Box



Paketlösung für kleine Bestellungen

Legen Sie die Schaumstoffplatten und
Tabletts in die kleine Schachtel



www.KaiLapTech.com

Paket in kleiner Box für den Versand

Schaumstoffplatten passen gut in
die kleine Box



www.KaiLapTech.com

Legen Sie kleine Kartons in größere Kartons



www.KaiLapTech.com



www.KaiLapTech.com

Carbon Box Paketlösung

Verschließen Sie die Carbonbox

Beschriftete Schachtel mit Endverpackung



Versandfertige Karbonbox

1. Lieferadresse und Telefonnummer
2. Box-Nr. und Versanddatum
3. Zerbrechliche Vorsicht



Lösung für Musterbestellungspakete

Legen Sie die Probe in einen kleinen antistatischen Beutel

Stecken Sie die Anschlüsse in den kleinen antistatischen Beutel



Musteretiketten auf dem kleinen Beutel

1. Kameramodul oder Anschlussmodell 2. Lieferdatum und Menge 3. Achtung



Steckverbinder Paketlösung für große Bestellungen

Steckverbinder in einem Rad



Steckverbinder im Rad beschriften



Das Rad passt perfekt in die Box



Steckerbox versandfertig



Unternehmen Kai Lap Technologies (KLT)

Kai Lap Technologies Group Limited. (KLT) wurde 2009 gegründet und ist ein technologiegetriebener Hersteller der nächsten Generation, der sich auf Forschung, Design und Produktion von Audio- und Videoprodukten spezialisiert hat. KLT verfügt über 20.000 Quadratfuß automatisierte Fabriken mit 100 Mitarbeitern und einem jährlichen Durchsatz von 30.000.000 Kameraeinheiten.

KLT bietet OEM-, ODM-Design, Auftragsfertigung und baut die Kameraprodukte. Sie können uns die Anforderungen auch mit einem Handentwurf übermitteln, unser Vertrieb und unsere Technik arbeiten zusammen, um Ihre Anforderungen zu erfüllen. Wir verstehen uns als Ihr langfristiger Partner bei der Entwicklung praktischer und innovativer Lösungen.

Unser Team deckt alles von der ersten Konzeptentwicklung bis zum Massenprodukt ab. KLT ist spezialisiert auf kundenspezifisches Kameradesign, Rohmaterial, Elektrotechnik, Firmware-/Softwareentwicklung, Produkttests und Verpackungsdesign. Unsere erfahrenen strategischen Versorgungssysteme bieten eine robuste und zuverlässige Fertigungskapazität für Aufträge unterschiedlicher Größe.

www.KaiLapTech.com

www.KaiLapTech.com



Eingeschränkte Garantie

KLT gewährt die folgende eingeschränkte Garantie, wenn Sie das/die Produkt(e) direkt von der Firma KLT oder von der Website von KLT, www.KaiLapTech.com, gekauft haben. Produkte, die von anderen Verkäufern oder Quellen gekauft wurden, fallen nicht unter diese beschränkte Garantie. KLT garantiert, dass das/die Produkt(e) bei normalem Gebrauch für einen Zeitraum von einem (1) Jahr ab dem Datum, an dem Sie das Produkt erhalten („Garantiezeitraum“), frei von Material- und Verarbeitungsfehlern sind.

Für alle Produkte, die während des Garantiezeitraums Material- oder Verarbeitungsfehler enthalten oder entwickeln, wird KLT nach eigenem Ermessen entweder: (i) die Produkte reparieren; (ii) das/die Produkt(e) durch ein neues oder generalüberholtes Produkt(e) ersetzen (Ersatzprodukt(e) sind von identischem Modell oder funktionell gleichwertig); oder (iii) Ihnen den Preis erstatten, den Sie für das/die Produkt(e) gezahlt haben.

Diese eingeschränkte Garantie von KLT ist ausschließlich auf Reparatur und/oder Ersatz zu den oben genannten Bedingungen beschränkt. KLT ist nicht zuverlässig oder verantwortlich für nachfolgende Ereignisse.





CMOS CAMERA MODULES



your BEST camera module partner

KLT Stärke

Leistungsstarke Fabrik



Professioneller Service



Versprochene Lieferung



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

All rights reserved @ Kai Lap Technologies Group Ltd. Specifications subject to change without notice.