

KLT-DMT-AR0234 V3.0 IR850PB

**2.3MP OnSemi AR0234 Global Shutter DVP Interface 850-1100nm IR Pass
Global Shutter Auto Focus Camera Module**



Front View



Back View

Specifications

Camera Module No.	KLT-DMT-AR0234 V3.0 IR850PB
Resolution	2.3MP
Image Sensor	AR0234 Global Shutter
Sensor Type	1/2.6"
Pixel Size	3.0 um x 3.0 um
EFL	6.03 mm
F.NO	2.10
Pixel	1920 x 1200
View Angle	68.0°(DFOV) 57.0°(HFOV) 35.0°(VFOV)
Lens Dimensions	18.00 x 18.00 x 23.99 mm
Module Size	60.00 x 26.00 mm
Module Type	Auto Focus
Interface	DVP Parallel
Auto Focus VCM Driver IC	DW9714P
Lens Model	KLT-LENS-TRC-20522A18-01
Lens Type	850nm-1100nm IR Pass
Operating Temperature	-30°C to +70°C
Mating Connector	AXT524124

KLT-DMT-AR0234 V3.0 IR850PB

**2.3MP OnSemi AR0234 Global Shutter DVP Interface 850-1100nm IR Pass
Global Shutter Auto Focus Camera Module**



Top View



Side View



Bottom View



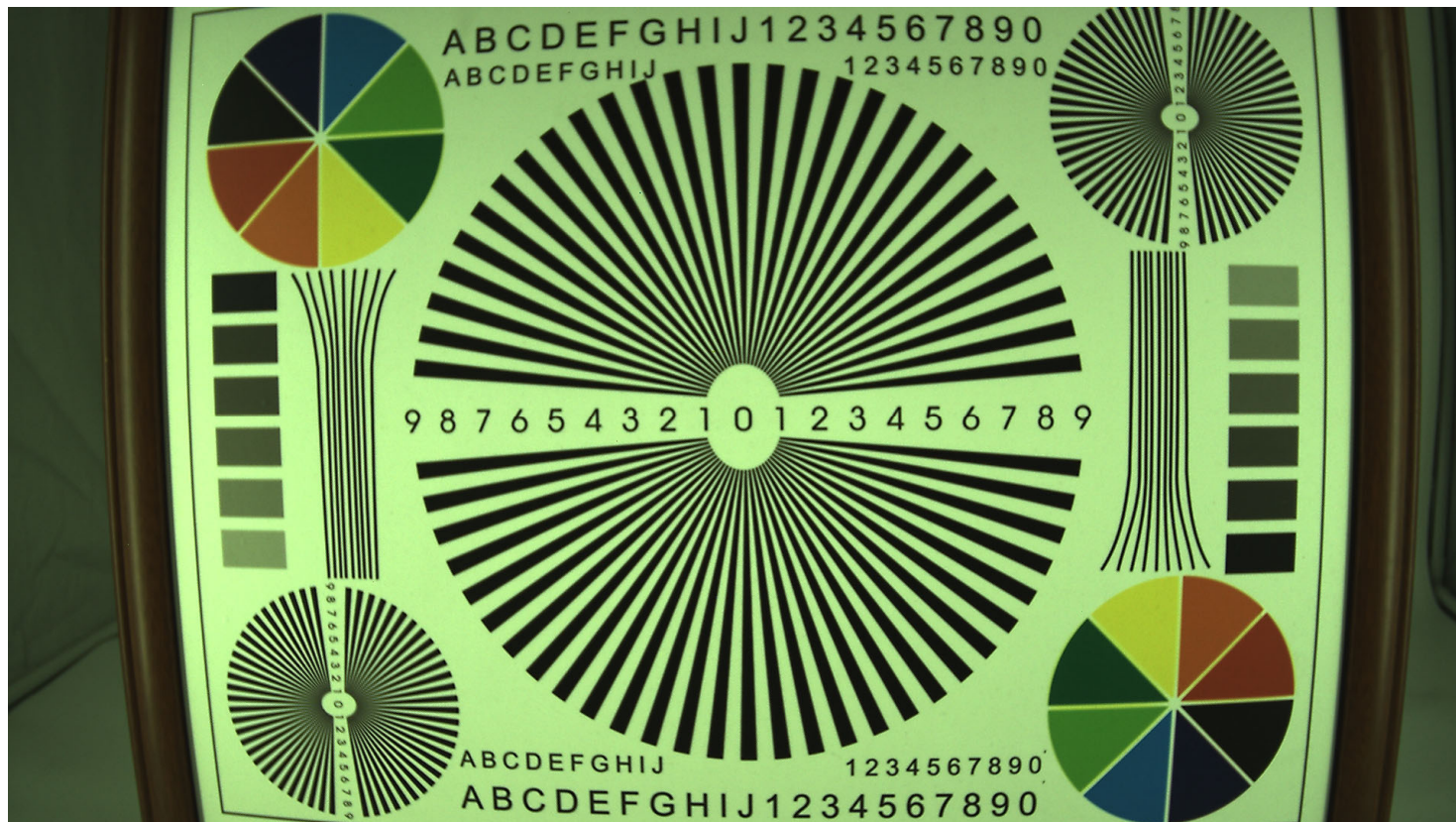
Mating Connector



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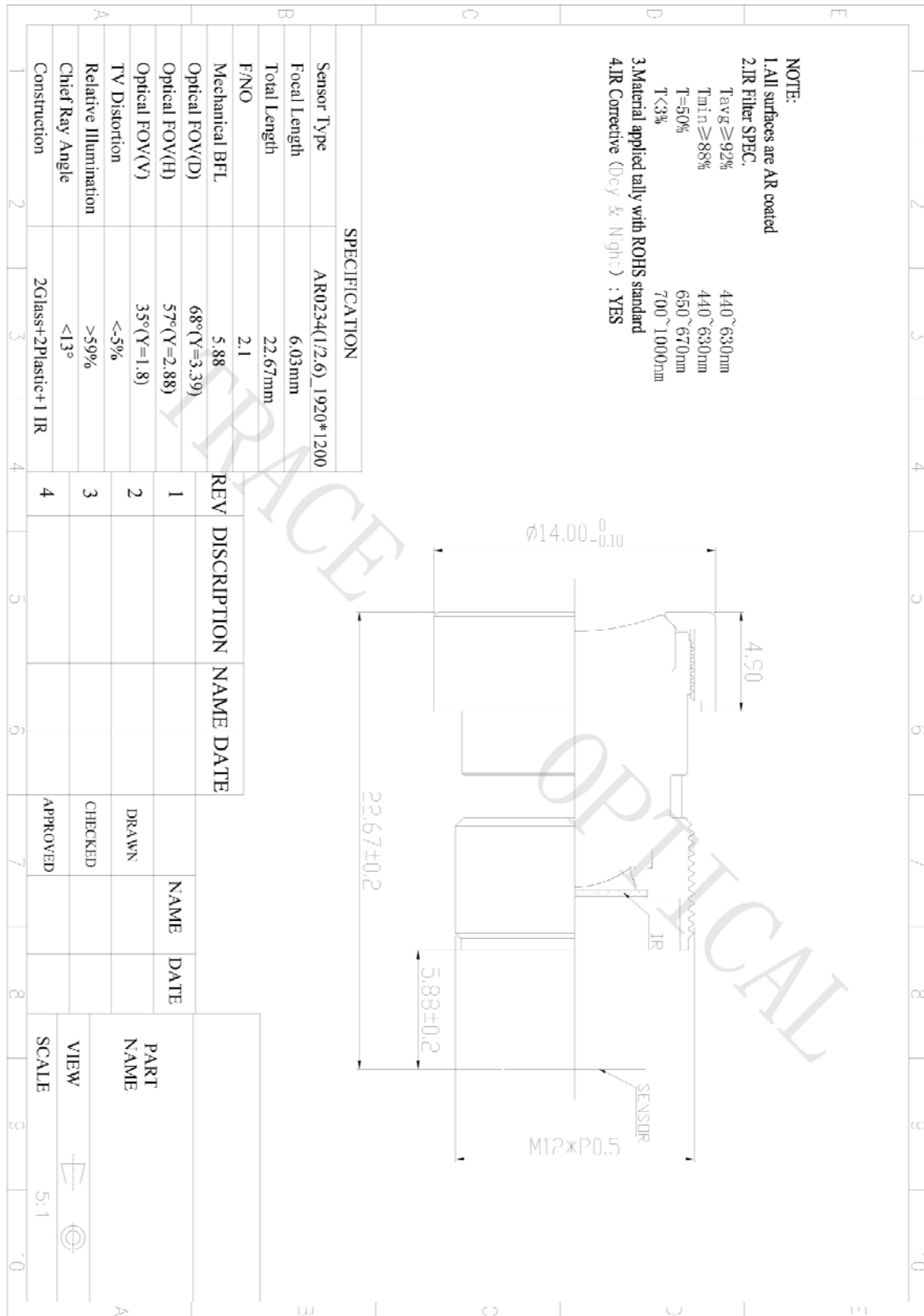


Alkali Metals Alkaline Earth Metals Transition Metals Metalloids Non-metals Actinides Halogens										Name Symbol		13 26,98 Al Aluminium				14 28,08 Si Silicon				15 30,97 P Phosphorus				16 32,07 S Sulfur																											
22 47,87 Ti Titanium				23 50,94 V Vanadium				24 51,99 Cr Chromium				25 54,94 Mn Manganese				26 55,85 Fe Iron				27 58,93 Co Kobalt				28 58,69 Ni Nickel				29 63,55 Cu Copper				30 65,39 Zn Zink				31 69,72 Ga Gallium				32 72,61 Ge Germanium				33 74,92 As Arsenic				34 78,96 Se Selenium			
40 91,22 Zr Zirkonium				41 92,91 Nb Niobium				42 95,94 Mo Molybdenum				43 97 Tc Technetium				44 101,1 Ru Ruthenium				45 102,9 Rh Rhodium				46 106,4 Rd Palladium				47 107,9 Ag Silver				48 112,4 Cd Cadmium				49 114,8 In Indium				50 118,7 Sn Tin				51 121,8 Sb Antimony				52 127,6 Te Tellurium			
72 178,5 Hf Hafnium				73 180,9 Ta Tantalum				74 183,8 W Tungsten				75 186,2 Re Rhenium				76 190,2 Os Osmium				77 192,2 Ir Iridium				78 195,1 Pt Platinum				79 196,9 Au Gold				80 200,6 Hg Mercury				81 204,4 Tl Thallium				82 207,2 Pb Lead				83 208,9 Bi Bismuth				84 (210) Po Polonium			
104 (261) Rf Rutherfordium				105 (262) Db Dubnium				106 (263) Sg Seaborgium				107 (264) Bh Bohrium				108 (265) Hs Hassium				109 (268) Mt Meitnerium				110 (281) Ds Darmstadtium				111 (280) Rg Roentgenium				112 (285) Cn Copernicium				113 (284) Nh Nihonium				114 (289) Fl Flerovium				115 (288) Mc Moskovium				116 (292) Lv Livermorium			
57 138,9 La Lanthanum				58 140,1 Ce Cerium				59 140,9 Pr Praseodym				60 144,2 Nd Niobium				61 145 Pm Promethium				62 150,4 Sm Samarium				63 151,9 Eu Europium				64 157,2 Gd Gadolinium				65 158,9 Th Thulium				66 162,5 Dy Dysprosium				67 164,9 Ho Terbium				68 167,2 Er Erbium				69 168,9 Tm Thulium			

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Lens Model: KLT-LENS-TRC-20522A18-01



FEATURES

120mA output driver with 10-bit resolution DAC
Smart Actuator Control (SAC™) modes
Supply voltage (V_{DD}): 2.3V to 4.3V
I/O voltage (V_{IN}): 1.8V to V_{DD}
Fast mode and Fast mode plus I²C interface compatible
Power On Reset (POR)
Power Down (PD) mode current consumption less than 1uA
Package: 6-pin WLCSP (0.77mm x 1.14mm x 0.30mm)

APPLICATIONS

Mobile camera
Digital still camera
Camcorder
Web camera
Action camera

GENERAL DESCRIPTION

The DW9714P designed for linear control of Voice Coil Motors (VCM). This device is compatible with DW9714. The DW9714P has a single 10-bit DAC with 120mA output current sink capability. This device features SAC™ mode which can minimize the mechanical vibration and achieve very fast mechanical settling time. The SAC™ is protected by patent and registered trademark of DONGWOON ANATECH.

The DW9714P operates from a single 2.3V to 4.3V supply. The internal DAC is controlled via an I²C serial interface that operates at clock rate up to 1MHz. The I²C address for the DW9714P is 0x18. The DW9714P offers PD mode with current consumption less than 1uA.

The DW9714P can be used for auto focus applications in mobile cameras, digital still cameras, camcorders, web cameras and action cameras.

TYPICAL APPLICATION CIRCUIT

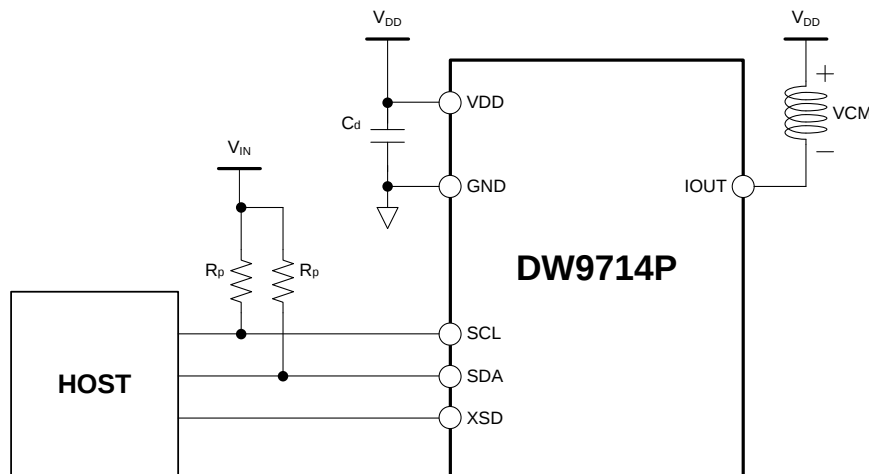


Figure 1. Typical application circuit



Socket



Header

Compliance with RoHS Directive

NARROW-PITCH, THIN AND SLIM CONNECTOR FOR BOARD-TO-FPC CONNECTION

NARROW PITCH (0.4 mm) CONNECTORS F4S SERIES

FEATURES

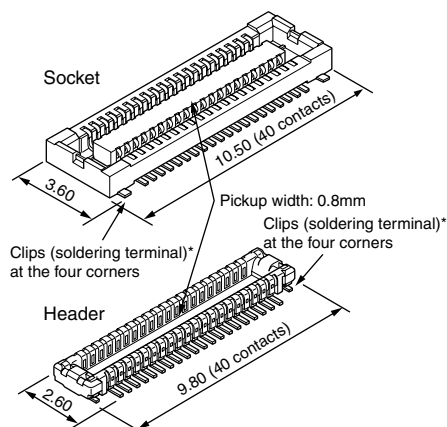
1. Space-saving (3.6 mm widthwise)

The required space is smaller than our F4 series (40-contact type):

Socket — 27% smaller,

Header — 38% smaller

The small size contributes to the miniaturization of target equipment.



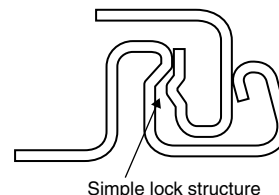
* Clips for preventing the solder joints from being removed

2. Highly reliable

TOUGH CONTACT has strong resistance to adverse environments.

(See Page 6 for details of the structure)
Note: If extra resistance to shock caused by dropping is required, we recommend using our previous F4 Series.

3. The simple lock structure gives tactile feedback that ensures a superior mating/unmating operation feel.



4. Gull-wing type terminals

The gull-wing type terminals facilitate automatic mounting inspections.

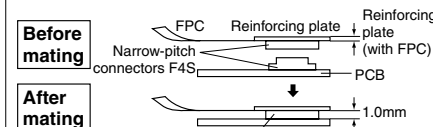
5. Connectors for inspection available

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”

Example of Board-to-FPC connections



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

ORDERING INFORMATION

AXT 4

5: Narrow Pitch Connector F4S (0.4 mm pitch) Socket

6: Narrow Pitch Connector F4S (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

1: For mated height 1.0 mm

2: For mated height 1.2 mm

<Header>

1: For mated height 1.0 mm

2: For mated height 1.2 mm

Functions

<Socket, Header>

2: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>

4: Base: Ni plating Surface: Au plating (for Ni barrier available)

<Header>

4: Base: Ni plating Surface: Au plating

Note: Please note that models with a mated height of 1.0 mm (7th digit of part number is “1”) and 1.2 mm (7th digit of part number is “2”) are not compatible.

AXT5, 6

PRODUCT TYPES **TOUGH CONTACT**

Mated height	Number of contacts	Part number		Packing	
		Socket	Header	Inner carton	Outer carton
1.0mm	10	AXT510124	AXT610124	3,000 pieces	6,000 pieces
	12	AXT512124	AXT612124		
	14	AXT514124	AXT614124		
	16	AXT516124	AXT616124		
	18	AXT518124	AXT618124		
	20	AXT520124	AXT620124		
	22	AXT522124	AXT622124		
	24	AXT524124	AXT624124		
	26	AXT526124	AXT626124		
	28	AXT528124	AXT628124		
	30	AXT530124	AXT630124		
	32	AXT532124	AXT632124		
	34	AXT534124	AXT634124		
	36	AXT536124	AXT636124		
	38	AXT538124	AXT638124		
	40	AXT540124	AXT640124		
	42	AXT542124	AXT642124		
	44	AXT544124	AXT644124		
	46	AXT546124	AXT646124		
	48	AXT548124	AXT648124		
	50	AXT550124	AXT650124		
	54	AXT554124	AXT654124		
	60	AXT560124	AXT660124		
	64	AXT564124	AXT664124		
1.2mm	70	AXT570124	AXT670124		
	80	AXT580124	AXT680124		
	10	AXT510224	AXT610224		
	30	AXT530224	AXT630224		
	40	AXT540224	AXT640224		
	50	AXT550224	AXT650224		
	80	AXT580224	AXT680224		

Notes: 1. Order unit: For mass production: in 1-inner-box (1-reel) units
Samples for mounting check: in 50-connector units. Please contact our sales office.
Samples: Small lot orders are possible. Please contact our sales office.
2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, please contact our sales office.
3. Please contact us for connectors having a number of contacts other than those listed above.

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.	No short-circuiting or damage at a detection current of 1 mA when the specified voltage is applied for one minute.
	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.981N/contacts × contacts (initial)	
	Composite removal force	Min. 0.165N/contacts × contacts	
	Contact holding force (Socket contact)	Min. 0.49N/contacts	Measuring the maximum force. As the contact is axially pull out.
Environmental characteristics	Ambient temperature	−55°C to +85°C	No freezing at low temperatures. No dew condensation.
	Soldering heat resistance	Peak temperature: 260°C or less (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 sec. 350°C within 3 sec.	Soldering iron
	Storage temperature	−55°C to +85°C (product only) −40°C to +50°C (emboss packing)	No freezing at low temperatures. No dew condensation.
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Sequence 1. −55 $\frac{3}{5}$ °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 $\frac{3}{5}$ °C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	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. 90mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H ₂ S resistance (header and socket mated)	48 hours, contact resistance max. 90mΩ	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		20-contact type: Socket: 0.03 g Header: 0.01 g	

2. Material and surface treatment

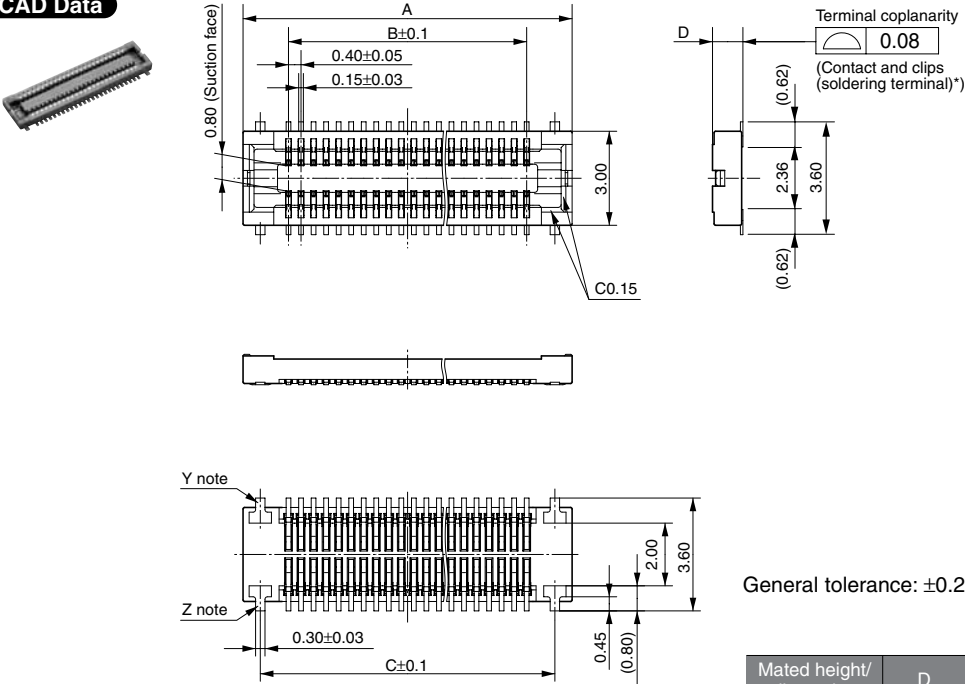
Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact and Post	Copper alloy	Contact portion: Base: Ni plating Surface: Au plating Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips) The socket terminals close to the portion to be soldered have nickel barriers (exposed nickel portions). Metal clips: Sockets: Base: Ni plating Surface: Pd+Au flash plating (except the terminal tips) Headers: Base: Ni plating Surface: Au plating (except the terminal tips)

AXT5, 6

DIMENSIONS (Unit: mm) The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://panasonic-electric-works.net/ac>

Socket (Mated height: 1.0 mm and 1.2 mm)

CAD Data



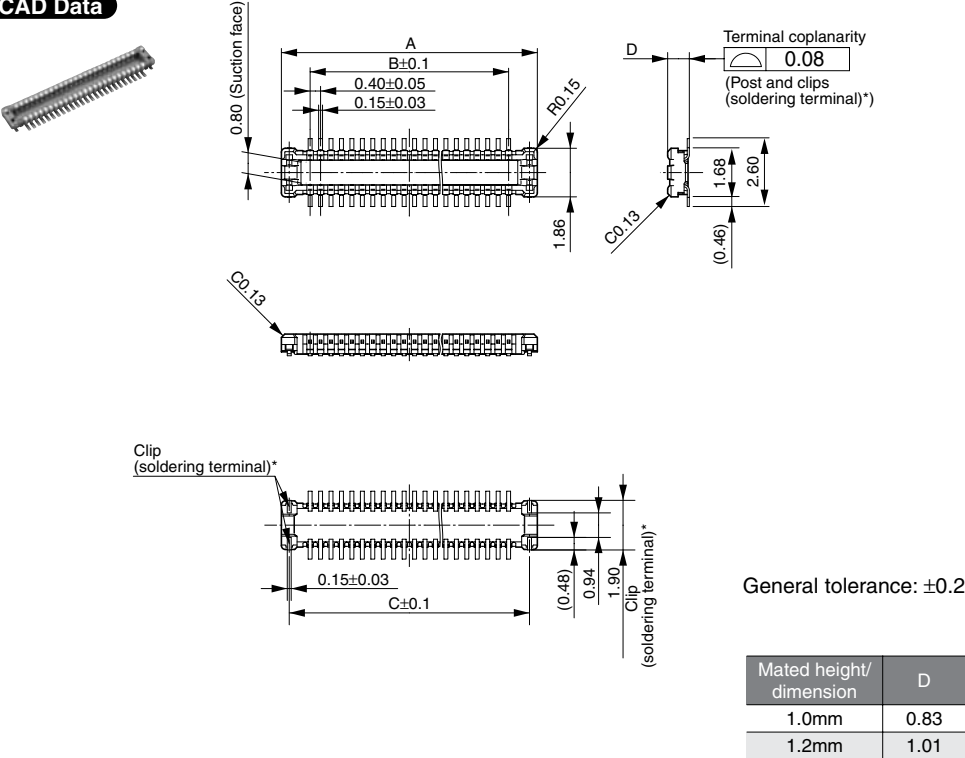
Note: Since the clip (soldering terminal)* has a single-piece construction, sections Y and Z are electrically connected.

Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	4.5	1.6	3.4
12	4.9	2.0	3.8
14	5.3	2.4	4.2
16	5.7	2.8	4.6
18	6.1	3.2	5.0
20	6.5	3.6	5.4
22	6.9	4.0	5.8
24	7.3	4.4	6.2
26	7.7	4.8	6.6
28	8.1	5.2	7.0
30	8.5	5.6	7.4
32	8.9	6.0	7.8
34	9.3	6.4	8.2
36	9.7	6.8	8.6
38	10.1	7.2	9.0
40	10.5	7.6	9.4
42	10.9	8.0	9.8
44	11.3	8.4	10.2
46	11.7	8.8	10.6
48	12.1	9.2	11.0
50	12.5	9.6	11.4
54	13.3	10.4	12.2
60	14.5	11.6	13.4
64	15.3	12.4	14.2
70	16.5	13.6	15.4
80	18.5	15.6	17.4

Header (Mated height: 1.0 mm and 1.2 mm)

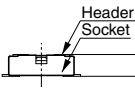
CAD Data



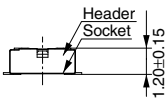
Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	3.8	1.6	3.2
12	4.2	2.0	3.6
14	4.6	2.4	4.0
16	5.0	2.8	4.4
18	5.4	3.2	4.8
20	5.8	3.6	5.2
22	6.2	4.0	5.6
24	6.6	4.4	6.0
26	7.0	4.8	6.4
28	7.4	5.2	6.8
30	7.8	5.6	7.2
32	8.2	6.0	7.6
34	8.6	6.4	8.0
36	9.0	6.8	8.4
38	9.4	7.2	8.8
40	9.8	7.6	9.2
42	10.2	8.0	9.6
44	10.6	8.4	10.0
46	11.0	8.8	10.4
48	11.4	9.2	10.8
50	11.8	9.6	11.2
54	12.6	10.4	12.0
60	13.8	11.6	13.2
64	14.6	12.4	14.0
70	15.8	13.6	15.2
80	17.8	15.6	17.2

• Socket and Header are mated



Mated height: 1.0 mm



Mated height: 1.2 mm

AR0234CS

1/2.6-inch 2.3 Mp CMOS Digital Image Sensor with Global Shutter

Product Overview

For complete documentation, see the data sheet.

The AR0234CS is a 1/2.6-inch 2Mp CMOS digital image sensor with an active-pixel array of 1920 (H) x 1200 (V). It incorporates a new innovative global shutter pixel design optimized for accurate and fast capture of moving scenes at 120 frame per second, full resolution. The sensor produces clear, low noise images in both low-light and bright scenes. It includes sophisticated camera functions such as auto exposure control, windowing, row skip mode, column-skip mode, pixel-binning, and both video and single frame modes. It is programmable through a simple two-wire serial interface. The AR0234CS produces extraordinarily clear, sharp digital pictures with an industry leading Global Shutter Efficiency, and its ability to capture both continuous video and single frames makes it the perfect choice for a wide range of applications, including scanning, autonomous mobility, surveillance and industrial quality control.

Features

- Best in Class Global Shutter Efficiency
- Low Dark Current/Hot Pixels
- High Linear Full Well
- Low Operational Power
- Small Form Factor
- Built-In Statistics Engine
- Multiple Functional Modes - Row & Col Skip Modes, Pixel Binning

Applications

- Gesture recognition
- 3D scanning
- Position tracking
- Machine vision
- AR/VR/MR/XR

Benefits

- Superior Image Quality for fast-moving objects
- Reduced Total Noise Floor, Higher SNR delivering High Image Fidelity
- High Dynamic Range, delivers higher image clarity
- Suitable of Battery Powered Applications
- Ideal for Space Constrained Applications
- Offloads Image Processor Loads, provides scene details with Prog. ROI
- Application-specific Image Quality Selections with Performance/Power Trade-offs

End Products

- Autonomous Mobile Robots
- Autonomous Guide Vehicles (Drones)
- Video Doorbells
- AR/VR/MR Headsets
- Barcode Readers

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size (µm)	Output Interface	Color	Package Type
AR0234CSSC00SUD20		 	NEW	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	
AR0234CSSC00SUKA0-CP		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	ODCSP-83
AR0234CSSC00SUKA0-CP1		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	ODCSP-83
AR0234CSSC00SUKA0-CR		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	ODCSP-83
AR0234CSSC28SUD20		 	NEW	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	
AR0234CSSC28SUKA0-CP		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	ODCSP-83
AR0234CSSC28SUKA0-CP1		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	ODCSP-83
AR0234CSSC28SUKA0-CR		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Color	ODCSP-83
AR0234CSSM00SUD20		 	NEW	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	
AR0234CSSM00SUKA0-CP		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	ODCSP-83
AR0234CSSM00SUKA0-CP1		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	ODCSP-83
AR0234CSSM00SUKA0-CR		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	ODCSP-83
AR0234CSSM28SUD20		 	NEW	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	
AR0234CSSM28SUKA0-CP		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	ODCSP-83
AR0234CSSM28SUKA0-CP1		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	ODCSP-83
AR0234CSSM28SUKA0-CR		 	Active	CMOS	2.3	120	1/2.6 inch	Global Shutter	3.0 x 3.0		Mono	ODCSP-83

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
VSYNCS XVS FSYNCS	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

Cameras Applications

your BEST camera module partner



IMAGING DEVICES



Camera Reliability Test

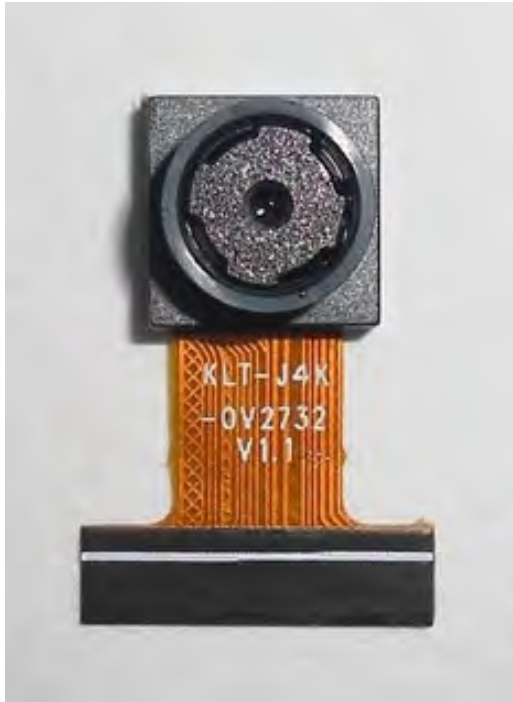
Reliability Inspection Item			Testing Method	Acceptance Criteria
Category		Item		
Environmental	Storage Temperature	High 60°C 96 Hours	Temperature Chamber	No Abnormal Situation
		Low -20°C 96 Hours	Temperature Chamber	No Abnormal Situation
	Operation Temperature	High 60°C 24 Hours	Temperature Chamber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



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

KLT Package Solutions

KLT Camera Module



Complete with Lens Protection Film



Tray with Grid and Space

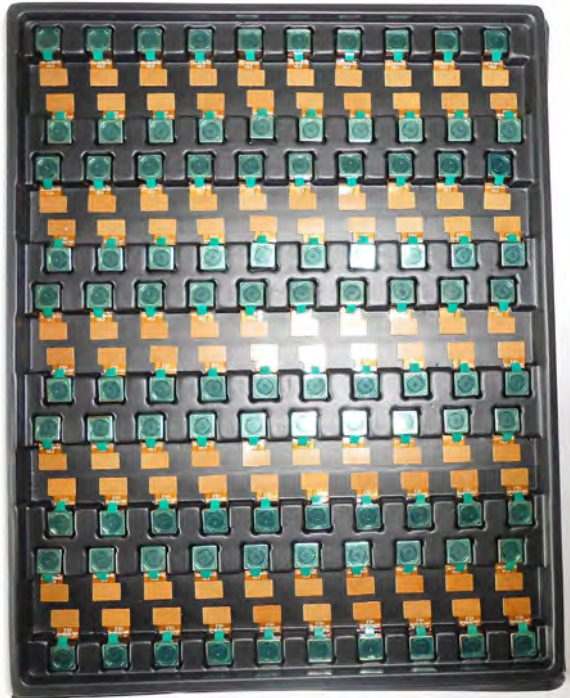


Place Cameras on the Tray



Camera Modules Package Solution

Full Tray of Cameras



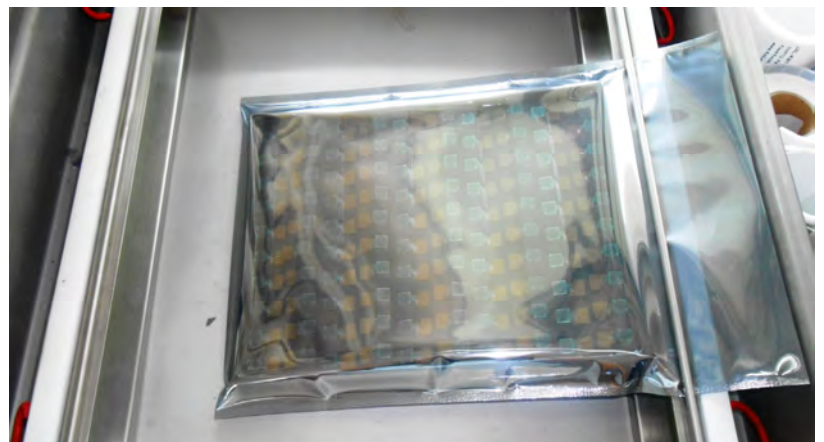
Cover Tray with Lid



Put Tray into Anti-Static Bag



Vacuum the Anti-Static Bag



Camera Modules Package Solution

Sealed Vacuum Bag with Labels

1. Model and Description 2. Quantity 3. Shipping Date 4. Caution



Large Order Package Solution

Place Foam Sheets Between Trays



Foam Sheets are Slightly Larger than Trays



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



Package in Small Box for Shipment



Place Small Boxes into Larger Box



Carbon Box Package Solution

Seal the Carbon Box

Final Package Labelled Box



Carbon Box Ready for Shipment

1. Delivery Address and Phone No. 2. Box No. and Ship Date 3. Fragile Caution



Sample Order Package Solution

Place Sample into Small Anti-Static Bag



Place Connectors into Small Ant-Static Bag



Sample Labels on the Small Bag

1. Camera Module or Connector Model 2. Shipping Date and Quantity 3. Caution



Connectors Large Order Package Solution

Connectors in a Wheel



Label Connectors in the Wheel



The Wheel is Perfectly Fitting the Box

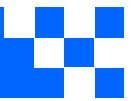


Connectors Box Ready for Shipment





CMOS CAMERA MODULES



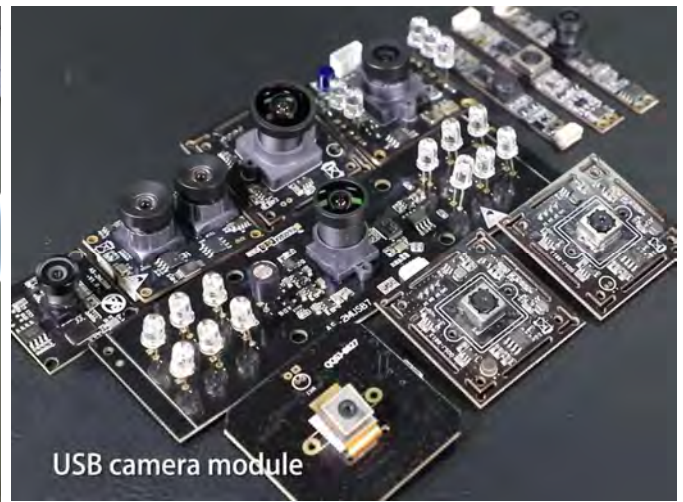
your BEST camera module partner

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 subsequent events.



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KLT Strength

Powerful Factory



Professional Service



Promised Delivery



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