

**OV6630 Color CMOS CIF (352 x 288) CAMERACHIP™**  
**OV6130 B&W CMOS CIF (352 x 288) CAMERACHIP™**

## General Description

The OV6630 (color) and OV6130 (black and white) CMOS CAMERACHIPS™ are single-chip video/imaging camera devices designed to provide a high level of functionality in a single, small-footprint package. Both devices incorporate a 352 x 288 image array capable of operating at up to 60 frames per second (fps) in QCIF mode. Proprietary sensor technology utilizes advanced algorithms to cancel Fixed Pattern Noise (FPN), eliminate smearing, and drastically reduce blooming. All required camera functions including exposure control, gamma, gain, white balance, color matrix, color saturation, hue control, windowing, etc., are programmable through the serial SCCB interface. Both devices can be programmed to provide image output in different 4-bit, 8-bit, and 16-bit formats.

## Features

- 101,376 pixels, 1/4" lens, CIF/QCIF format
- Progressive scan readout
- Data formats:
  - YCbCr 4:2:2
  - GRB 4:2:2
  - RGB Raw Data
- 8/16 bit video data:
  - ITU-601
  - ITU-656
  - ZV port
- Wide dynamic range, anti-blooming, zero smearing
- Electronic exposure/gain/white balance control
- Image enhancement - brightness, contrast, gamma, saturation, sharpness, windowing, etc.
- Internal/external synchronization
- Frame exposure/line exposure option
- 3.3-Volt operation, low power dissipation
  - < 20 mA active power
  - < 10 µA in power-save mode
- Gamma correction (0.45/0.55/1.00)
- SCCB programmable:
  - Color saturation, brightness, hue, white balance, exposure time, gain

## Ordering Information

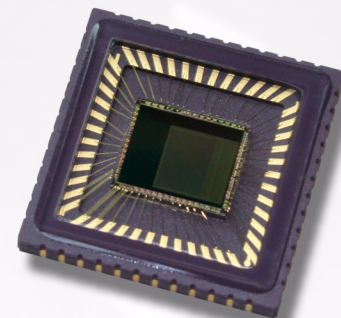
Product	Package
OV6630-C00A (Color)	CLCC-48
OV6130-C00A (B&W w/ microlens)	CLCC-48

## Applications

- Video Conferencing
- Video Phone
- Video Mail
- Still Image
- PC Multimedia

## Key Specifications

<b>Array Size</b>	<b>CIF</b>	352 x 288
	<b>QCIF</b>	176 x 144
<b>Pixel Size</b>		9 µm x 8.2 µm
<b>Image Area</b>		3.1 mm x 2.5 mm
<b>Maximum Frames/Sec</b>		Up to 60 fps
<b>Electronics Exposure</b>		Up to 500:1 (for selected fps)
<b>Scan Mode</b>		Progressive
<b>Gamma Correction</b>		0.45/0.55/1.00
<b>Min. Illumination (3000K)</b>	<b>OV6630</b>	< 3 lux @ f1.2
	<b>OV6130</b>	< 0.5 lux @ f1.2
<b>S/N Ratio</b>		> 48 dB (AGC off, Gamma = 1)
<b>Fixed Pattern Noise</b>		< 0.03% of V <sub>PEAK-TO-PEAK</sub>
<b>Dark Current</b>		< 0.2 nA/cm <sup>2</sup>
<b>Dynamic Range</b>		> 72 dB
<b>Power Supply</b>		3.0 to 3.6 VDC 5VDC/3.3VDC (DIO)
<b>Power Requirements</b>	<b>Active</b>	< 20 mA
	<b>Standby</b>	< 10 µA
<b>Package</b>		48 pin LCC



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**OmniVision Technologies**

**Resolution**

- 01 = Linear sensor
- 02 = 2 MegaPixel digital sensor
- 03 = 3 MegaPixel digital sensor
- 04 = 4 MegaPixel digital sensor
- 05 = 5 MegaPixel digital sensor/  
Low resolution analog sensor
- 06 = CIF digital sensor/  
Low resolution analog sensor
- 07 = VGA digital sensor/  
Full resolution analog sensor
- 08 = SVGA digital sensor
- 09 = SXGA 1.3 MegaPixel digital sensor
- 10 = High Dynamic Range (HDR) sensor

**Type**

(Analog vs. Digital, Color vs. B&W)

- 1 = B&W digital
- 4 = B&W analog
- 6 = Color digital
- 9 = Color analog

**Major Iteration of Chip**

**Minor Iteration of Chip**

- 0 = Color sensor with microlens
- 1 = B&W sensor with microlens
- 2 = Color sensor with microlens shift
- 3 = Sensor using CSP2 packaging
- 4 = Additional or custom features
- 5 = Additional or custom features
- 8 = SMIA-compliant sensor (except OV7648)

**Grade**

- A, B, or C
- V = Automotive grade

**Package Features**

- 0 = 48-pin
- 1 = 28-pin
- 2 = 24-pin
- 3 = 48-pin (large cavity CLCC)
- 4 = 16-pin
- 5 = 36-pin
- 6 = 22-pin
- 7 = 42-pin
- 8 = 40-pin

**If Package Type = G or W, then:**

- 0 = Chip probing
- 1 = No chip probing

**Chip Features**

- 0 = Digital sensor
- 1 = Analog NTSC sensor
- 2 = Analog PAL sensor
- L = Lead-free package

**If Package Type = G or W, then:**

- 0 = No backgrinding
- 1 = Custom
- 2 = Standard backgrinding (300 µm)

**Package Type**

- C = Ceramic
- P = Plastic
- K = Chip Scale Package (CSP)
- Q = Quad Flat Package (QFP)
- V = CSP2
- G = Die (for COB applications)
- W = Wafer

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