

OV9650 Color CMOS SXGA (1.3 MegaPixel) CAMERACHIP[™] with OmniPixel[™] Technology

General Description

The OV9650 CAMERACHIP[™] is a low voltage CMOS image sensors that provides the full functionality of a single-chip SXGA (1280x1024) camera and image processor in a small footprint package. The OV9650 provides full-frame, sub-sampled or windowed 8-bit/10-bit images in a wide range of formats, controlled through the Serial Camera Control Bus (SCCB) interface.

This product has an image array capable of operating at up to 15 frames per second (fps) in SXGA resolution with complete user control over image quality, formatting and output data transfer. All required image processing functions, including exposure control, gamma, white balance, color saturation, hue control, white pixel canceling, noise canceling, and more, are also programmable through the SCCB interface. In addition, OmniVision CAMERACHIPS use proprietary sensor technology to improve image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as fixed pattern noise, smearing, etc., to produce a clean, fully stable color image.

Features

- High sensitivity for low-light operation
- Low operating voltage for embedded portable applications
- Standard SCCB interface
- Supports SXGA, VGA, QVGA, QQVGA, CIF, QCIF, QQCIF, and windowed outputs with Raw RGB, RGB (GRB 4:2:2), YUV (4:2:2) and YCbCr (4:2:2) formats
- VarioPixel[™] method for sub-sampling formats (VGA, QVGA, QQVGA, CIF, QCIF, and QQCIF)
- Automatic image control functions including: Automatic Exposure Control (AEC), Automatic Gain Control (AGC), Automatic White Balance (AWB), Automatic Band Filter (ABF), and Automatic Black-Level Calibration (ABLC)
- Image quality controls including color saturation, hue, gamma, sharpness (edge enhancement), lens correction, white pixel canceling, and noise canceling

Ordering Information

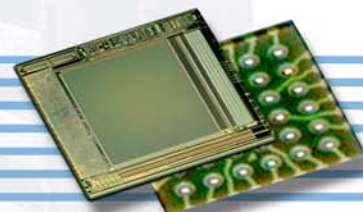
Product	Package
OV09650-KL1A (Color)	CSP-28

Applications

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

Key Specifications

	Active Array Size	1300 x 1028
Power Supply	Core	1.8VDC \pm 10%
	Analog	2.45 to 2.8 VDC
	I/O	2.5V to (V _{DD-A} +0.3V)
Power Requirements	Active	50 mW (15 fps, no I/O power)
	Standby	30 μ W
Temperature Range	Operation	-20°C to 70°C
	Stable Image	0°C to 50°C
	Output Formats (8-bit)	<ul style="list-style-type: none"> • YUV/YCbCr 4:2:2 • GRB 4:2:2 • Raw RGB Data
	Lens Size	1/4"
Maximum Image Transfer Rate	SXGA	15 fps
	VGA	30 fps
	QVGA, QQVGA, CIF	60 fps
	QCIF, QQCIF	120 fps
	Sensitivity	0.9 v/Lux-sec
	S/N Ratio	40 dB
	Dynamic Range	62 dB
	Scan Mode	Progressive
	Maximum Exposure Interval	1050 x t _{ROW}
	Gamma Correction	Programmable
	Pixel Size	3.18 μ m x 3.18 μ m
	Dark Current	30 mV/s at 60°C
	Well Capacity	28 K e
	Fixed Pattern Noise	<0.03% of V _{PEAK-TO-PEAK}
	Image Area	4.13 mm x 3.28 mm
	Package Dimensions	5095 μ m x 5715 μ m





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