

# OV9665 1.3 MPixel product brief



## ultimate, high-performance camera-on-a-chip

The OV9665 is a low voltage SXGA (1.3 MegaPixel) CMOS CameraChip™ sensor that incorporates the full functionality of a camera and image processor on a single chip, making it ideal for mobile applications. The OV9665 is a 1/5" format sensor that fits 1.3 megapixels into a VGA footprint.

Built on our highly advanced OmniPixel2™ architecture, the OV9665 enables the highest image quality, color fidelity and camera performance, while reducing common sources of image contamination, such as fixed pattern noise, and eliminating smearing.

The OV9665 provides full-frame, sub-sampled, scaled or windowed 8-bit/10-bit images in a wide range of formats, controlled through the serial

camera control bus (SCCB) interface. With an image array capable of operating at up to 15 frames per second (fps) in full SXGA (1280 x 1024) resolution, it offers 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 others, are also programmable through the SCCB interface.





## applications

- cellular and picture phones
- PC multimedia
- toys
- digital still cameras



# OV9665

## ordering information

- OV9665-VL9A  
(color, lead-free, CSP2-26)

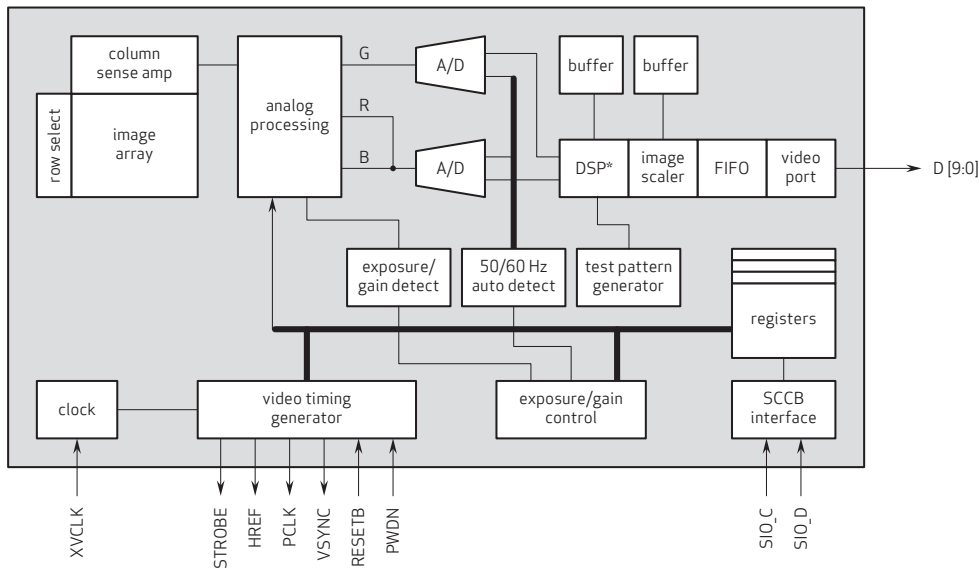
## product features

- high sensitivity for low-light operation
- low operating voltage for embedded portable applications
- standard SCCB interface
- VarioPixel® method for sub-sampling
- supports image sizes: SXGA, VGA, CIF, and any size scaling down from CIF to 40x30, and windowed outputs with Raw RGB, RGB565/555/444, YUV (4:2:2) and YCbCr (4:2:2) formats
- automatic image control functions including
  - Automatic Exposure Control (AEC)
  - Automatic Gain Control (AGC)
  - Automatic White Balance (AWB)
  - Automatic Black-Level Calibration (ABLC)
- image quality controls including: color saturation, hue, gamma, sharpness (edge enhancement), lens correction, white pixel canceling, noise canceling, and 50/60 Hz luminance detection

## product specifications

- array size: 1304 x 1036
- power supply
  - analog: 2.45 to 3.0VDC
  - I/O: 1.71V to 3.0V
- power consumption:
  - active: 80 mW typical (15fps, no I/O power)
  - standby: 15  $\mu$ A typical
- image area: 2608  $\mu$ m x 2072  $\mu$ m
- maximum exposure interval: 1052 x  $t_{row}$
- optical format: 1/5.5"
- pixel size: 2.0 $\mu$ m x 2.0 $\mu$ m
- package dimensions: 4485  $\mu$ m x 4985 $\mu$ m
- temperature range: -30 to +70°C
- maximum image transfer rate:
  - SXGA: 15 fps
  - VGA and downscaling: 30 fps

## functional block diagram



**note 1** DSP\* (lens shading correction, de-noise, white/black pixel correction, auto white balance, etc.)

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