

OV5610 Color CMOS QSXGA (5.17 MPixel) CAMERACHIP<sup>TM</sup> with OmniPixel<sup>TM</sup> Technology

# **General Description**

The OV5610 (color) CAMERACHIP<sup>TM</sup> is a high performance 5.17 mega-pixel CAMERACHIPS for digital still image and video camera products.

This device incorporates a 2592 x 1944 image array and an on-chip 10-bit A/D converter capable of operating at up to 4 frames per second (fps) in full resolution. Proprietary sensor technology utilizes advanced algorithms to cancel Fixed Pattern Noise (FPN), eliminate smearing, and drastically reduce blooming and dark current. The control registers allow for flexible control of timing, polarity, and CAMERACHIP operation, which, in turn, allows the engineer a great deal of freedom in product design.

## **Features**

- Optical black level calibration
- Video or snapshot operations
- Programmable/Auto Exposure and Gain Control
- Programmable/Auto White Balance Control
- Horizontal and vertical sub-sampling (4:2 and 4:2)
- High frame rate output mode
- Programmable image windowing/zooming/panning
- Variable frame rate control
- On-chip R/G/B Channel and Luminance Average Counter
- Internal/External frame synchronization
- Serial bus interface
- Power-on reset and power-down modes

# **Ordering Information**

| Product              | Package |
|----------------------|---------|
| OV05610-C03A (Color) | CLCC-48 |

# **Applications**

- Digital still cameras
- PC camera/dual mode
- Video conference
- Machine vision
- Security cameras
- Biometrics

# **Key Specifications**

| Array Size                 | QSXGA   | 2592 x 1944                    |  |
|----------------------------|---------|--------------------------------|--|
|                            | SXGA    | 1280 x 960                     |  |
|                            | VGA     | 640 x 480; 1280 x 480          |  |
|                            | HF      | 320 x 200; 1280 x 200          |  |
| Power Supply               |         | 3.3VDC / 1.8VDC ( <u>+</u> 5%) |  |
| Power<br>Requirements      | Active  | 40 mA                          |  |
|                            | Standby | 10 µA                          |  |
| Electronics<br>Exposure    | QSXGA   | Up to 1998:1                   |  |
|                            | SXGA    | Up to 978:1                    |  |
|                            | VGA     | Up to 488:1                    |  |
|                            | HF      | Up to 208:1                    |  |
| Output Format              |         | 10-bit digital RGB Raw data    |  |
| Lens Size                  |         | 1/1.8"                         |  |
| Lens Chief Ray Angle       |         | TBD                            |  |
| Max Image<br>Transfer Rate | QSXGA   | 4 fps                          |  |
|                            | SXGA    | 15 fps                         |  |
|                            | VGA     | 30 fps                         |  |
|                            | HE      | 70 fps                         |  |
| <b>Conversion Gain</b>     |         | 40 µV/e⁻                       |  |
| Dynamic Range              |         | 60 dB (due to ADC limitations) |  |
| Scan Mode                  |         | Progressive                    |  |
| Pixel Size                 |         | 2.775 μm x 2.775 μm            |  |
| Dark Current               |         | 10 mV/sec at 60°C              |  |
| Image Area                 |         | 7.33 mm x 5.44 mm              |  |
| Package Dimensions         |         | 14.22 mm x 14.22 mm            |  |

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