



## UXGA Resolution Digital Video CMOS Image Sensor

DATA BRIEF

### FEATURES

- 1600 x 1200 resolution (2 megapixel)
- 1/2 inch format lens compatible
- 3V3 supply
- I2C control
- On board 10 bit ADC
- On board audio pre-amplifier
- SLEEP mode (RESET pin Hi)
- On board 1.8V voltage regulator allows system implementation with single 3.3V power supply

### Video formats

The primary video output format of the VC700 is:

- 1612 x 1208 raw bayer video @ 20fps

User programmable line and frame format capability allows other formats, for example:

- Window of interest SVGA mode - 800 x 600 image size (40fps)
- SubSampled FFOV SVGA mode (40fps)

### Digital Interface

The main features of the digital interface to the sensor are:

- 48 MHz input clock
- 10-wire output video data bus
- 3 sync. pins (pixel clock, line sync and frame sync).
- A 2-wire I2C interface for controlling the operation of the sensor

### Image processing

The sensor includes capability to perform:

- Dark calibration
- FPN correction
- Defect correction

### APPLICATIONS

- Digital Still Cameras
- Barcode Reading

### TECHNICAL SPECIFICATIONS

|   |  |                  |        |
|---|--|------------------|--------|
| Image size                                | 1612 x 1208 (Raw Bayer)<br>1600 x 1200 (After color proc.<br>in coprocessor) |                  |        |
| Pixel size                                | 4μm x 4μm  |                  |        |
| Array size                                | 6.48mm x 4.864mm   |                  |        |
| Exposure range<br>(controlled externally) | 2.5μs to 50ms (@20fps)<br>(longer with slower frame rates)                   |                  |        |
| Max Frame rate<br>(UXGA format)           | 20fps  |                  |        |
| Clock frequency                           | 48MHz (single-ended)   |                  |        |
| Output format                             | 10 bit parallel  |                  |        |
| Output data rate                          | 48MHz (UXGA)<br>24MHz (SVGA)   |                  |        |
| Analogue gain                             | 0-24 dB  |                  |        |
| Signal/Noise ratio                        | 41dB   |                  |        |
| Supply voltage                            | 3.3V nominal (3.15V to 3.6V)   |                  |        |
| Supply current<br>(20fps UXGA)            |  | Digital          | Analog |
|   | Active   | 50mA             | 20mA   |
|   | Sleep  | < 150uA (no clk) |        |
| Operating temperature                     | 0°C - 40°C   |                  |        |
| Package type                              | 48CLCC   |                  |        |

### PART NUMBERING

Table 1. Order Codes

| Part Number | Description            |
|-------------|------------------------|
| VC5700V048  | Monochrome sensor      |
| VC6700V048  | Bayer colorised sensor |

## REVISION HISTORY

**Table 2. Revision History**

| Date         | Revision | Description of Changes |
|--------------|----------|------------------------|
| October 2004 | 1        | First Issue            |

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