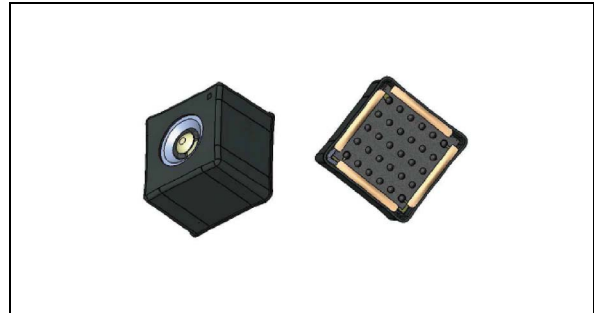


Ultra small reflowable UXGA camera module

Data Brief

Features

- 2 megapixel resolution sensor (1600 x 1200)
- High quality lens
- Compact size: 5.0 mm x 5.0 mm x 3.8 mm
- Lead-free reflowable BGA packaging
- SMIA 1.0 profile 2 compatible
- Video data interface - CCP 2.0 maximum
- 640 MHz
- Command interface - CCI
- Analog power supply from 2.4 V to 2.9 V
- Digital power supply from 1.7 V to 2.9 V
- On-board 10-bit ADC
- Integral EMC shielding and EMI reduction techniques
- Ultra low power standby mode
- On-chip PLL
- Smooth frame rate control
- Defect correction
- 4 channel anti-vignette



Description

The VW6754 lead free Through Silicon Via BGA reflowable 2 megapixel camera module is designed for use across a range of mobile phone handsets and accessories. It is suitable for high quality still camera function and also supports video modes. The camera silicon device is SMIA 1.0 profile 2 compliant and is capable of streaming raw bayer 2 megapixel images at up to 30 fps. The VW6754 supports the CCI control and CCP 2.0 data interfaces. The camera is attached to the application motherboard using standard reflow process techniques.

As different phone platforms have different baseband processors with varying capabilities, a software implementation of the required image processing algorithms on the phone baseband may not be possible. In such cases, a separate hardware accelerator (STV0986) or application engine (STn8815) device can be incorporated in the phone system to run the algorithms in hardware. The specifications of these devices are available in separate documents.

The module design is optimized for both footprint and height. The multi-element lens provides excellent image quality at focus distances from 50 cm to infinity. The product is lead free. VW6754 offers ultra low power consumption in standby mode consuming less than 30 μ W.

1 Overview

Figure 1. Application diagram

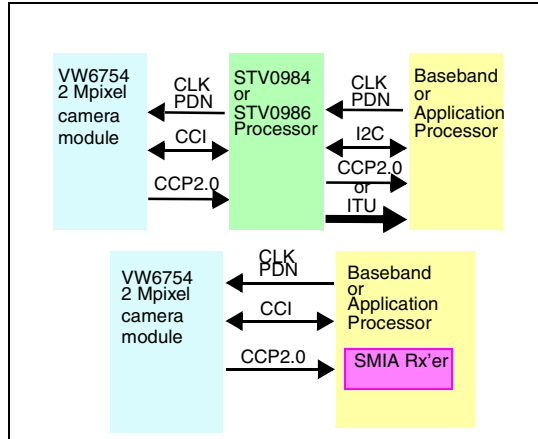


Figure 2. Block diagram

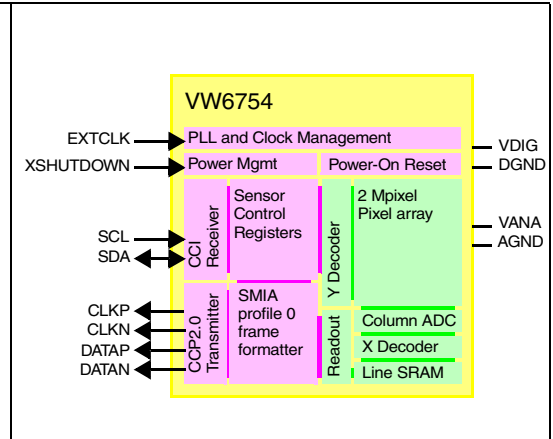


Table 1. Technical specifications

Parameter	Descriptions
Pixel resolution	1600 x 1200 (UXGA)
Sensor technology	ST IMG175 process
Pixel size	1.75 μm x 1.75 μm
Exposure control	+ 81 dB
Analog gain	+ 24 dB (max)
Dynamic range	60 dB
Signal to noise	37 dB (@ 100 lux)
Minimum illumination ⁽¹⁾	< 10 lux
Supply voltage	Analog: 2.4 V to 2.9 V
	Digital: 1.7 V to 2.9 V
Average power consumption 30fps	<200 mW
Package size (lxwxh)	5.0 mm x 5.0 mm x 3.8 mm
Lens	51° +/- 2 HFOV F/2.8
TV distortion	Typical < 1.0%
Module relative illumination ⁽²⁾	Typical 50% +/-2%
Package type	BGA
System attach	Lead-free reflowable soldering process

1. At minimum illumination the image is correctly exposed with D65 illumination on 18% grey card at 30fps

2. With anti-vignette function

2 Ordering information

Table 2. Order code

Order code	Package	Packing
VW6754R0Y6/TR	BGA 5.0 mm x 5.0 mm x 3.8 mm	Tape and reel

3 Revision history

Table 3. Document revision history

Date	Revision	Changes
07-Feb-2008	1	Initial release.

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