



truefocus™

Wavefront Coding™ product brief



available in
a lead-free
package

defining the future of mobile imaging

TrueFocus™ is a revolutionary new development in camera phone technology offering a world-class true point-and-shoot capability where the entire image is always in focus and ready for instant one-click shooting. TrueFocus™ is based on Wavefront Coding™ technology which is a method of optically encoding images through specialized optics and decoding them with a dedicated signal processor (OV630) to gain enhanced imaging and optical performance.

TrueFocus™ brings optics into the 21st Century and up to speed with Moore's Law, enabling continued improvements to the user experience of imaging systems while maintaining or reducing cost.

Besides improved user experience, TrueFocus™ cameras address a number of critical issues found in traditional auto-focus (AF) camera solutions for camera manufacturers and systems developers. Replacing mechanical parts with snap fit lenses, which do not require focusing, significantly eases sourcing and manufacturing, saves cost and improves drop test related reliability issues. Wavefront Coded lenses can be made in plastic and are available through major lens manufacturers at similar cost to classical lenses. Without moving parts, TrueFocus™ also decreases power requirements and brings reliable performance under extreme temperature conditions.

TrueFocus™ camera systems consist of a Wavefront Coded lens, an OV3632 3-megapixel CMOS image sensor, and an OV630 TrueFocus™ signal processor. Modules are available in a 8.0 x 8.0 x 6.0 mm footprint, which is smaller than the AF modules currently available.

applications

- camera phones



ordering information

- OV03632-VL5A (color, CSP2-36)
- OV0630-LB10 (BGA-64)

OV3632 specs 3.2 megapixel sensor

- **power supply:**
analog: 2.8VDC + 5%
core: 1.8VDC + 5%
I/O: 1.7 - 3.3V
- **output format:**
10-bit digital RGB raw data
- **lens size:** 1/3"
- **power requirements:**
active: 55mA
standby: 20 μ A
- **output format:**
10-bit digital RGB raw data
- **pixel size:** 2.2 μ m x 2.2 μ m
- **image area:** 4.54 mm x 3.41 mm
- **package dimensions:**
6085 μ m x 6315 μ m

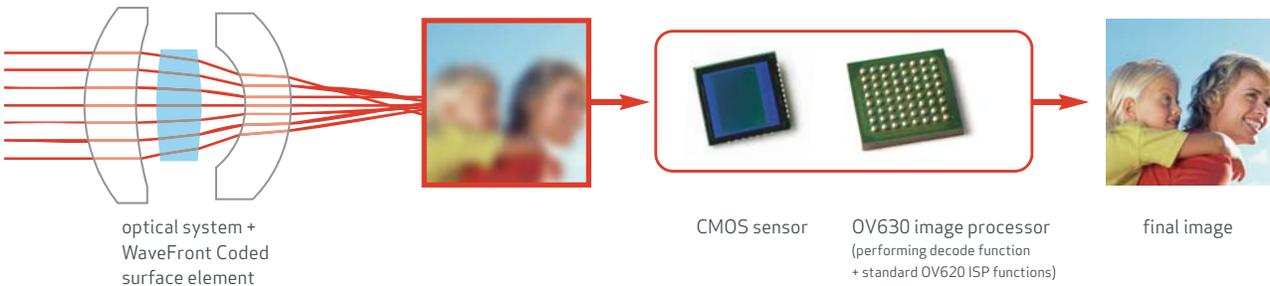
OV630 specs image processor

- **power supply:**
core: 1.2V
I/O: 1.8V / 2.5V
- **regulator input:** > 1.8V
- **power requirements:**
active: 200mA
standby: 25 μ A after cut
CORE1 power
- **temperature range:**
0 to 70 °C
- **package dimensions:**
7mm x 7mm BGA

the benefits of TrueFocus™ technology

- true point-and-shoot capability
- significantly enhanced depth of field: everything in focus
- no autofocus lag: always in focus
- increase the S/N ratio by lowering the F number, at the same time increase overall depth of field
- relaxed design and mechanical tolerances allow plastic optics and ease of assembly (snap fit lens systems possible)
- TrueFocus™ shifts cost of optics and mechanics to silicon enabling cost reductions following Moore's Law
- no mechanical parts needed for autofocus
- low power requirements
- ultra-small module design: 8.0 x 8.0 x 6.0mm
- increased manufacturing yields
- available now for sampling

process illustration



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