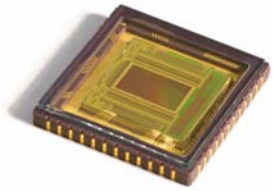
AltaSens
Capture the Ultimate Image™

AltaChrome A3372E3-4T



Next-Generation High Definition CMOS Imaging Sensor

Diagonal 6 mm (Type 1/3), 2.1 Mpixel (1920 x 1080) at 60p in RGB

AltaChrome™ is next-generation, 12-bit imaging System-on-Chip (iSoC) technology that offers the highest HDTV image quality at the maximum video rate, lowest power, and lowest random noise currently available.

Key Applications

- High-Definition Videoconference
- High-Resolution IP Network Solutions
- High-Definition Surveillance

Key Features

- New, Breakthrough AltaChrome™ Technology for Superior Image Quality
- Windowing Support for Multiformat HD Video
- True 60-fps Frame Rate in Progressive Scan
- Vertical Skipping for Higher Frame Rates
- 14-bit iSoC for Optimum 12-bit Imaging
- Programmable Dual- or Single-Port Output Interface
- BitsDReam™ Technology for High Dynamic Range Images

AltaChrome: Next-Generation Technology from AltaSens

Introduced on the AltaChrome A3372E3-4T, AltaSens' unique AltaChrome pixel technology delivers the lowest-noise iSoC architecture in existence. The result is the highest-quality resolution and the best signal-to-noise ratio (SNR), for the most lifelike HD images regardless of ambient conditions.

Optimum Video Resolution in Low Light

The 1/3-inch optical size of the AltaChrome A3372E3-4T image sensor allows uncompromised image quality at 1080p, thanks to its 2.7-µm pixel pitch and AltaChrome technology.

Full 1080 Resolution at 60 fps

The AltaChrome A3372E3-4T scans progressively up to a true 60 fps to produce video that is devoid of artifacts. Programmable windowing enables multiple formats and proportionally higher frame rates. Sensor operations are compatible with the SMPTE 274 standard.

Superior On-Chip Reduction of Image Artifacts and Noise

The AltaChrome A3372E3-4T contains automatic on-chip correction strategies and algorithms to eliminate artifacts that are unavoidably introduced by the analog components on a sensor. These corrections represent the third generation of innovations in digital iSoC design that AltaSens has developed to enhance image quality without increasing the cost, power consumption, or complexity of its sensors. The industry's deepest internal signal processing delivers a true 12-bit data stream to express the full dynamic range of an image, with functions to extract maximum image quality and provide smooth image texture, including:

- Automatic Black Clamp for real-time calibration of black values in every frame.
- Automatic Column Fixed Pattern Noise (FPN) Suppression to eliminate variation among individual columns.
- Line Noise Suppression to remove instantaneous and systematic variation among pixel rows.

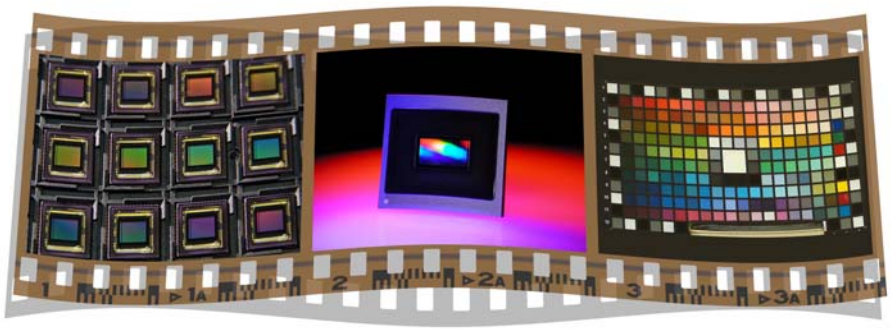
AC-3372-PF0110-02

AltaChrome A3372E3-4T

Pixel Array Characteristics	
Pixel Size	2.7 µm x 2.7 µm
Dark Current (60°C)	50 e/pixel/s
Sensitivity	11,500 e/lux/s[a]
SNR	59dB (2000 lux, f4, 200%, 60p)[a.]
Color Filter	RGB Bayer Pattern
16:9 Array Format (pixels)	1920 (H) x 1080 (V)
16:9 Array Format	6 mm diagonal (Type 1/3)
Full Resolution (pixels)	1968 (H) x 1096 (V)
1080p Frame Rate	60 fps

Sensor Characteristics	
Shutter Mode	• Electronic Rolling Shutter (ERS) • Global Reset (GR)
ADC Resolution	12-bit
Data Rate	148.5 Mp/s typical
Power Consumption	662 mW typical at 74.25 MHz input clock, 1080p60 mode
Analog Supply	3.1 to 3.6 V, typical 3.3 V
Digital Core Supply	1.8 V ± 10%
Digital Input/Output Interface	• Raw RGB stream • Dual-port output (2 x 12 bits) • Optional single-port output • 1.8 V CMOS level
Packaging	Thermally enhanced 48-pin CLCC
Operating Temperature Range (Measured at Junction)	-20°C to 60°C

a. Green channel, 3200K and CM500S IR cut filter



All AltaSens image sensors are lead-free and comply with the Restriction of Hazardous Substances (RoHS) directive.

*To order the AltaChrome A3372E3-4T, use the part number **A3372E3**.*

AltaChrome iSoC sensor features and specifications are subject to change without notice.

AltaChrome iSoCs, like other integrated circuits, are susceptible to damage by electrostatic discharge (ESD), which may damage or degrade a sensor's overall performance.

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