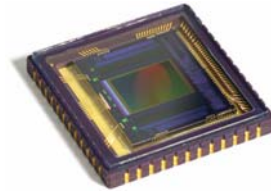



AltaChrome A5262E-4T


Next-Generation CMOS Digital Imaging Sensor for High-Definition Dual-Mode Camcorders

Diagonal 6.40 mm (Type 1/2.8), 4.5 Mpixel (2448 x 1840) at 30p

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

Key Applications

- Dual-Mode Camcorders
- Digital Still Cameras (DSC)

Key Features

- New, Breakthrough AltaChrome™ Technology for Superior Image Quality
- Windowing Support for Multiformat HD Video
- 4.5-Mpixel DSC Resolution
- True 30-fps Frame Rate in Full Resolution Using Progressive Scan
- True 1920x1080 HD Resolution at 60 fps
- Vertical Subsampling for Higher Frame Rates
- 14-bit iSoC for Optimum 12-bit Imaging
- BitsDReam™ Technology for High Dynamic Range Images

AltaChrome: Next-Generation Technology from AltaSens

Introduced on the AltaChrome A5262E-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 DSC Resolution with Uncompromised HDTV Video Quality

The Type 1/2.8 optical size of the AltaChrome A5262E-4T image sensor allows uncompromised image quality at 1080p while supporting 4.5-Mpixel DSC snapshot functionality, thanks to its 2.09- μ m pixel pitch and AltaChrome technology.

Full 4.5 Mpixel Resolution at 30 fps

The AltaChrome A5262E-4T scans progressively up to a true 30 fps to produce images that are devoid of artifacts. Programmable windowing enables multiple HDTV video formats and proportionally higher frame rates. HD video operations are compliant with the SMPTE 274 standard.

Superior On-Chip Reduction of Image Artifacts and Noise

The AltaChrome A5262E-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:

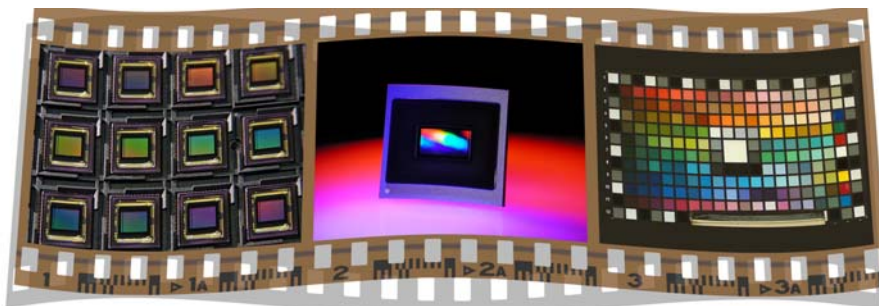
- Automatic Black Clamp for real-time calibration of black values in every frame.
- Automatic Column Fixed Pattern Noise (FPN) Suppression to eliminate variation among individual columns.
- Line Noise Suppression to remove instantaneous and systematic variation among pixel rows.

Pixel Array Characteristics	
Pixel Size	2.09 μm x 2.09 μm
Dark Current (60°C)	50 e/pixel/s
Pixel Dynamic Range	61 dB
Sensitivity ^a	3600 e/lux/s
Minimum Low Light (60p)	<1 lux
SNR (2000 lux, f4, 200%, 60p)	49 dB
Color Filter	RGB Bayer Pattern

a. Green pixel response to 3200K light source with CM500S IR cutoff filter.

Examples of Supported Formats			
Format	Optical Format	Resolution	Frame Rate
Full Resolution: 2432 (H) x 1824 (V)	Type 1/2.8	4.5 Mpixel	30 fps
HDTV with 13% EIS: 2176 (H) x 1216 (V)	Type 1/3.3	2.6 Mpixel	60 fps
HDTV: 1920 (H) x 1080 (V)	Type 1/4	2.1 Mpixel	72 fps

Sensor Characteristics	
Shutter Mode	<ul style="list-style-type: none"> Electronic Rolling Shutter (ERS) Global Reset (GR)
ADC Resolution	12-bit
Data Rate	<ul style="list-style-type: none"> Maximum: 180 Mpixels/s Typical: 148.5 Mpixels/s
Power Consumption	780 mW @ 90 MHz input clock, VDDA = 3.1 V
Analog Supply	3.1 V to 3.6 V, Typical 3.3 V
Digital Core Supply	1.8 V \pm 10%
Digital Input/Output Interface	<ul style="list-style-type: none"> Raw RGB Stream Dual-Port Output: 2 x 12 bits 2.5 V CMOS Level
Packaging	Thermally Enhanced 48-pin CLCC
Operating Temperature Range (Measured at Junction)	-20°C to 60°C



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

To order the AltaChrome A5262E-4T, use the part number **A5262E**.

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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