

Canon Awarded for Most Innovative CMOS Image Sensor Technology

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Semiconductor Insights (SI), the leader in technical and patent analyses of integrated circuits and structures, today announced that it has awarded Canon the 2004 INSIGHT Award for Most Innovative [CMOS Image Sensor Technology](#). The specific device analyzed by SI was the sensor found in the EOS 10D camera, which has achieved critical market success and forms the foundation for Canon's Single Lens Reflex (SLR) product line.

"Canon's 10D camera is one of the first high end SLRs to use a CMOS image sensor", said Lluís Paris, Director of TECHinsights for Semiconductor Insights. "Canon has been able to achieve the sensitivity of a CCD without introducing the noise typical of a CMOS process. In addition, a CMOS process offers a distinct cost and power advantage over competing CCD plays."

Image sensors capture pictures as light falling on each pixel and record it as electrical charges. Stray electrical charges captured by the sensor are referred to as noise. All image sensors experience some noise, especially at long exposures. However, noise in CMOS image sensors has traditionally inhibited their use in higher quality cameras. Canon has resolved many of these issues with its innovative image sensor and EOS 10D camera. The EOS 10D incorporates a 6.3 megapixel CMOS sensor offering the same picture area (15.1 x 22.7mm) and aspect ratio (2:3) as previous generations, but delivering superior image quality. Also, a new amplifier circuit boosts the S/N (signal to-noise) ratio to provide an extended sensitivity range from ISO 100 to 3200 and superior noise

reduction at all ISO speed settings.

SI recently completed a teardown of Canon's EOS 10D camera, along with detailed circuit and structural analyses of the image sensor. "Our analysis revealed the secret of the image sensor's enhanced image quality to be peripheral circuitry improvements and a refined manufacturing process," said Paris. "The EOS 10D camera also applies a novel approach to address the noise problem. It stores the image, clears the sensor, and then measures the pattern of noise in the sensor and subtracts this from the image file. By following a system approach, Canon is able to take advantage of a low cost, low power CMOS process, without sacrificing image quality."

"Canon is committed to being a leader in the digital imaging market, and we are pleased to be recognized by Semiconductor Insights for our innovative CMOS technology," said Yukiaki Hashimoto, senior vice president, Consumer Imaging Group, Canon U.S.A. "The image sensing technology used in our EOS 10D camera provides the platform from which to expand our leadership position in the digital still camera market."

In addition to the EOS 10D camera, the award-winning CMOS sensor technology is incorporated into Canon's EOS-Digital Rebel, EOS-1Ds and the EOS- 1D Mark II.

For a free Insights report on the Canon 10D Image Sensor, please visit www.semiconductor.com .

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