



OS05B

5-megapixel product brief

5-Megapixel Image Sensor for Professional and High-End Consumer Security Cameras

The OS05B CMOS image sensor, which combines the best-in-class pixel technology and quantum efficiency (QE) in a 5-megapixel (MP) design for professional and high-end consumer security cameras, such as industrial and factory surveillance systems, webcams, and high-end baby monitors. The OS05B has a 1/2.78-inch optical format and its 2.0-micron BSI pixel is based on the PureCel®Plus technology. It also features OMNIVISION's Nyxel® near-infrared (NIR) technology for crisp, clear images in low-light conditions.

The OS05B has selective conversion gain – high conversion gain increases sensitivity and reduces the readout noise level while achieving optimum SNR under low-light conditions, and low conversion gain achieves a higher full well capacity in bright conditions. It captures high-resolution video at 60 frames per second with two-exposure staggered HDR. The OS05B supports MIPI and LVDS interfaces.

Find out more at www.ovt.com.



- OS05B10-A45A-001A (color, lead-free)
45-pin CSP

Applications

- security cameras
- action cameras
- high resolution consumer cameras

Technical Specifications

- active array size:** 2592 x 1944
- maximum image transfer rate @ 10-bit:**
 - 2592 x 1944: 60 fps
 - 1920 x 1080: 80 fps
 - 1280 x 720: 240 fps
 - 640 x 480: 360 fps
- power supply:**
 - core: 1.2V
 - analog: 2.8V
 - I/O: 1.8V
- power requirements:**
 - active: 216.5 mW (typical)
 - XSHUTDOWN: <5 μ A
- temperature range:**
 - operating: -30°C to +85°C junction temperature
 - stable: -10°C to +60°C junction temperature
- output formats:** 10/12-bit RGB RAW
- lens size:** 1/2.78"
- lens chief ray angle:** 11° linear
- scan mode:** progressive
- pixel size:** 1.998 μ m x 1.998 μ m
- image area:** 5210.784 μ m x 3916.08 μ m

Product Features

- programmable controls for:
 - frame rate
 - mirror and flip
 - cropping
 - windowing
- supports output formats:
 - 12-bit/10-bit RAW RGB
- supports images sizes:
 - 5MP (2592 x 1944)
 - 1080p (1920 x 1080)
 - 720p (1280 x 720)
 - VGA (640 x 480)
- supports 2x2 binning
- standard serial SCCB interface
- up to 4-lane MIPI serial output interface (supports maximum speed up to 1500 Mbps/lane * 2-lane, or 1200 Mbps/lane * 4-lane)
- staggered HDR RAW data output
- programmable I/O drive capability
- built-in temperature sensor
- image quality controls:
 - defect pixel correction
 - automatic black level calibration

Functional Block Diagram

