

GMAX3412 Product Flyer



12MP GLOBAL SHUTTER CMOS IMAGE SENSOR

GMAX3412 is a 1.1" optical format CMOS image sensor with 4096 x 3072 effective pixels with frame rates up to 128/60 fps in 10/12-bit mode with sub LVDS interface and 30 fps over the alternative 4 MIPI D-PHY channels. Based on a high-performance 3.4 μm charge domain global shutter pixel, **GMAX3412** achieves a max full well capacity of 10 ke⁻ and min dark noise of 1.5 e⁻, delivering max 68.8 dB linear dynamic range. Red Fox technology delivers QE of 75% @ 540 nm, and a NIR QE of 33% @850 nm. **GMAX3412** is housed in 176 pin ceramic LGA package, 22.93 mm x 19.39 mm outer dimensions, and pin-compatible to **GMAX3405**.

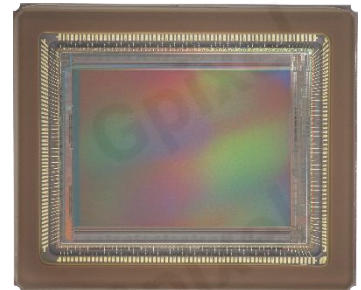
GMAX3412 is configurable through I2C or SPI, and supports features such as multislope HDR and short exposure time modes making it an ideal solution for an easy integration into cost-sensitive applications in machine vision, industrial bar code reading, logistics, and traffic.

Key Features

- 12MP resolution
- Charge domain electronic global shutter
- High speed and good PLS and angular response
- NIR enhance
- Multi-slope HDR
- One Time Programmable(OTP) Memory

Applications

- Machine Vision
- Logistics Bar Code Readers
- Intelligent Traffic System (ITS)



Sensor Specifications

Resolution	4096 (H) x 3072 (V)	Optical format	1.1"
Pixel size	3.4 μm x 3.4 μm	Photo-sensitive area	14.0 mm x 10.5 mm
Shutter type	Global shutter	Peak QE	75% @ 540nm, 33% @ 850nm
Full well capacity	10 ke ⁻ @ 12-bit and 1x PGA gain 8 ke ⁻ @ 10-bit and 1x PGA gain	Max. Dynamic Range	68.9 dB
Dark noise	3.6 e ⁻ @ 1x PGA gain 1.5 e ⁻ @ 16x PGA gain	Max. SNR	40 dB
Parasitic Light Sensitivity	-88 dB (@530 nm, F#8.9)	Max. FPS	128 fps @LVDS @ 10 bit 60 fps @LVDS @ 12 bit 30 fps @ MIPI @ 12 bit
Output format	16 pairs of Sub-LVDS 4 lanes of MIPI	Channel multiplexing	16/14/12/10/8/6/4/2/1 @ Sub-LVDS 4/2/1 @ MIPI
ADC	10/12 bit	Max. Data rate	19.2 Gbps @Sub-LVDS 4.8 Gbps @ MIPI
Chroma	Mono & Color	Power consumption	< 1.5 W
I/O voltage	3.6V for pixel, 3.3V for analog, 1.8V - 3.3V for IO, 1.2V for digital	Package	176 pins LGA 22.93 mm x 19.39 mm

Ordering Information

Sensor Part No.

GMAX3412-AVM-NLV-BUD

Monochrome, 128 fps @ 10bit LVDS, 60 fps @ 12bit LVDS, 30 fps @ 12bit MIPI, Demo grade

GMAX3412-AVC-NLV-BUD

Bayer RGB, 128 fps @ 10bit LVDS, 60 fps @ 12bit LVDS, 30 fps @ 12bit MIPI, Demo grade

Demo kit Part No.

LBW-GMAX3412S-U3V

GMAX3412 demo kit, U3V interface.

Contact Gpixel

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