

GMAX3412

12 MP GLOBAL SHUTTER 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 9 ke^- and min dark noise of 1.8 e^- , delivering max 67.9 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 pins 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 and Benefits

- ▶ 12 MP Resolution
- ▶ Charge Domain Electronic Global Shutter
- ▶ High Speed and Good PLS and Angular Response
- ▶ NIR Enhance
- ▶ Multi-Slope HDR
- ▶ One Time Programmable(OTP) Memory

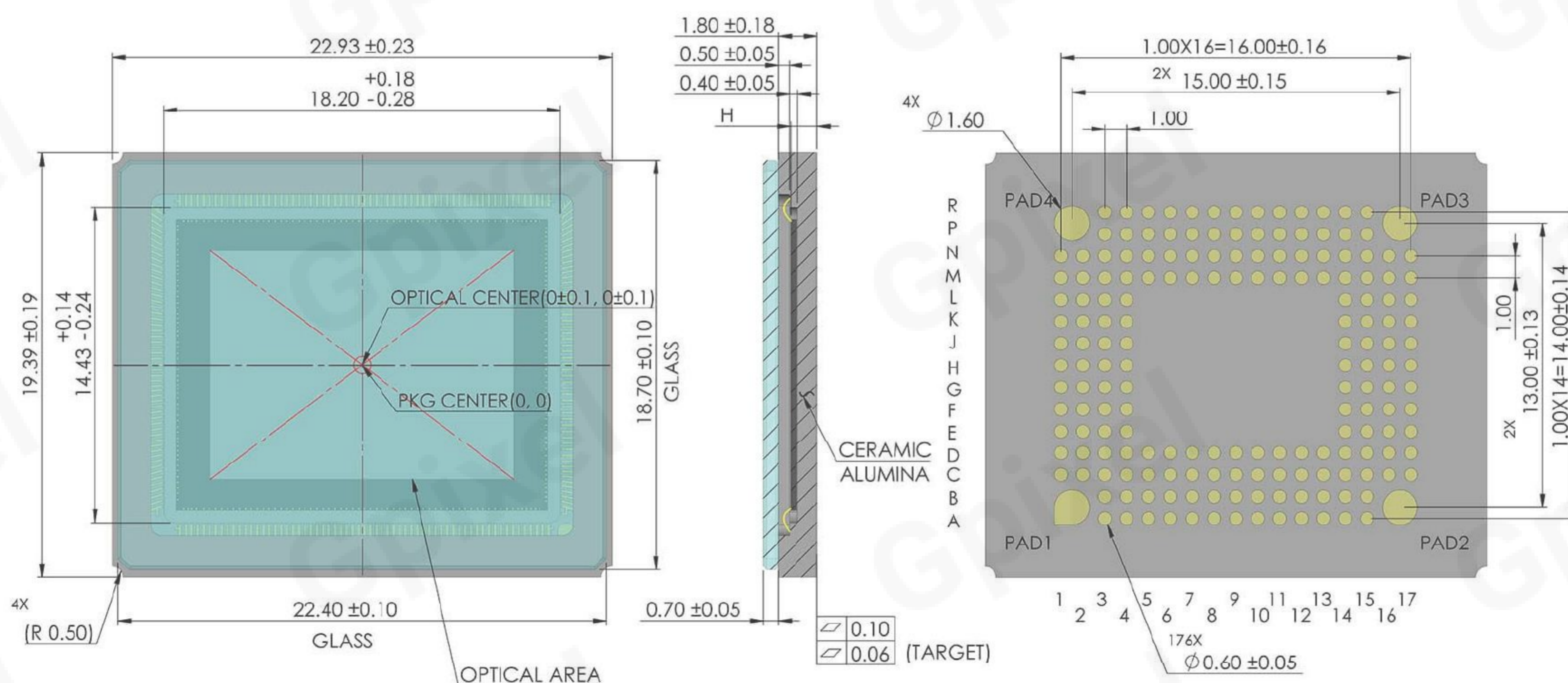
Application

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

Specifications

Nr of Active Pixels	4096(H) x 3072(V)	Optical Format	1.1" / 17.5 mm
Pixel Size	3.4 μm x 3.4 μm	Photosensitive Area	14.0 mm x 10.5 mm
Shutter Type	Global Shutter	Parasitic Light Sensitivity	- 88 dB
Peak QE	75% (540 nm)	Angular Response	> 15° (80% Response)
Full Well Capacity	9.0 ke ⁻ (12 bit,PGA gain x1.0) 7.6 ke ⁻ (10 bit,PGA gain x1.0)	Temporal Noise	1.8 e ⁻ (12 bit,PGA gain 12.19x) 7.8 e ⁻ (10 bit,PGA gain 1.0x)
Max. SNR	39.5 dB	Dynamic Range	67.9 dB
Dark Current	81.6 e ⁻ /pixel/s (58.6°C)	ADC	10/12 bit
Max Frame Rate	150 fps	Output Format	16 ch Sub-LVDS 4 lanes MIPI
Power Consumption	1.7 W	Max. Data Rate	20.48 Gbps
Supply Voltage	3.3 V/3.6 V (analog) 1.8 V-3.3 V (IO) 1.2 V (digital)	Channel Multiplexing	16/14/12/10/8/6/4/2/1 (Sub-LVDS) 4 (MIPI)
Chroma	Mono (NIR enhanced) RGB Color	Package	176 pins LGA (22.93 mm x 19.39 mm)

Package Drawing



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