

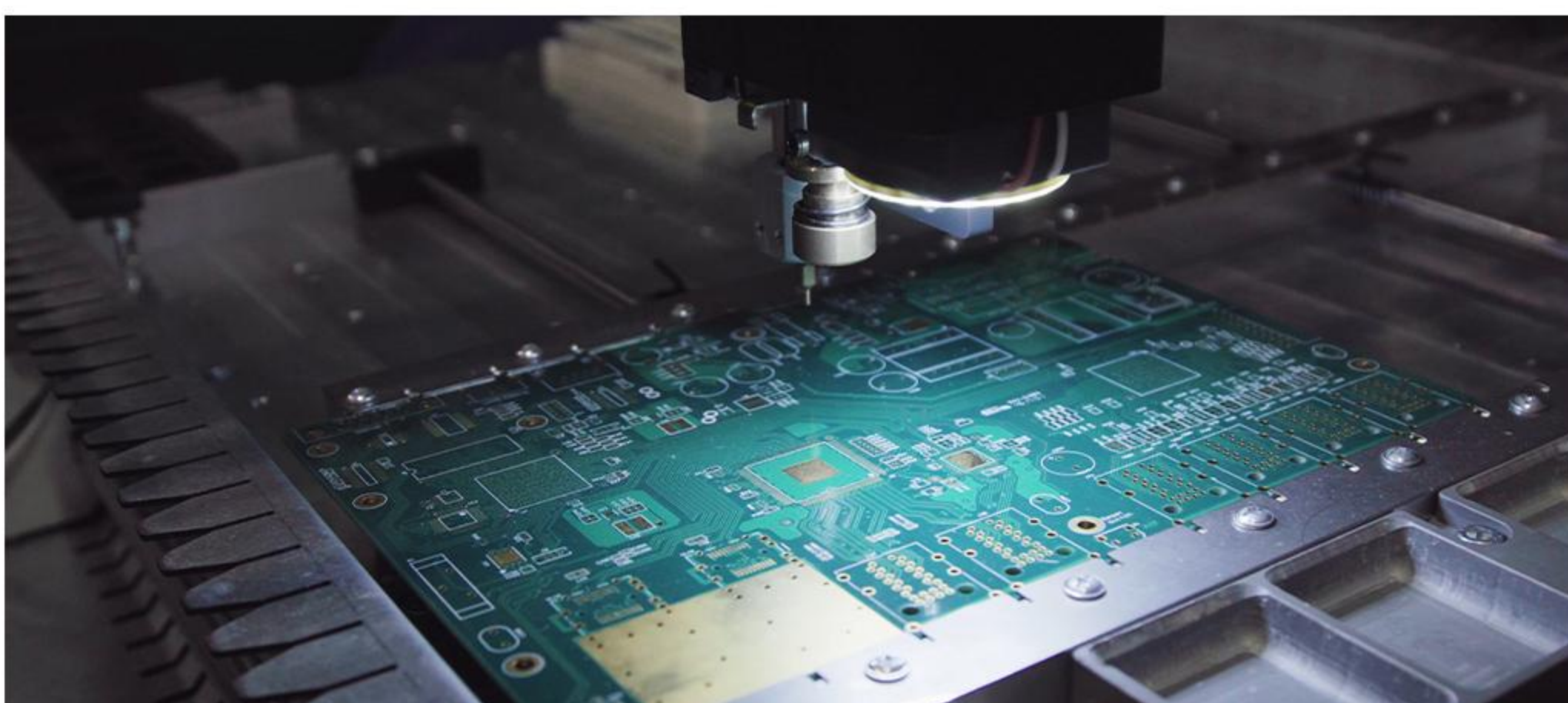
GSPRINT5514BSI

5.5 μm 14 MP HIGH SPEED CMOS IMAGE SENSOR

GSPRINT5514BSI features 4608 x 3072 pixels, each 5.5 μm square – a 4/3 aspect ratio 4k sensor compatible with APS-C optics. With 10-bit output GSPRINT5514BSI achieves 670 frames per second. In 12-bit mode the sensor outputs 350 fps.

Using backside illumination technology, the sensor achieves 83% quantum efficiency (510 nm) and 17% (200 nm) for UV applications. The sensor offers dual gain HDR readout, maximizing 15 ke^- full well capacity with a minimum 2.0 e^- noise to achieve an outstanding 78.2 dB of dynamic range. Analog 1x2 binning increases the full well capacity to 30 ke^- .

Up to 8 vertically oriented regions of interest can be defined to operate the sensor at increased frame rates. The image data is output via 96 sub-LVDS channels at 1.2 Gbps. For applications in which the maximum frame rate is not required, multiplexing modes are available to reduce the number of output channels by any multiple of two.



Key Features and Benefits

- ▶ Back Side Illuminated (BSI) Global Shutter pixels
- ▶ High Sensitivity
- ▶ High Speed: up to 670 fps (10 bit)
- ▶ 83% QE (510 nm)

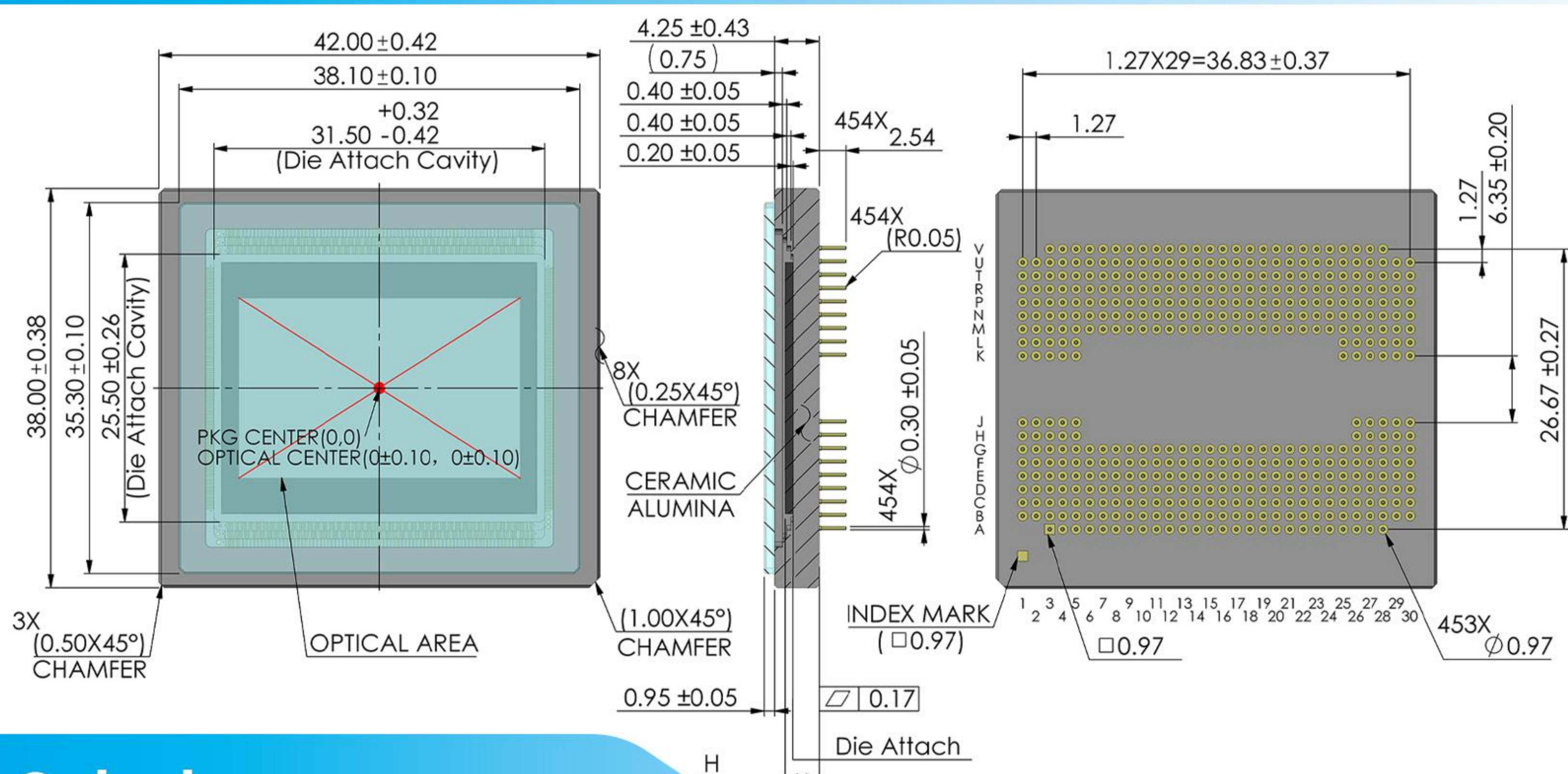
Applications

- ▶ Automation & Inspection
- ▶ Cinematography
- ▶ High Speed Imaging

Specifications

Nr of Active Pixels	4608 (H) x 3072 (V)	Optical Format	APS (30.5 mm Diagonal)
Pixel Size	5.5 μm x 5.5 μm	Photosensitive Area	25.34 mm x 16.90 mm
Shutter Type	Global Shutter	Peak QE	83 % (with ulens and glass lid)
Full Well Capacity	15 ke ⁻	PLS	< -80 dB
Temporal Noise	< 1.84 e ⁻ (Dual 12 bit HDR & 12 bit, gain 4)	Angular Response	30° (80% Response)
Dark Current	54.2 e ⁻ /pixel/s (60°C die temperature)	Max. SNR	41.79 dB (12 bit, gain 0)
Dynamic Range	78.2 dB (Dual 12 bit) 66.4 dB (12 bit) 61.9 dB (10 bit)	Max Frame Rate	670 fps (10 bit) 350 fps (12 bit) 80 fps (Dual 12 bit)
Output Format	84 ch Sub-LVDS	Channel Multiplexing	Yes (any multiple of 4)
ADC	10/12 bit	Max. Data Rate	94.84 Gbps
Chroma	Mono & RGB Color	Power Consumption	Max. 3.4 W (idle) Max. 4.94 W (streaming)
Supply Voltage	3.3 V (analog) 1.8 V (I/O) 1.2 V (digital)	Package	454 pins μ PGA (42.00 mm x 38.00 mm)

Package Drawing



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GP-PR250801 V1.1