

# GSENSE1081BSI Product Flyer



## 81MP SCIENTIFIC CMOS IMAGE SENSOR

**GSENSE1081BSI** is designed with large imaging area for demanding scientific imaging applications. Sensor provides active resolution of 8900(H) x 9120(V) with  $10\ \mu\text{m} \times 10\ \mu\text{m}$  pixel size. An inter-scene dynamic range is 84.5 dB combined from maximum full well capacity of  $90.68\ \text{ke}^-$  and readout noise of  $5.35\ \text{e}^-$ . Sensor supports on-chip 16 bit ADC, with LVDS channel running up to 250 MHz, providing frame rate up to 0.34 fps.

**GSENSE1081BSI** is assembled in high-end SiC package with one flexi-cable, by this design, the dead space at 3x package sides is minimized and makes sensor well fit for applications require a mosaic sensor array. The thermal expansion of SiC is close to silicon die which is suitable for deep cooling applications.



## Key Features

- Large format sensor with frame rate up to 0.34fps
- 97% Peak QE (610 nm)
- Anti-glowing
- On-chip 16 bit column-parallel ADC
- 4 LVDS output pairs
- On-chip temperature sensor
- Silicon carbide with one flexi-cable

## Applications

- Scientific Imaging Applications
- Astronomy Applications

## Sensor Specifications

Resolution	8900 (H) x 9120 (V)	Photo-sensitive area	89.00 mm x 91.20 mm
Pixel size	10 $\mu\text{m}$ x 10 $\mu\text{m}$	Quantum efficiency	97.11% (610 nm)
Shutter type	Rolling shutter	Dark noise	5.35 $\text{e}^-$
Maximum FWC	90.68 $\text{ke}^-$	Frame rate	0.34 fps (2 pairs of LVDS) 0.94 fps (4 pairs of LVDS)
Dynamic range	84.5 dB	Power consumption	1.4 W (full resolution & full speed)
Output interface	5 pairs of LVDS in total - 4 for pixel data - 1 for DDR clock	Dark current	0.00373 $\text{e}^-/\text{s/pix}$ ( $-70^\circ\text{C}$ )
Data rate	500 Mbps (2 pairs of LVDS running at 250MHz) 1.6 Gbps (4 pairs of LVDS running at 400 MHz)	Pixel clock rate	Up to 15.625 MHz (16 bit)
Chroma	Mono	Operation temperature	$-85^\circ\text{C}$ to $+50^\circ\text{C}$
I/O voltage	5V for analog 1.8V for digital	Package	100 pins SiC package

## Ordering Information

### Sensor Part No.

#### GSENSE1081BSI-BBM-NPN-NN0

RevB BSI Image Sensor.  
Monochrome without microlens on die.  
Silicon carbide with 100-pin  $\text{Al}_2\text{O}_3$  PGA ceramic package and flexible cable. Without glass lid.  
Grade 0

#### GSENSE1081BSI-BBM-NPN-NN1

RevB BSI Image Sensor.  
Monochrome without microlens on die.  
Silicon carbide with 100-pin  $\text{Al}_2\text{O}_3$  PGA ceramic package and flexible cable. Without glass lid.  
Grade 1

#### GSENSE1081BSI-BBM-NPN-NN2

RevB BSI Image Sensor.  
Monochrome without microlens on die.  
Silicon carbide with 100-pin  $\text{Al}_2\text{O}_3$  PGA ceramic package and flexible cable. Without glass lid.  
Grade 2

## Contact Gpixel HQ

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