



B11-128S Data Sheet

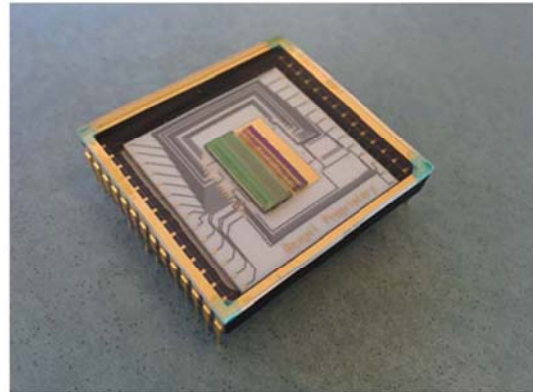
Linear Array Image Sensor

Key Features

- 1 (H) x 128 (V) Active Pixels
- 1 inch Optical Format
- SWIR Spectral Coverage: 900 – 1,700 nm
- VIS-SWIR Optional: 400 – 1,700 nm
- Quantum Efficiency in visible & NIR/SWIR (>95% @ 1,550 nm)
- Min. Detectable Threshold: 0.001 lux
- High Dynamic Range: 97 dB - Clear vision in fog, rain, shadows, excess light.
- Electronic Global Shutter
- -40°C to +85°C Operational Temperature Range
- 28-Pin LCC Package
- Power Dissipation: < 55 mW
- These Devices are Pb-Free and are RoHS Compliant

Applications

- SWIR Imaging, Night Vision /Fog Vision
- Homeland Security – Security & Surveillance, Military
- First-responders, Law Enforcement & Public Safety
- Automotive – Autonomous & Non-Autonomous Driving Sensors – Safety, Collision, Obstacle Avoidance
- Machine Vision
- Inspection – Solar Cell & Si ingot
- Agricultural QC & Food Sorting
- Process Control – Semiconductor
- Spectroscopy, Microscopy, Scientific Imaging, Raman Chemical ID - Pharma
- Space & Atmospheric Remote Sensing
- Bio - Medical Imaging



Description

The Banpil *B11-128S* Image Sensor is a next generation linear array high performance, multispectral sensor to replace CCD and designed for a wide range of image sensing applications in the 0.4 μ m to 1.7 μ m wavelength band.

The sensor is built with a truly unique technology employing a single monolithic sensor that detects Visible, Near Infrared (NIR) and Shortwave IR (SWIR) light with high quantum efficiency and broad range of peak response.

The *B11-128S* sensor produces more than 2x consistently clearer, sharper, enhanced images than CCD sensors in visible light and clearer, sharper NIR images where CCD fails.

With a highly sensitive minimum detectable threshold of 0.001 lux, this sensor is able to “see” in practically total darkness. No light projection is needed. It also produces higher quality images in changing bright and dark conditions giving visibility in poor lighting.



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SPECIFICATIONS

| GENERAL SPECIFICATIONS | | ELECTRO-OPTICAL SPECIFICATIONS | |
|-----------------------------|--|-------------------------------------|--|
| Parameters | Specification | Parameters | Typical Specifications |
| Sensor Type | InGaAs | Spectral Response (Optional) | Standard 0.9 - 1.7 μm VIS/SWIR 0.4 - 1.7 μm |
| Active Pixels / Resolution | 1 \times 128 - Linear Array | Line Rate | 342 kHz |
| Pixel Size/Pitch | 100 μm \times 100 μm | Pixel Rate | 2.5 MHz |
| Active Area (H \times V) | 0.1 mm \times 13 mm | Fill Factor (FF) | 90% |
| Pixel Type | Rolling progressive shutter pixel | Saturation Voltage Exposure | 2.5 V |
| Integration Modes (Readout) | Integrate-Then-Read Integrate-While-Read | Fill Factor (FF) | 90% |
| Output Format | Buffered Analog Differential | Quantum Efficiency (QE) | >95% @ 1,550 nm |
| Power Supply | 5 V , -5V, 0 V nominal supplies | Photo Response Nonuniformity (PRNU) | 10% of Signal |
| Power Dissipation | \leq 55 mW | Min Detectable Range | 0.001 lux |
| Package Type | 28 LCC; Glass Lid | Dynamic Range | 97 dB |

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