

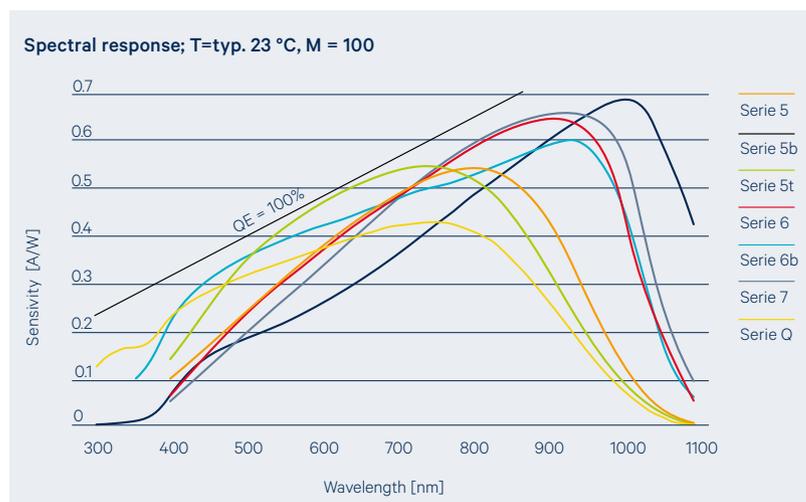
Optical sensors

First Sensor develops and manufactures a large selection of photodetectors with high-sensitivity, high-speed, and low-dark-current which can be adapted to your specific requirements. Our sensors are optimized for ultraviolet, visible, or infrared light as well as ionizing radiation. Package solutions include surface mount (SMD) and through-hole (THD) devices. Further, we provide silicon photomultipliers for the detection of lowest light levels.



PIN photodiodes

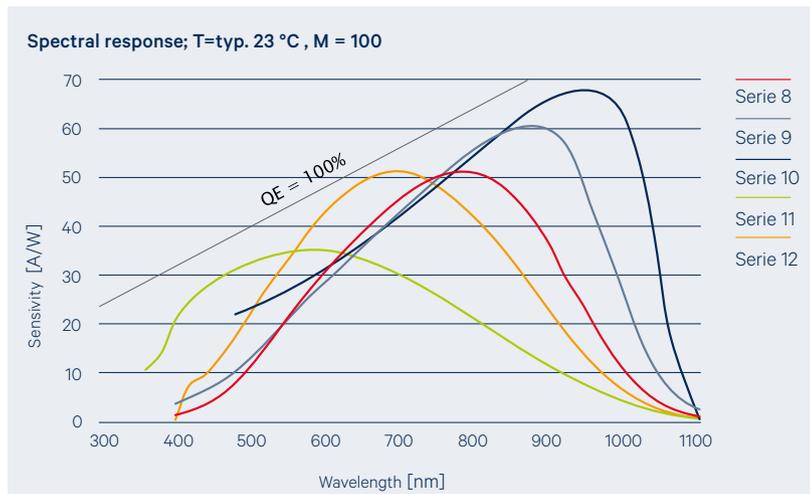
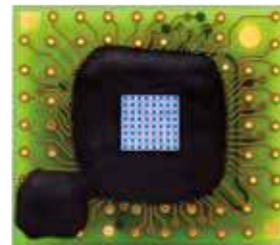
Silicon features unique properties for light detection. Silicon PIN photodiodes are used to convert photonic energy into electrical current and achieve very fast rise times. First Sensor develops and manufactures PIN photodiodes in standard product lines optimized for specific wavelength ranges as well as customized detectors adapted to your specific requirements. Additionally, we offer quadrant PIN photodiodes with four optically active areas.



PIN series	Optimized for	Special features
SERIES 6b	350...650 nm	Blue/green enhanced
SERIES 5b	350...650 nm	High-speed blue-enhanced Epitaxy PIN-diode
SERIES 5t	500...900 nm	High-speed red-enhanced Epitaxy PIN-diode
SERIES 5	500...900 nm	High-speed NIR-enhanced Epitaxy PIN-diode
SERIES 6	700...1000 nm	General purpose, low dark current, fast response
SERIES 7	700...1000 nm	Low Capacitance, full depletable design available
SERIES Q	900...1100 nm	Enhanced NIR sensitivity, low voltage, fully depletable, low Capacitance
SERIES i	900...1700 nm	InGaAs photodiode, high IR sensitivity, low dark current

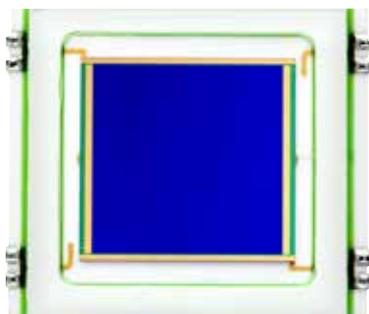
Avalanche photodiodes (APDs)

Silicon avalanche photodiodes (APDs) are optical detectors with an internal gain mechanism capable of a high gain bandwidth product. Due to their very high sensitivity avalanche photodiodes are ideally suited for measurements of very low light levels. First Sensor provides single element APD sensors as well as linear and matrix APD arrays with multiple active areas e.g. with 8, 16, 5x5 or 8x8 pixels.



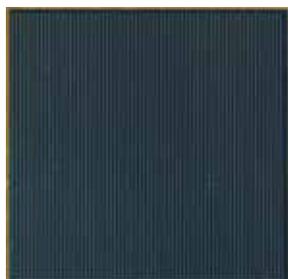
APD series	Optimized for	Special features
SERIES 11	350...550 nm	Blue enhanced, high speed
SERIES 12	550...780 nm	Ultra-low temp. coefficient, flat frequency response up to 3 GHz
SERIES 8	630...850 nm	High speed, low temperature coefficient, high gain, high gain bandwidth product
SERIES 9	800...905 nm	Lower rise time at higher NIR sensitivity, low temperature coefficient, high gain
SERIES 10	900...1064 nm	Sensitivity at 1064 nm is close to physical limits

Optical sensors

**Position-sensitive diodes (PSDs)**

Position-sensitive diodes monitor relative changes in the position of a light spot on the detector. These silicon PIN photodiodes utilize the effect of the lateral division of the generated photocurrent between the electrical contacts. First Sensor offers one and two dimensional PSDs with high sensitivity in the red and infrared spectral range and very high linearity and spatial resolution.

PIN series	Optimized for	Special features
SERIE 6	700...1000 nm	General purpose, low dark current, fast response
SERIE 7	700...1000 nm	Low Capacitance, full depletable design available

**Silicon photomultipliers (SiPMs)**

Silicon photomultipliers from First Sensor enable the detection of ultra-low light levels down to single photons. The peak sensitivity of our SiPMs is in the blue wavelength range. Further, the silicon photomultipliers feature low noise, a large range of stable operation and an extremely low temperature coefficient of the gain.

Our development modules connect the optical sensor with the amplification and electronics required for signal processing and, if required, with an ultra-stable voltage supply. This allows the sensor to be tested under laboratory conditions and simplifies the integration into your application.

Hybrids

First Sensor offers compact integration of photodiodes and amplifiers. The amplifier is matched to the specific features of the detector. Contact us to find your specific sensor solution.



Development modules

First Sensor manufactures APD modules and development boards as well as modules for quadrant photodiodes, position- and wavelength sensitive photodiodes. They enable test runs in the research lab and easy integration into your system.

Evaluation kits

Our product portfolio also features complete evaluation kits including temperature compensated high voltage sources and amplification to make the evaluation of your APDs as simple as possible. Ask us for your specific evaluation kit.



High voltage sources

High voltage sources from First Sensor are optimized for use with PIN photodiodes and APDs and feature minimal voltage noise and compact designs.