

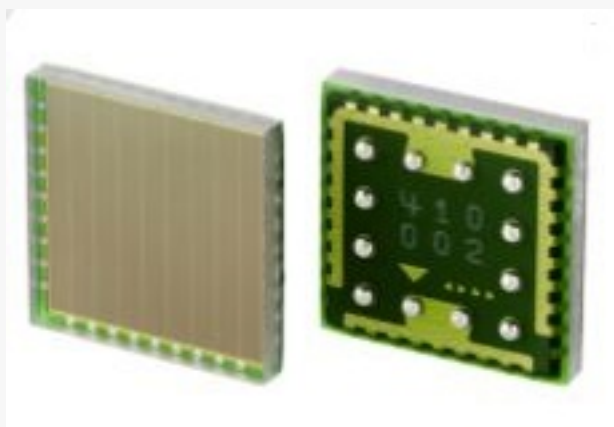
Silicon Photomultipliers (SiPMs) Low Light Detection for Medical Imaging, Bio & Life Sciences, Hazard & Threat Detection

Silicon Photomultipliers (SiPMs) are low level light sensors [array of silicon avalanche photo diodes (APDs)]. SiPM's offer high gain and easy of operation.

SANTA ROSA, CALIFORNIA, USA,
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EOC's [Silicon Photomultipliers \(SiPMs\)](#) are silicon-based solid state low level light sensors. They are basically an array of silicon avalanche photo diodes (APDs), each operated in Geiger-mode. This results in the SiPM's advantages of high gain, low temperature dependency, easy operation and enhanced next generation sensor performance.

EOC's Silicon Photomultipliers (SiPMs) are novel solid-state silicon detectors with single photon counting capability. SiPMs excel in many applications and feature high gain with very low temperature drift, extremely good timing performance at a low operating voltage. They are also insensitive to magnetic fields and stand out with their mechanical robustness. EOC provides cost-effective solutions from high volume applications to customized detector solutions.

SiPMs combine the benefits of vacuum PMTs (high photon detection efficiency, gain and signal-to-noise) with the benefits of APDs (robustness, miniaturized design, low operation voltage, cost-effective and magnetic insensitivity) to an outstanding low level light sensor with an exceptional



SiPMs for Low Light detection like LIDAR



SiPM Module for turnkey use

performance at low cost.

SiPM Features:

- Single photon resolution
- High photon detection efficiency
- High gain and high signal to noise ratio
- Very compact devices
- Low bias voltage
- Insensitive to magnetic fields
- Superior time resolution
- Counting and CW measurements
- Simple calibration and monitoring
- Not damaged by daylight
- Low costs

Applications:

[Medical Imaging – Improved images and better diagnosis.](#)

Biophotonics & Life Science – Lower noise and superior images at reduced cost.

High Energy & Astro Physics – Reliable performance in harsh environments.

Lidar & 3D Ranging (Optical Measurement) – Extended range with single photon sensitivity.

Hazard & Threat Detection (Homeland Security) – Compact, robust and reliable detection of radiation.

Communications – Cryptography and Data Transmission.

Sorting & Recycling – Fast and energy resolvable detectors for higher throughput.

Positron Emission Tomography – Positron Emission Tomography (PET) scanners have adapted the use of Silicon Photomultipliers (SiPM) as photodetectors.

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