

Press Release

Avalanche Photodiodes Count Individual Photons

Silicon APDs for Photon Counting

The detection of the smallest amounts of light is gaining in importance in medical technology and diagnostics. In principle, photon multipliers (PMTs) can be used; however, they are disadvantageously sensitive to magnetic fields and require a high operating voltage. Avalanche photodiodes are particularly suitable: Not only are they cheaper but they also have a compact design, a longer lifetime, a very good time resolution, need a lower operating voltage and are insensitive to magnetic fields.

LASER COMPONENTS' SAP500 series is based on a reach-through structure featuring excellent quantum efficiency, extremely low noise, and low dark current. To detect individual photons, the avalanche photodiode is operated in Geiger mode; it is operated at a voltage above the breakdown voltage, $V_r > V_{BR}$. The component has an active area of 500 μm and comes in a hermetically-sealed TO-46 housing – optional with single-stage thermoelectric cooler (TO-37) or two-stage TEC in a TO-8 housing.

The new SAP500 series is particularly suitable for applications in which the weakest light signals, down to the individual photons, have to be quantified and timely resolved. Examples of this include LIDAR, spectroscopy, fluorescence measurement, or photon counting.

More Information

<http://www.lasercomponents.com/de-en/product/silicon-apds-for-photon-counting/>

Trade Shows

PHOTONEX London 2013, April, 9, 2013, University College London, UK, **Booth S17**
Optics + Optoelectronics 2013, April, 16-17, 2013, Clarion Congress Hotel, Prague, CZ
Defense, Security + Sensing, 29.04. - 03.05.2013, Baltimore Convention Center, USA, **Booth 1237**
LASER. World of Photonics, 13.-16.05.2013, Neue Messe München, Germany, **Booth B1.442**
Sensor + Test, May, 14.-16., 2013, Messe Nürnberg, Nürnberg, Germany, **Booth 12-609**
Security + Defence, Sept., 24 - 25, 2013, Internat. Congress Center Dresden, Germany

The Company

LASER COMPONENTS is specialized in the development, manufacture, and sale of components and services for the laser and opto-electronics industries. With sales offices in four different countries, the company has served its customers since 1982. In-house production at six locations in Germany, Canada, and the USA began in 1986 and is meanwhile responsible for about half of its turnover. Currently, the family-run business employs more than 140 people worldwide.