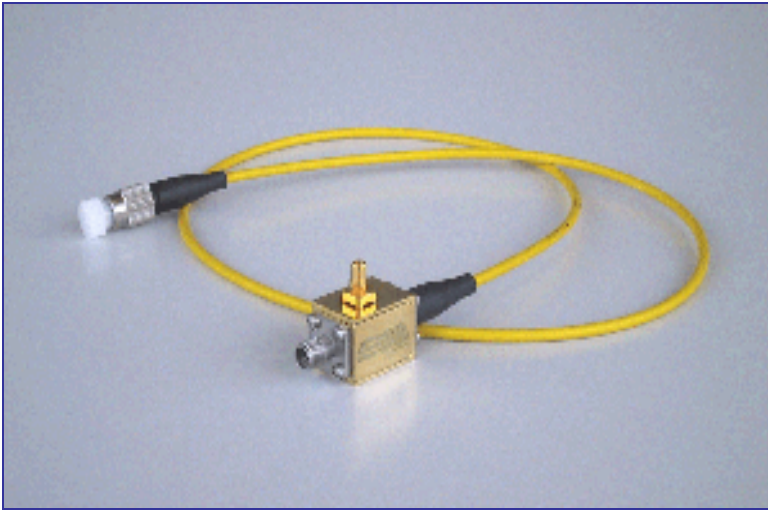


Fast Photodetector

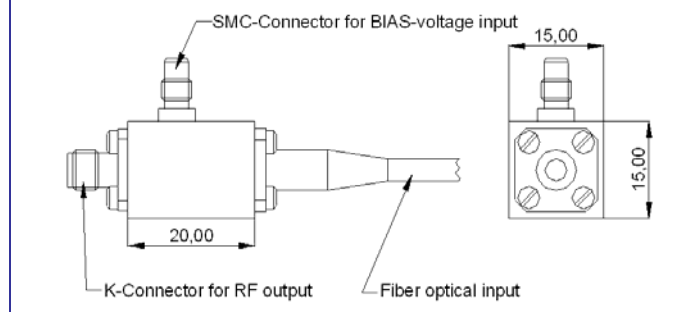
The UltraFast MSM photo detectors are available in two versions with bandwidth up to 35 GHz and can measure signals with wavelengths from below 400 nm to 1.6 μm . The detectors are optimized for minimal pulse tail and oscillation-free impulse response. These excellent features are obtained by exploiting the inherent advantages of the MSM (metal-semiconductor-metal) detector configuration such as low capacitance, low series resistance and large active area. Special structures and dopants enhance the responsivity and lower the electrical noise. The MSM detectors are an ideal choice for precisely characterizing the time and frequency response of high-speed optical sources and light wave systems.



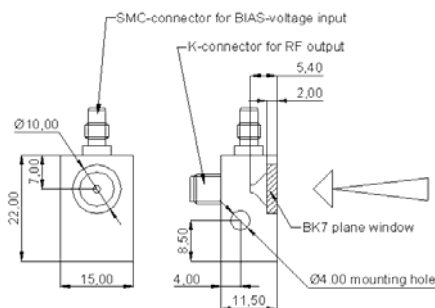
Features

- Wide wavelength range 400nm to 1600nm
- Large bandwidth DC – 35 GHz
- Large active detector area

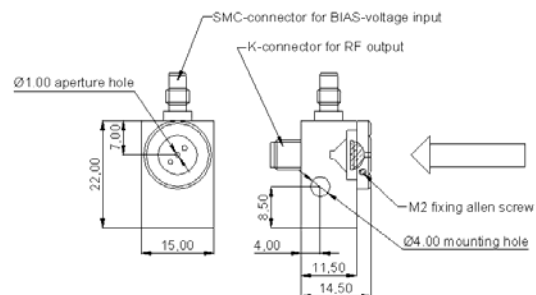
Fibre coupled version



Free space versions with plane window



Free space versions with lens



Fast Photodetector Specifications

| Parameter | UF-20 | UF-35 |
|----------------------------------|--------------------------------|--------------------------------|
| Chip | | |
| Active area | ∅ 25 µm | ∅ 25 µm |
| Active material | InGaAs | InGaAs |
| Wavelength range | 300 nm - 1600 nm | 300 nm - 1600 nm |
| Structure | metal-semiconductor-metal | metal-semiconductor-metal |
| Contact spacing | 0.8 µm x 1 µm | 0.8 µm x 1 µm |
| Electro-Optical | | |
| Rise time | <12 ps | <11 ps |
| FWHM | <20 ps | <18 ps |
| Bandwidth | 0 – 20 GHz | 0 – 35 GHz |
| Sensitivity @ 0.8µm | 0.24 mA/mW | 0.12 mA/mW |
| Conversion gain (50 Ω sys.) | 12 mV/mW | 6 mV/mW |
| Dark current @ 6 V | < 1 µA | < 1 µA |
| Optical | | |
| Fiber | 9 µm single mode fiber | 9 µm single mode fiber |
| Connector | FC/PC | FC/PC |
| Electrical | | |
| DC bias voltage (min-max) | 3 V-9 V (6 V with Battery Box) | 3 V-9 V (6 V with Battery Box) |
| DC connector | SMC-type, male | SMC-type, male |
| RF connector | K-type | K-type |
| Environment (operating) | | |
| Temperature | 25°C ± 10°C | 25°C ± 10°C |
| Relative humidity | 30% to 70% | 30% to 70% |
| Size of main housing | | |
| width x height x depth (mm3) | 15 x 15 x 30 | 15 x 15 x 30 |
| for Allegro-35/20-FS | 15 x 11 x 22 | 15 x 11 x 22 |
| Weight | | |
| whole device | 100 g | 100 g |
| Maximum Ratings | | |
| Optical | | |
| peak power input | 100 mW for pulsewidth >20 ps | 100 mW for pulsewidth >20 ps |
| average power input | 2 mW | 2 mW |
| Electrical | | |
| DC bias voltage | 9 V | 9 V |
| For standard Oscilloscope | | |
| max. input voltage | <2 V | <2 V |

Specifications greater than those listed under the absolute maximum ratings may cause permanent damage to the device. Exposure to the absolute maximum rating conditions for extended periods may affect reliability.

A.L.S. GmbH reserves the right to change specifications without prior notice.

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Market Tech, Inc.
 PO Box 67037
 Scotts Valley, CA 95067-7037
 Phone: 800-326-5714
 Fax: 831-461-1136
 Email: info@markettechinc.net
 Web: www.markettechinc.net

Manufactured by:

A.L.S. GmbH
 Schwarzschildstraße 6
 D-12489 Berlin, Germany
 Phone: +49 (0)30-6392 6525
 Fax: +49 (0) 30-6392 6521