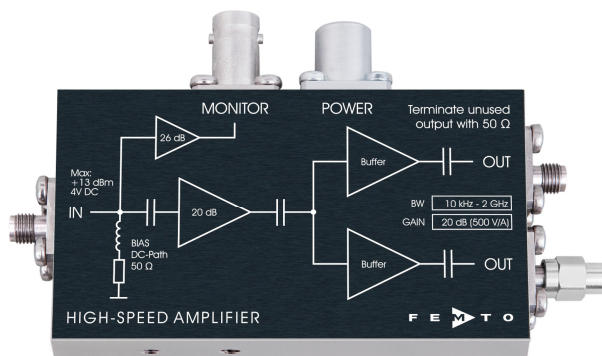


# 1 GHz High-Speed Amplifier



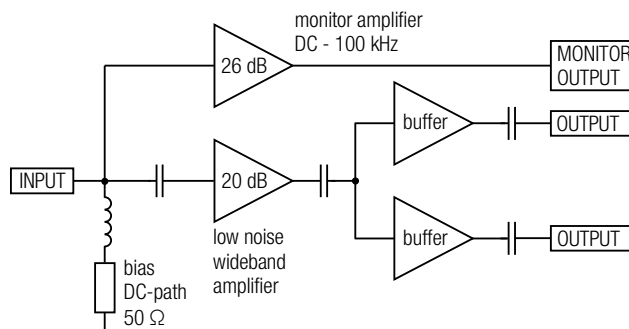
## Features

- **Bandwidth 10 kHz – 2 GHz**
- **Exceptional low 10 kHz lower cut-off frequency for optimal pulse processing without shape distortion**
- **Rise time 175 ps**
- **Gain 20 dB**
- **Input return loss 23.1 dB**
- **Integrated bias circuit**
- **Monitor output**
- **Two identical signal outputs**

## Applications

- **Preamplifier for ultra-fast detectors (microchannel-plates, photomultipliers, avalanche-photodiodes, PIN-photodiodes etc.)**
- **Oscilloscope and transient-recorder preamplifier**
- **Time-resolved pulse and transient measurements**

## Block Diagram



BS-HSA-Y\_23\_R01

## Intended Use

The HSA-Y-2-20 amplifier is a fixed gain wideband GHz amplifier. It is designed for ultra fast amplification of small voltage and current signals in the frequency range from 10 kHz to 2 GHz. Operation is mostly self-explanatory. If in doubt, consult this document or contact [support@femto.de](mailto:support@femto.de).


For safe operation, please refer to the damage thresholds specified in the "Absolute Maximum Ratings", "Temperature Range" and "Power Supply" sections of this document.

## Application Notes

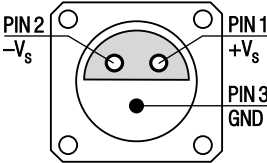
**CAUTION!** Do not exceed the maximum allowable input power of +13 dBm (20 mW). If in doubt, use attenuators on the amplifier input.

The HSA-Y-2-20 offers two identical RF outputs. For operation it is mandatory that both RF outputs are terminated with 50 Ω loads. If only one output is used, the unused SMA output socket must be terminated with a 50 Ω terminator which is included in delivery.

## 1 GHz High-Speed Amplifier

Available Accessories	PS-15-25-L  Power supply Input: AC 100 – 240 V Output: DC $\pm 15$ V																																																																																										
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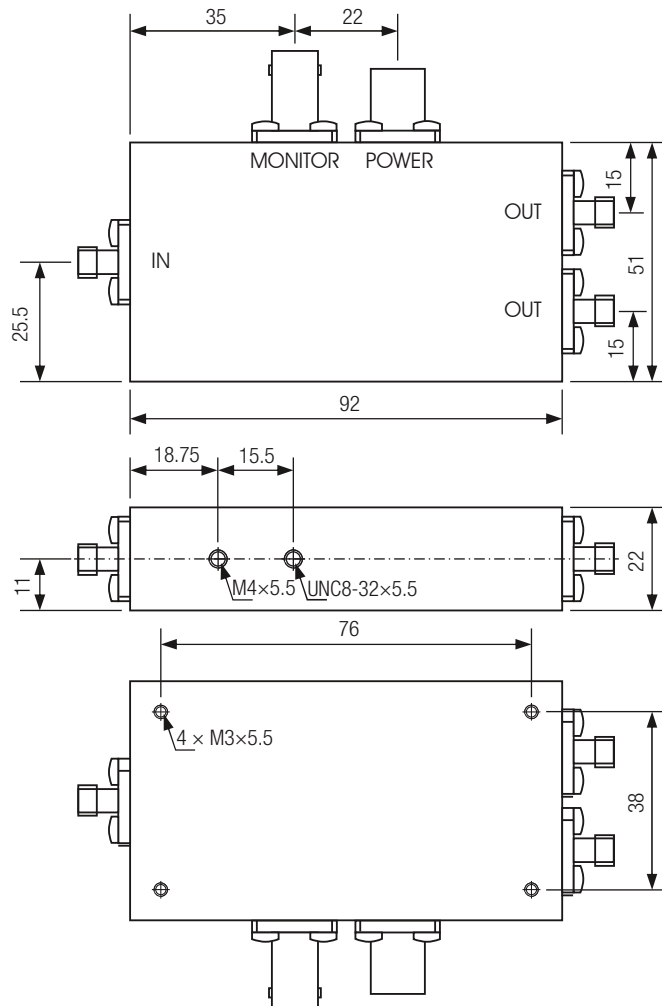
1 GHz High-Speed Amplifier

Connectors	<div><div><div>Input</div><div>RF Output</div><div>Monitor output</div><div>Power supply</div></div><div><div>SMA jack (female)</div><div>2 × SMA jack (female)</div><div>BNC jack (female)</div><div>LEMO® series 1S, 3-pin fixed socket (mating plug type: FFA.1S.303.CLAC52)</div></div></div> <div><div></div><div><div>Pin 1: +15 V</div><div>Pin 2: -15 V</div><div>Pin 3: GND</div></div></div>
Scope of Delivery	HSA-Y-2-20, 50 Ω SMA terminator, LEMO® 3-pin connector, datasheet, transport package
Ordering Information	<div><div>HSA-Y-2-20</div><div>High-speed GHz amplifier</div></div>

## 1 GHz High-Speed Amplifier

### Dimensions

HSA-Y-2-20



DZ-HSA-Y\_23\_R01

all dimensions in mm unless otherwise noted

FEMTO Messtechnik GmbH  
Klosterstr. 64  
10179 Berlin · Germany  
Phone: +49 30 280 4711-0  
Fax: +49 30 280 4711-11  
Email: [info@femto.de](mailto:info@femto.de)  
[www.femto.de](http://www.femto.de)

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