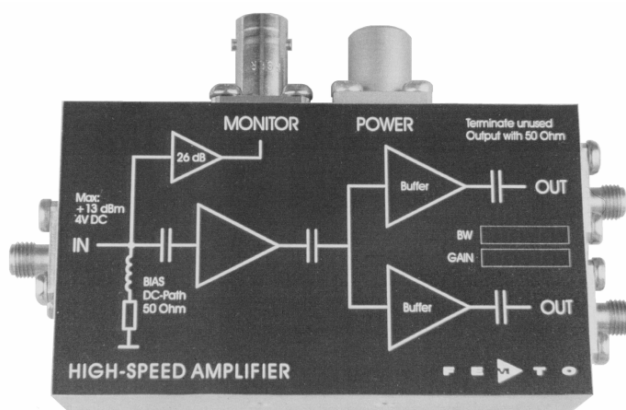


## 2 GHz High-Speed Amplifier



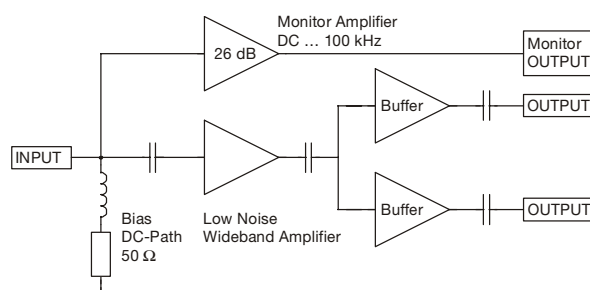
### Features

- **Bandwidth 10 kHz ... 2 GHz**
- **Rise Time 175 ps**
- **Gain 20 dB (500 V/A)**
- **Input VSWR 1 : 1.15**
- **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**

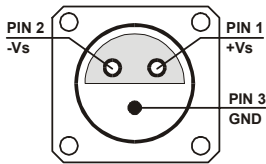
### Block Diagram



### Specifications

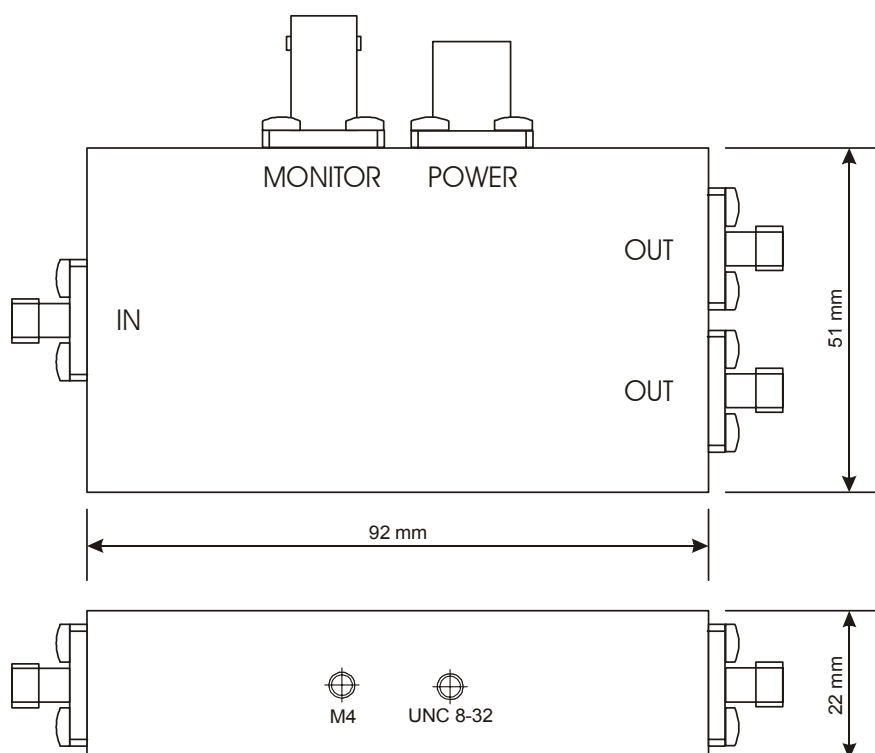
| <i>Test Conditions</i> |                                | <i>V<sub>s</sub> = ± 15 V, T<sub>a</sub> = 25°C, System Impedance = 50 Ω</i> |
|------------------------|--------------------------------|------------------------------------------------------------------------------|
| Gain                   | Gain                           | 20 dB (500 V/A)                                                              |
|                        | Gain Accuracy                  | ± 1 dB                                                                       |
|                        | Gain Flatness                  | ± 0.2 dB                                                                     |
| Frequency Response     | Lower Cut-Off Frequency        | 10 kHz                                                                       |
|                        | Upper Cut-Off Frequency        | 2 GHz                                                                        |
| Time Response          | Rise / Fall Time (10% - 90%)   | 175 ps                                                                       |
| Input                  | DC Input Impedance             | 50 Ω                                                                         |
|                        | RF Input Impedance             | 50 Ω                                                                         |
|                        | 50 Ω Noise Figure              | 5.2 dB (@ f < 1 GHz)                                                         |
|                        | Equivalent Input Voltage Noise | 680 pV/√Hz (@ f < 1 GHz)                                                     |
|                        | Equivalent Input Current Noise | 13.6 pA/√Hz (@ f < 1 GHz)                                                    |
|                        | Input VSWR                     | 1 : 1.15 (@ f < 1.5 GHz)                                                     |
|                        | Maximum Input VSWR             | 1 : 1.35 (@ f < 3 GHz)                                                       |

## 2 GHz High-Speed Amplifier

|                          |                                                                                                                                                                                                                                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output                   | Two identical Signal Outputs:<br>Output Impedance 50 $\Omega$<br>Maximum Output VSWR 1 : 2.5 (@ f < 3 GHz)<br>Output Power P <sub>1dB</sub> + 12.5 dBm (@ f < 1 GHz)<br>Output Peak-Peak Voltage 2.5 Vpp (@ f < 500 MHz, for linear Amplification)<br>Isolation between Outputs 15 dB (@ f < 3 GHz) |
| Monitor Amplifier        | Gain 26 dB (1 kV/A)<br>Lower Cut-Off Frequency DC<br>Upper Cut-Off Frequency 100 kHz<br>Output Voltage $\pm 10$ V (@ 10k $\Omega$ load)                                                                                                                                                             |
| Power Supply             | Supply Voltage $\pm 15$ V<br>Supply Current + 160 / -10 mA                                                                                                                                                                                                                                          |
| Case                     | Weight 180 gr. (0.41 lbs)<br>Material AlMg4.5Mn, nickel-plated                                                                                                                                                                                                                                      |
| Temperature Range        | Storage Temperature - 40 ... + 100 °C<br>Operating Ambient Temperature 0 ... + 60 °C<br>Operating Case Temperature 37 °C (@ Ta = 25 °C)                                                                                                                                                             |
| Absolute Maximum Ratings | Power Supply Voltage $\pm 20$ V<br>DC and LF Input Voltage $\pm 4$ V<br>RF Input Power + 13 dBm                                                                                                                                                                                                     |
| Connectors               | Input SMA<br>Signal Outputs SMA<br>Monitor Output BNC<br>Power Supply LEMO Series 1S, 3-pin fixed Socket<br>Pin 1: + 15 V<br>Pin 2: - 15 V<br>Pin 3: GND<br>                                                    |
|                          |                                                                                                                                                                                                                                                                                                     |

## 2 GHz High-Speed Amplifier

Dimensions



DZ01-0611-10

FEMTO Messtechnik GmbH  
Klosterstr. 64  
D-10179 Berlin • Germany  
Tel.: +49-(0)30-280 4711-0  
Fax: +49-(0)30-280 4711-11  
e-mail: [info@femto.de](mailto:info@femto.de)  
<http://www.femto.de>

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