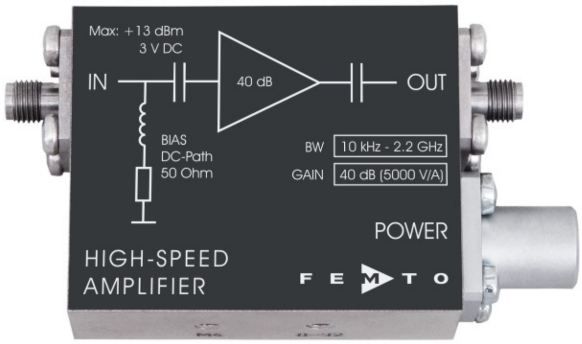
# 2.2 GHz High-Speed Amplifier



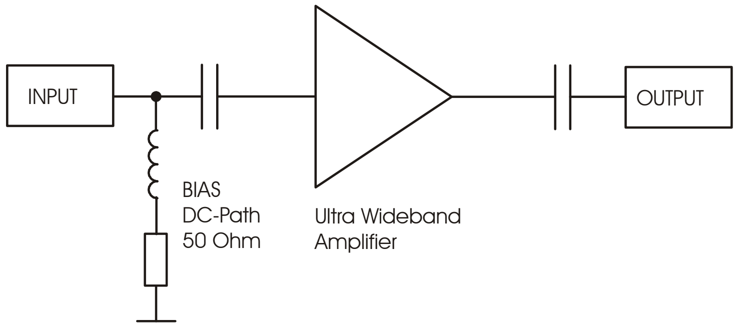

**Features**

- **Bandwidth 10 kHz … 2.2 GHz**
- **Rise time 160 ps**
- **Gain 40 dB**
- **Integrated bias circuit**

**Applications**

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

**Block Diagram**




**Specifications**

| | | | |
|---|---|---|---|
| | Test conditions | $V_S$ = + 15 V, $T_A$ = 25°C, System Impedance = 50 Ω | |
| Gain | Gain | 40 dB | |
| | Gain accuracy | ±1 dB | |
| Frequency Response | Lower cut-off frequency (–3 dB) | 10 kHz | (±20 %) |
| | Upper cut-off frequency (–3 dB) | 2.2 GHz | (±15 %) |
| | Rise/fall time (10 % - 90 %) | 160 ps | |
| Input | DC input impedance | 50 Ω | |
| | RF input impedance | 50 Ω | |
| | 50 Ω noise figure | 5.1 dB | (@ f < 1 GHz) |
| | Equivalent input voltage noise | 670 pV/√Hz | |
| | Input VSWR | 1.5 : 1 | (@ f < 2.5 GHz) |
| | Input return loss | 14 dB | (@ f < 2.5 GHz) |
| Output | Output impedance | 50 Ω | |
| | Output power $P_{1dB}$ | +12.5 dBm | (@ f < 1 GHz) |
| | Output peak-to-peak voltage | 2.0 $V_{PP}$ | (@ f < 500 MHz, for linear amplification) |

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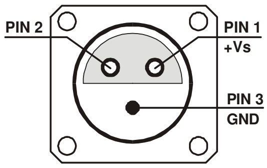
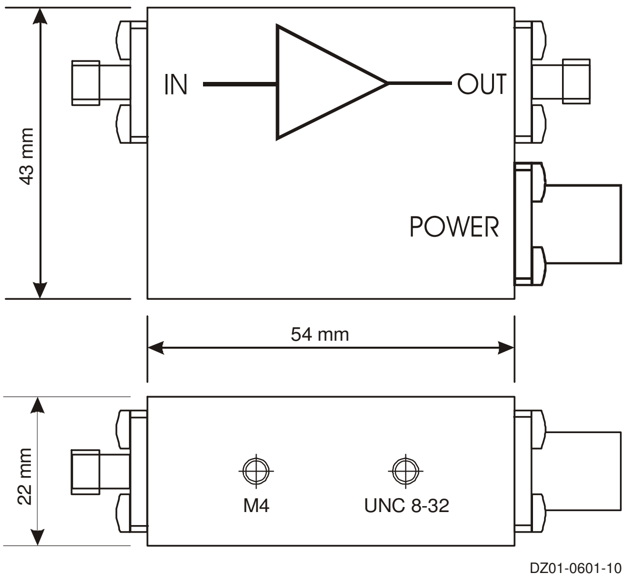
| | | |
|---|---|---|
| Specifications (continued) | | |
| Power Supply | Supply voltage<br>Supply current | +15 V<br>+140 mA |
| Case | Weight<br>Material | 100 g (0.23 lbs)<br>AlMg4.5Mn, nickel-plated |
| Temperature Range | Storage temperature<br>Operating ambient temperature | –40 ... +100 °C<br>0 ... +60 °C |
| Absolute Maximum Ratings | Power supply voltage<br>DC and LF input voltage<br>RF input power | +18.5 V<br>±3 V<br>+13 dBm |
| Connectors | Input | SMA, jack (female) |
| | Output | SMA, jack (female) |
| | Power supply | Lemo® series 1S, 3-pin fixed socket<br>(mating plug type: FFA.1S.303.CLAC52)<br>Pin 1: +15 V<br>Pin 2: NC<br>Pin 3: GND |




Dimensions

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