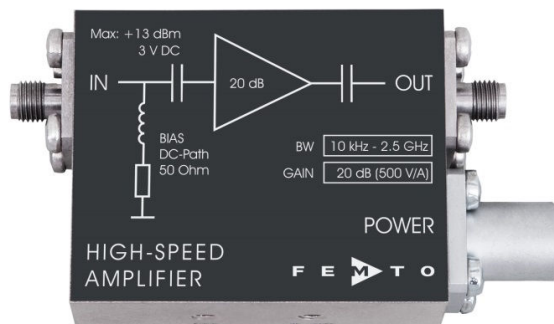


2.5 GHz High-Speed Amplifier



<p>Features</p>	<ul style="list-style-type: none"> • Bandwidth 10 kHz ... 2.5 GHz • Rise time 140 ps • Gain 20 dB • Input VWSR 1.23 : 1 • Integrated bias circuit 																														
<p>Applications</p>	<ul style="list-style-type: none"> • Preamplifier for ultra-fast detectors (microchannel-plates, photomultipliers, avalanche-photodiodes and PIN-photodiodes) • Oscilloscope and transient-recorder preamplifier • Time-resolved pulse and transient measurements 																														
<p>Block Diagram</p>																															
<p>Specifications</p>	<table border="0"> <tr> <td>Test conditions</td> <td colspan="2">$V_s = + 15 \text{ V}$, $T_A = 25^\circ\text{C}$, system impedance = 50Ω</td> </tr> <tr> <td rowspan="3">Gain</td> <td>Gain</td> <td>20 dB (x 10)</td> </tr> <tr> <td>Transimpedance Gain</td> <td>500 V/A (20 dB x 50Ω)</td> </tr> <tr> <td>Gain accuracy</td> <td>$\pm 1 \text{ dB}$</td> </tr> <tr> <td rowspan="3">Frequency Response</td> <td>Lower cut-off frequency (-3 dB)</td> <td>10 kHz ($\pm 20 \%$)</td> </tr> <tr> <td>Upper cut-off frequency (-3 dB)</td> <td>2.5 GHz ($\pm 15 \%$)</td> </tr> <tr> <td>Rise/fall time (10 % - 90 %)</td> <td>140 ps</td> </tr> <tr> <td rowspan="6">Input</td> <td>DC input impedance</td> <td>50Ω</td> </tr> <tr> <td>RF input impedance</td> <td>50Ω</td> </tr> <tr> <td>50Ω noise figure</td> <td>4.5 dB (@ $f < 1 \text{ GHz}$)</td> </tr> <tr> <td>Equivalent input voltage noise</td> <td>610 pV/$\sqrt{\text{Hz}}$ (@ $f < 1 \text{ GHz}$)</td> </tr> <tr> <td>Input VSWR</td> <td>1.23 : 1 (@ $f < 2.5 \text{ GHz}$)</td> </tr> <tr> <td>Input return loss</td> <td>20 dB (@ $f < 2.5 \text{ GHz}$)</td> </tr> </table>	Test conditions	$V_s = + 15 \text{ V}$, $T_A = 25^\circ\text{C}$, system impedance = 50Ω		Gain	Gain	20 dB (x 10)	Transimpedance Gain	500 V/A (20 dB x 50Ω)	Gain accuracy	$\pm 1 \text{ dB}$	Frequency Response	Lower cut-off frequency (-3 dB)	10 kHz ($\pm 20 \%$)	Upper cut-off frequency (-3 dB)	2.5 GHz ($\pm 15 \%$)	Rise/fall time (10 % - 90 %)	140 ps	Input	DC input impedance	50Ω	RF input impedance	50Ω	50Ω noise figure	4.5 dB (@ $f < 1 \text{ GHz}$)	Equivalent input voltage noise	610 pV/ $\sqrt{\text{Hz}}$ (@ $f < 1 \text{ GHz}$)	Input VSWR	1.23 : 1 (@ $f < 2.5 \text{ GHz}$)	Input return loss	20 dB (@ $f < 2.5 \text{ GHz}$)
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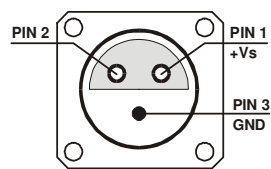
2.5 GHz High-Speed Amplifier

Specifications (continued)

Output	Output impedance 50 Ω Output VSWR 1.4 : 1 (@ f < 2.5 GHz) Output return loss 15.5 dB (@ f < 2.5 GHz) Output power P _{1dB} +13.5 dBm (@ f < 1 GHz) Output peak-to-peak voltage 2.0 V _{pp} (@ f < 500 MHz, for linear amplification) Output noise typ. 0.42 mV _{RMS} or 2.8 mV _{pp} * (measurement BW: 4 GHz)
	* The peak-to-peak output noise is derived from the RMS noise as follows: V _{pp} = V _{RMS} x 6.6 (99.9% of the time the output noise voltage will be within the specified peak-to-peak value.)
Power Supply	Supply voltage +15 V Supply current +105 mA
Case	Weight 100 g (0.23 lbs) Material AlMg4.5Mn, nickel-plated
Temperature Range	Storage temperature -40 ... +100 °C Operating ambient temperature 0 ... +60 °C

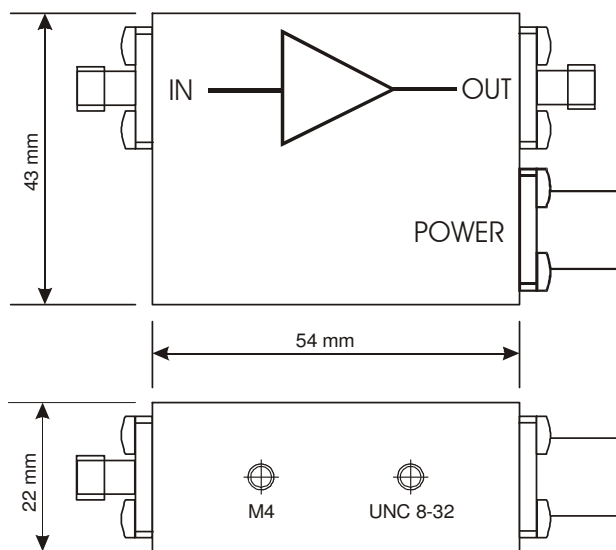
Absolute Maximum Ratings	Power supply voltage +18.5 V DC and LF input voltage ±3 V RF input power +13 dBm
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Connectors	Input SMA, jack (female) Output SMA, jack (female) Power supply Lemo® series 1S, 3-pin fixed socket (mating plug type: FFA.1S.303.CLAC52) Pin 1: +15 V Pin 2: NC Pin 3: GND
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2.5 GHz High-Speed Amplifier

Dimensions



DZ01-0601-10

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