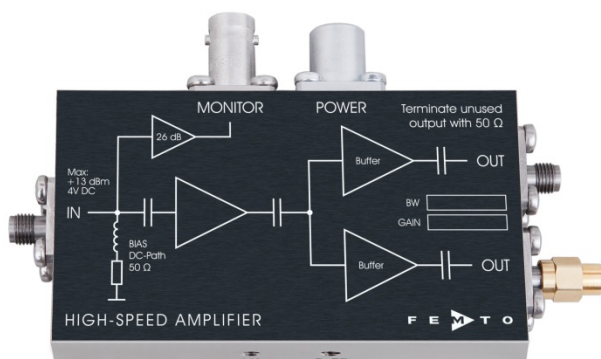


1 GHz High-Speed Amplifier



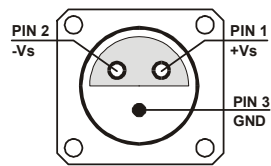
<p>Features</p>	<ul style="list-style-type: none"> • Bandwidth 10 kHz ... 1 GHz • Rise Time 330 ps • Gain 40 dB (5 kV/A) • Noise Figure 1.9 dB • Integrated Bias Circuit • Monitor Output • Two identical Signal Outputs 																																											
<p>Applications</p>	<ul style="list-style-type: none"> • Preamplifier for ultra-fast Detectors (Microchannel-Plates, Photomultipliers, Avalanche-Photodiodes, PIN-Photodiodes etc.) • Oscilloscope and Transient-Recorder Preamplifier • Time-Resolved Pulse and Transient Measurements 																																											
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<p>Specifications</p>	<table border="0"> <tr> <td>Test Conditions</td> <td colspan="2">$V_s = \pm 15\text{ V}$, $T_a = 25^\circ\text{C}$, System Impedance = $50\ \Omega$</td> </tr> <tr> <td>Gain</td> <td>Gain</td> <td>40 dB (5 kV/A)</td> </tr> <tr> <td></td> <td>Gain Accuracy</td> <td>$\pm 1\text{ dB}$</td> </tr> <tr> <td></td> <td>Gain Flatness</td> <td>$\pm 0.1\text{ dB}$</td> </tr> <tr> <td>Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>10 kHz</td> </tr> <tr> <td></td> <td>Upper Cut-Off Frequency</td> <td>1 GHz</td> </tr> <tr> <td>Time Response</td> <td>Rise / Fall Time (10% - 90%)</td> <td>330 ps</td> </tr> <tr> <td>Input</td> <td>DC Input Impedance</td> <td>$50\ \Omega$</td> </tr> <tr> <td></td> <td>RF Input Impedance</td> <td>$50\ \Omega$</td> </tr> <tr> <td></td> <td>$50\ \Omega$ Noise Figure</td> <td>1.9 dB (@ $f < 700\text{ MHz}$)</td> </tr> <tr> <td></td> <td>Equivalent Input Voltage Noise</td> <td>$330\text{ pV}/\sqrt{\text{Hz}}$ (@ $f < 700\text{ MHz}$)</td> </tr> <tr> <td></td> <td>Equivalent Input Current Noise</td> <td>$6.6\text{ pA}/\sqrt{\text{Hz}}$ (@ $f < 700\text{ MHz}$)</td> </tr> <tr> <td></td> <td>Input VSWR</td> <td>1 : 1.45 (@ $f < 1.5\text{ GHz}$)</td> </tr> <tr> <td></td> <td>Maximum Input VSWR</td> <td>1 : 1.45 (@ $f < 3\text{ GHz}$)</td> </tr> </table>		Test Conditions	$V_s = \pm 15\text{ V}$, $T_a = 25^\circ\text{C}$, System Impedance = $50\ \Omega$		Gain	Gain	40 dB (5 kV/A)		Gain Accuracy	$\pm 1\text{ dB}$		Gain Flatness	$\pm 0.1\text{ dB}$	Frequency Response	Lower Cut-Off Frequency	10 kHz		Upper Cut-Off Frequency	1 GHz	Time Response	Rise / Fall Time (10% - 90%)	330 ps	Input	DC Input Impedance	$50\ \Omega$		RF Input Impedance	$50\ \Omega$		$50\ \Omega$ Noise Figure	1.9 dB (@ $f < 700\text{ MHz}$)		Equivalent Input Voltage Noise	$330\text{ pV}/\sqrt{\text{Hz}}$ (@ $f < 700\text{ MHz}$)		Equivalent Input Current Noise	$6.6\text{ pA}/\sqrt{\text{Hz}}$ (@ $f < 700\text{ MHz}$)		Input VSWR	1 : 1.45 (@ $f < 1.5\text{ GHz}$)		Maximum Input VSWR	1 : 1.45 (@ $f < 3\text{ GHz}$)
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1 GHz High-Speed Amplifier

Specifications (continued)	
Output	<p>Two identical Signal Outputs:</p> <p>Output Impedance 50 Ω</p> <p>Maximum Output VSWR 1 : 1.6 (@ f < 3 GHz)</p> <p>Output Power P_{1dB} + 11.5 dBm (@ f < 500 MHz)</p> <p>Output Peak-Peak Voltage 2 V_{pp} (@ f < 500 MHz, for linear Amplification)</p> <p>Isolation between Outputs 20 dB (@ f < 3 GHz)</p>
Monitor Amplifier	<p>Gain 26 dB (1 kV/A)</p> <p>Lower Cut-Off Frequency DC</p> <p>Upper Cut-Off Frequency 100 kHz</p> <p>Output Voltage ± 10 V (@ 10 kΩ load)</p>
Power Supply	<p>Supply Voltage ± 15 V</p> <p>Supply Current + 200 / -10 mA</p>
Case	<p>Weight 180 gr. (0.41 lbs)</p> <p>Material AlMg4.5Mn, nickel-plated</p>
Temperature Range	<p>Storage Temperature - 40 ... + 100 °C</p> <p>Operating Ambient Temperature 0 ... + 60 °C</p> <p>Operating Case Temperature 40 °C (@ Ta = 25 °C)</p>

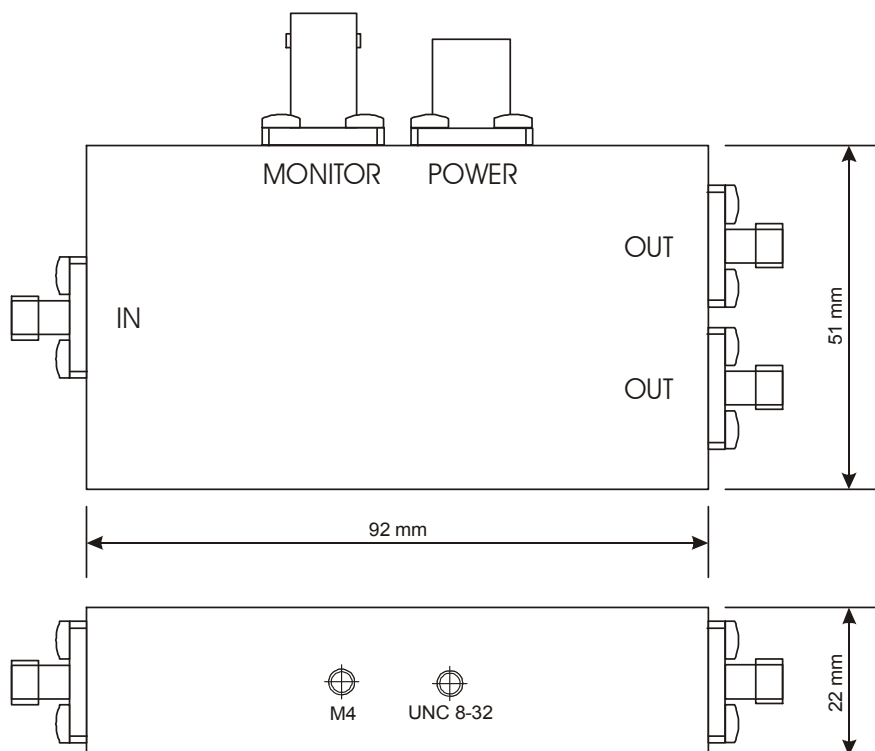
Absolute Maximum Ratings	<p>Power Supply Voltage ± 20 V</p> <p>DC and LF Input Voltage ± 4 V</p> <p>RF Input Power + 13 dBm</p>
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Connectors	<p>Input SMA</p> <p>Signal Outputs SMA</p> <p>Monitor Output BNC</p> <p>Power Supply LEMO Series 1S, 3-pin fixed Socket</p> <p>Pin 1: + 15 V</p> <p>Pin 2: - 15 V</p> <p>Pin 3: GND</p>
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1 GHz High-Speed Amplifier

Dimensions



DZ01-0611-10

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