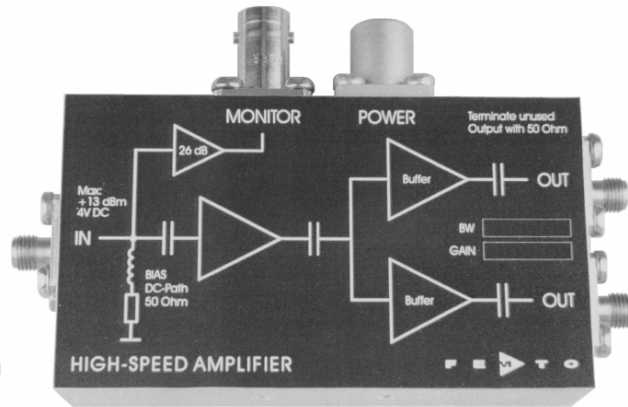


# 1 GHz High-Speed Amplifier



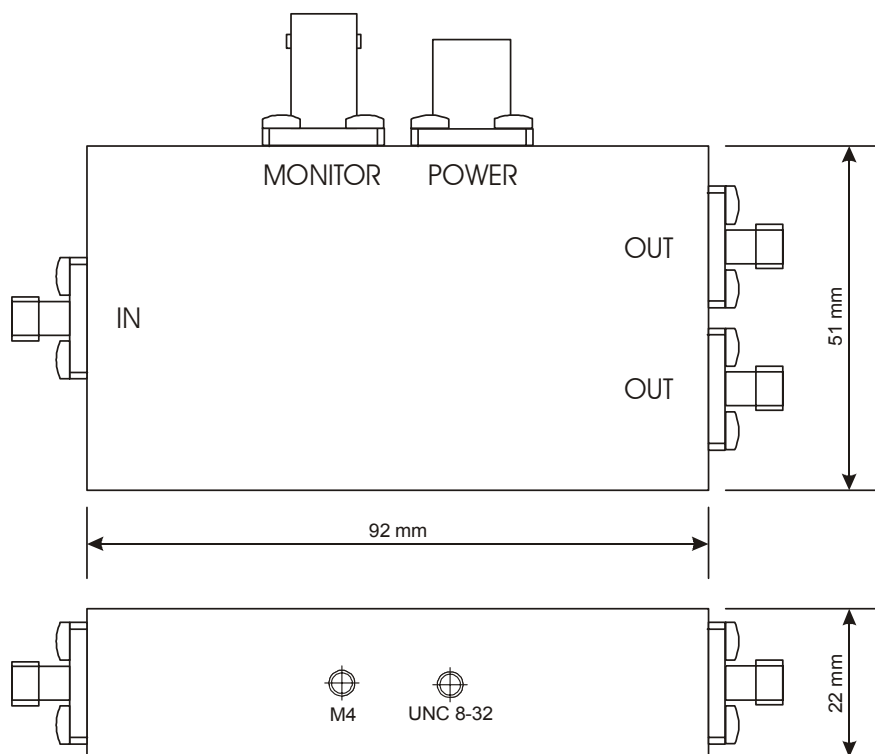
<p>Features</p>	<ul style="list-style-type: none"> <li>• <b>Bandwidth 10 kHz ... 1.1 GHz</b></li> <li>• <b>Rise Time 320 ps</b></li> <li>• <b>Gain 60 dB (50 kV/A)</b></li> <li>• <b>Noise Figure 1.9 dB</b></li> <li>• <b>Integrated Bias Circuit</b></li> <li>• <b>Monitor Output</b></li> <li>• <b>Two identical Signal Outputs</b></li> </ul>																																	
<p>Applications</p>	<ul style="list-style-type: none"> <li>• <b>Preamplifier for ultra-fast Detectors (Microchannel-Plates, Photomultipliers, Avalanche-Photodiodes, PIN-Photodiodes etc.)</b></li> <li>• <b>Oscilloscope and Transient-Recorder Preamplifier</b></li> <li>• <b>Time-Resolved Pulse and Transient Measurements</b></li> </ul>																																	
<p>Block Diagram</p>																																		
<p>Specifications</p>	<table border="0"> <tr> <td></td> <td><i>Test Conditions</i></td> <td><i>V<sub>s</sub> = ± 15 V, T<sub>a</sub> = 25°C, System Impedance = 50 Ω</i></td> </tr> <tr> <td rowspan="3">Gain</td> <td>Gain</td> <td>60 dB (50 kV/A)</td> </tr> <tr> <td>Gain Accuracy</td> <td>± 1 dB</td> </tr> <tr> <td>Gain Flatness</td> <td>± 0.2 dB</td> </tr> <tr> <td rowspan="2">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>10 kHz</td> </tr> <tr> <td>Upper Cut-Off Frequency</td> <td>1.1 GHz</td> </tr> <tr> <td>Time Response</td> <td>Rise / Fall Time (10% - 90%)</td> <td>320 ps</td> </tr> <tr> <td rowspan="7">Input</td> <td>DC Input Impedance</td> <td>50 Ω</td> </tr> <tr> <td>RF Input Impedance</td> <td>50 Ω</td> </tr> <tr> <td>50 Ω Noise Figure</td> <td>1.9 dB (@ f &lt; 700 MHz)</td> </tr> <tr> <td>Equivalent Input Voltage Noise</td> <td>330 pV/√Hz (@ f &lt; 700 MHz)</td> </tr> <tr> <td>Equivalent Input Current Noise</td> <td>6.6 pA/√Hz (@ f &lt; 700 MHz)</td> </tr> <tr> <td>Input VSWR</td> <td>1 : 1.4 (@ f &lt; 1.5 GHz)</td> </tr> <tr> <td>Maximum Input VSWR</td> <td>1 : 1.4 (@ f &lt; 3 GHz)</td> </tr> </table>		<i>Test Conditions</i>	<i>V<sub>s</sub> = ± 15 V, T<sub>a</sub> = 25°C, System Impedance = 50 Ω</i>	Gain	Gain	60 dB (50 kV/A)	Gain Accuracy	± 1 dB	Gain Flatness	± 0.2 dB	Frequency Response	Lower Cut-Off Frequency	10 kHz	Upper Cut-Off Frequency	1.1 GHz	Time Response	Rise / Fall Time (10% - 90%)	320 ps	Input	DC Input Impedance	50 Ω	RF Input Impedance	50 Ω	50 Ω Noise Figure	1.9 dB (@ f < 700 MHz)	Equivalent Input Voltage Noise	330 pV/√Hz (@ f < 700 MHz)	Equivalent Input Current Noise	6.6 pA/√Hz (@ f < 700 MHz)	Input VSWR	1 : 1.4 (@ f < 1.5 GHz)	Maximum Input VSWR	1 : 1.4 (@ f < 3 GHz)
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<p>Output</p>	<p>Two identical Signal Outputs:</p> <p>Output Impedance            50 Ω</p> <p>Maximum Output VSWR       1 : 1.4        (@ f &lt; 3 GHz)</p> <p>Output Power P<sub>1dB</sub>            + 13 dBm      (@ f &lt; 500 MHz)</p> <p>Output Peak-Peak Voltage    2.3 Vpp        (@ f &lt; 500 MHz, for linear Amplification)</p> <p>Isolation between Outputs    16 dB          (@ f &lt; 3 GHz)</p>
<p>Monitor Amplifier</p>	<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        (@ 10kΩ load)</p>
<p>Power Supply</p>	<p>Supply Voltage                 ± 15 V</p> <p>Supply Current                 + 180 / -10 mA</p>
<p>Case</p>	<p>Weight                            180 gr. (0.41 lbs)</p> <p>Material                          AlMg4.5Mn, nickel-plated</p>
<p>Temperature Range</p>	<p>Storage Temperature          - 40 ... + 100 °C</p> <p>Operating Ambient Temperature 0 ... + 60 °C</p> <p>Operating Case Temperature 39 °C        (@ Ta = 25 °C)</p>
<p>Absolute Maximum Ratings</p>	<p>Power Supply Voltage         ± 20 V</p> <p>DC and LF Input Voltage      ± 4 V</p> <p>RF Input Power                 + 13 dBm</p>
<p>Connectors</p>	<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> <div data-bbox="874 1473 1141 1635" style="text-align: center;"> </div>

# 1 GHz High-Speed Amplifier

Dimensions



DZ01-0611-10

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