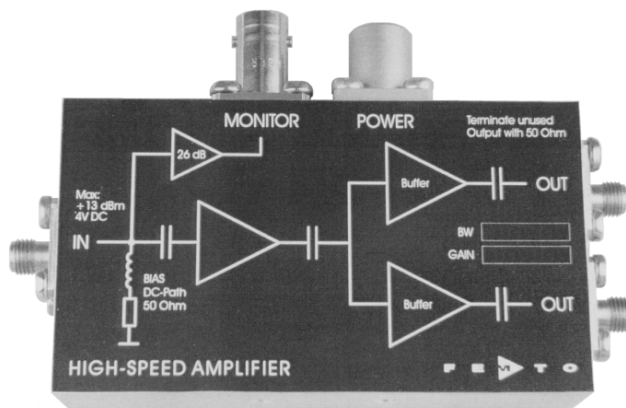


# 1 GHz High-Speed Amplifier



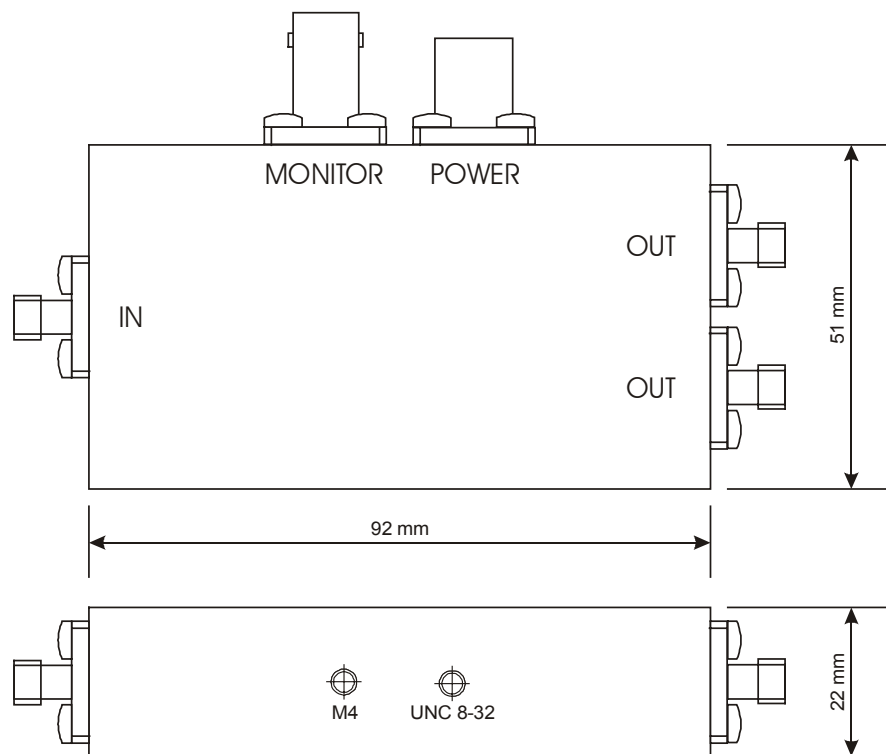
<p>Features</p>	<ul style="list-style-type: none"> <li>• <b>Bandwidth 10 kHz ... 1 GHz</b></li> <li>• <b>Rise Time 330 ps</b></li> <li>• <b>Gain 40 dB (5 kV/A)</b></li> <li>• <b>Noise Figure 1.9 dB</b></li> <li>• <b>Integrated Bias Circuit</b></li> <li>• <b>Monitor Output</b></li> <li>• <b>Two identical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

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<p>Output</p>	<p>Two identical Signal Outputs:</p> <p>Output Impedance                    50 Ω</p> <p>Maximum Output VSWR            1 : 1.6            (@ f &lt; 3 GHz)</p> <p>Output Power P<sub>1dB</sub>                + 11.5 dBm    (@ f &lt; 500 MHz)</p> <p>Output Peak-Peak Voltage        2 V<sub>pp</sub>            (@ f &lt; 500 MHz, for linear Amplification)</p> <p>Isolation between Outputs        20 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                    + 200 / -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    40 °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 1467 1141 1624" style="text-align: center;"> </div>

# 1 GHz High-Speed Amplifier

Dimensions



DZ01-0611-10

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