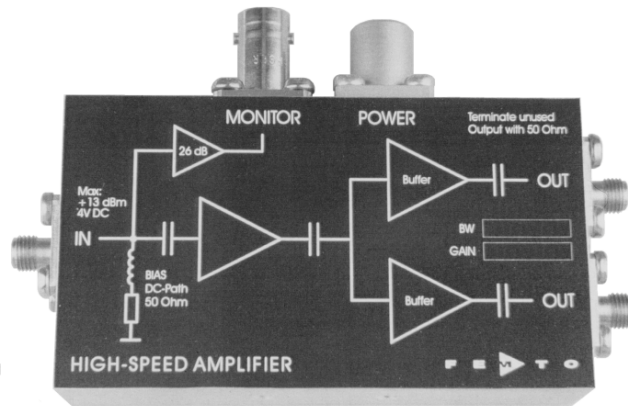




**Datasheet**

**HSA-Y-1-40**

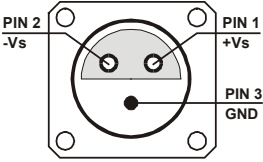
**1 GHz High-Speed Amplifier**



<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>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>	<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><b>Vs = ± 15 V, Ta = 25°C, System Impedance = 50 Ω</b></p> <p>40 dB (5 kV/A)</p> <p>± 1 dB</p> <p>± 0.1 dB</p> <p>10 kHz</p> <p>1 GHz</p> <p>330 ps</p> <p>50 Ω</p> <p>50 Ω</p> <p>1.9 dB (@ f &lt; 700 MHz)</p> <p>330 pV/√Hz (@ f &lt; 700 MHz)</p> <p>6.6 pA/√Hz (@ f &lt; 700 MHz)</p> <p>1 : 1.45 (@ f &lt; 1.5 GHz)</p> <p>1 : 1.45 (@ f &lt; 3 GHz)</p>

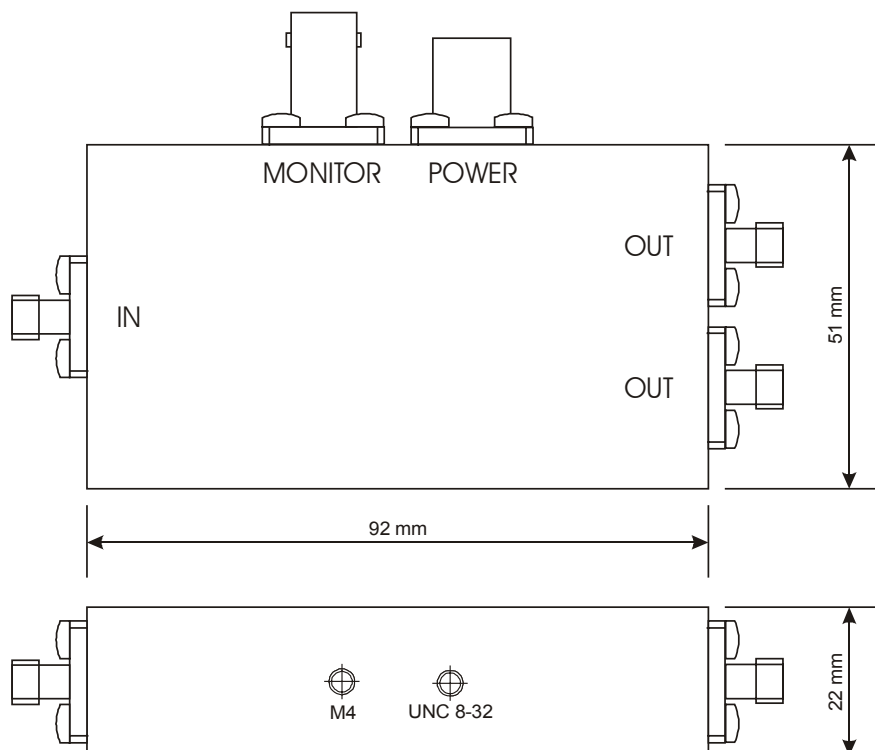


# 1 GHz High-Speed Amplifier

<p>Output</p>	<p>Two identical Signal Outputs:</p> <p>Output Impedance                    50 <math>\Omega</math></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                        <math>\pm 10</math> V            (@ 10k<math>\Omega</math> load)</p>
<p>Power Supply</p>	<p>Supply Voltage                        <math>\pm 15</math> 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 <math>^{\circ}</math>C</p> <p>Operating Ambient Temperature    0 ... + 60 <math>^{\circ}</math>C</p> <p>Operating Case Temperature        40 <math>^{\circ}</math>C            (@ T<sub>a</sub> = 25 <math>^{\circ}</math>C)</p>
<p>Absolute Maximum Ratings</p>	<p>Power Supply Voltage                <math>\pm 20</math> V</p> <p>DC and LF Input Voltage            <math>\pm 4</math> 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>
	

# 1 GHz High-Speed Amplifier

Dimensions



DZ01-0611-10

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