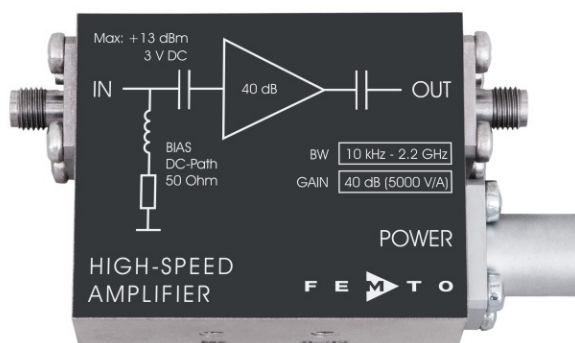
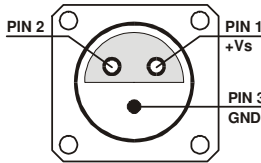
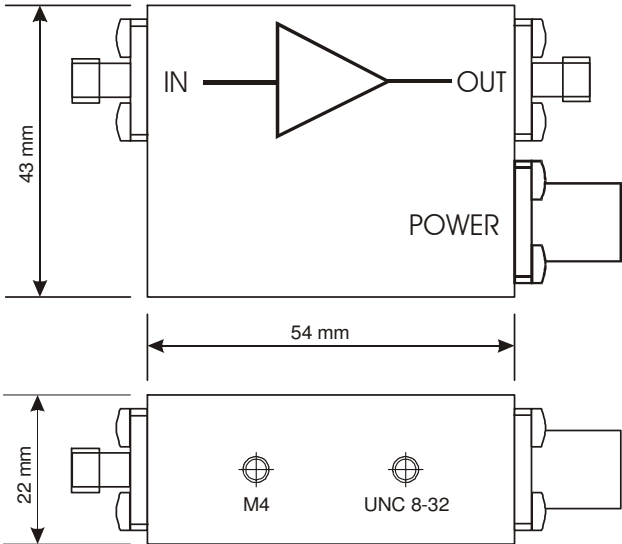


## 2.2 GHz High-Speed Amplifier



<p>Features</p>	<ul style="list-style-type: none"> <li>• <b>Bandwidth 10 kHz ... 2.2 GHz</b></li> <li>• <b>Rise time 160 ps</b></li> <li>• <b>Gain 40 dB</b></li> <li>• <b>Integrated bias circuit</b></li> </ul>																																													
<p>Applications</p>	<ul style="list-style-type: none"> <li>• <b>Preamplifier for ultra-fast detectors (microchannel-plates, photomultipliers, avalanche-photodiodes and PIN-photodiodes)</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>Test conditions</td> <td colspan="2"><math>V_s = +15\text{ V}</math>, <math>T_A = 25^\circ\text{C}</math>, System Impedance = <math>50\ \Omega</math></td> </tr> <tr> <td>Gain</td> <td>Gain</td> <td>40 dB</td> </tr> <tr> <td></td> <td>Gain accuracy</td> <td><math>\pm 1\text{ dB}</math></td> </tr> <tr> <td>Frequency Response</td> <td>Lower cut-off frequency (<math>-3\text{ dB}</math>)</td> <td>10 kHz (<math>\pm 20\%</math>)</td> </tr> <tr> <td></td> <td>Upper cut-off frequency (<math>-3\text{ dB}</math>)</td> <td>2.2 GHz (<math>\pm 15\%</math>)</td> </tr> <tr> <td></td> <td>Rise/fall time (10% - 90%)</td> <td>160 ps</td> </tr> <tr> <td>Input</td> <td>DC input impedance</td> <td><math>50\ \Omega</math></td> </tr> <tr> <td></td> <td>RF input impedance</td> <td><math>50\ \Omega</math></td> </tr> <tr> <td></td> <td><math>50\ \Omega</math> noise figure</td> <td>5.1 dB (@ <math>f &lt; 1\text{ GHz}</math>)</td> </tr> <tr> <td></td> <td>Equivalent input voltage noise</td> <td><math>670\text{ pV}/\sqrt{\text{Hz}}</math></td> </tr> <tr> <td></td> <td>Input VSWR</td> <td>1.5 : 1 (@ <math>f &lt; 2.5\text{ GHz}</math>)</td> </tr> <tr> <td></td> <td>Input return loss</td> <td>14 dB (@ <math>f &lt; 2.5\text{ GHz}</math>)</td> </tr> <tr> <td>Output</td> <td>Output impedance</td> <td><math>50\ \Omega</math></td> </tr> <tr> <td></td> <td>Output power <math>P_{1\text{dB}}</math></td> <td>+12.5 dBm (@ <math>f &lt; 1\text{ GHz}</math>)</td> </tr> <tr> <td></td> <td>Output peak-to-peak voltage</td> <td>2.0 V<sub>pp</sub> (@ <math>f &lt; 500\text{ MHz}</math>, for linear amplification)</td> </tr> </table>	Test conditions	$V_s = +15\text{ V}$ , $T_A = 25^\circ\text{C}$ , System Impedance = $50\ \Omega$		Gain	Gain	40 dB		Gain accuracy	$\pm 1\text{ dB}$	Frequency Response	Lower cut-off frequency ( $-3\text{ dB}$ )	10 kHz ( $\pm 20\%$ )		Upper cut-off frequency ( $-3\text{ dB}$ )	2.2 GHz ( $\pm 15\%$ )		Rise/fall time (10% - 90%)	160 ps	Input	DC input impedance	$50\ \Omega$		RF input impedance	$50\ \Omega$		$50\ \Omega$ noise figure	5.1 dB (@ $f < 1\text{ GHz}$ )		Equivalent input voltage noise	$670\text{ pV}/\sqrt{\text{Hz}}$		Input VSWR	1.5 : 1 (@ $f < 2.5\text{ GHz}$ )		Input return loss	14 dB (@ $f < 2.5\text{ GHz}$ )	Output	Output impedance	$50\ \Omega$		Output power $P_{1\text{dB}}$	+12.5 dBm (@ $f < 1\text{ GHz}$ )		Output peak-to-peak voltage	2.0 V <sub>pp</sub> (@ $f < 500\text{ MHz}$ , for linear amplification)
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## 2.2 GHz High-Speed Amplifier

Specifications (continued)	<table border="0"> <tr> <td>Power Supply</td> <td>Supply voltage</td> <td>+15 V</td> </tr> <tr> <td></td> <td>Supply current</td> <td>+140 mA</td> </tr> <tr> <td>Case</td> <td>Weight</td> <td>100 g (0.23 lbs)</td> </tr> <tr> <td></td> <td>Material</td> <td>AlMg4.5Mn, nickel-plated</td> </tr> <tr> <td>Temperature Range</td> <td>Storage temperature</td> <td>-40 ... +100 °C</td> </tr> <tr> <td></td> <td>Operating ambient temperature</td> <td>0 ... +60 °C</td> </tr> </table>	Power Supply	Supply voltage	+15 V		Supply current	+140 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
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Dimensions	 <p style="text-align: right;">DZ01-0601-10</p>																		

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