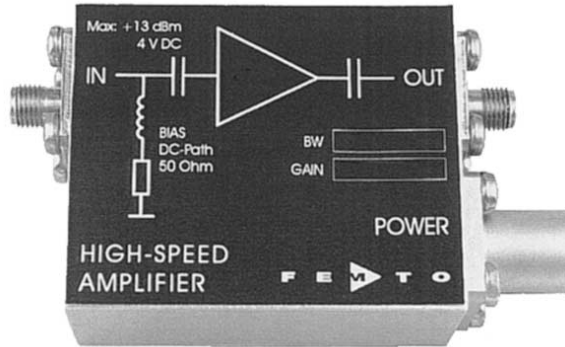




Datasheet

HSA-X-1-40

1.1 GHz High-Speed Amplifier



Features	<ul style="list-style-type: none"> • Bandwidth 10 kHz ... 1.1 GHz • Rise Time 320 ps • Gain 40 dB • Noise Figure 1.9 dB • Integrated Bias Circuit 																																												
Applications	<ul style="list-style-type: none"> • Preamplifier for ultra-fast Detectors (Microchannel-Plates, Photomultipliers, Avalanche-Photodiodes and PIN-Photodiodes) • Oscilloscope and Transient-Recorder Preamplifier • Time-Resolved Pulse and Transient Measurements 																																												
Block Diagram																																													
Specifications	<table border="0"> <tr> <td></td> <td><i>Test Conditions</i></td> <td><i>Vs = + 15 V, Ta = 25°C, System Impedance = 50 Ω</i></td> </tr> <tr> <td rowspan="4">Gain</td> <td>Gain</td> <td>40 dB</td> </tr> <tr> <td>Gain Accuracy</td> <td>± 1 dB</td> </tr> <tr> <td>Gain Flatness (overall)</td> <td>± 0.3 dB</td> </tr> <tr> <td></td> <td></td> <td></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 < 700 MHz)</td> </tr> <tr> <td>Equivalent Input Voltage Noise</td> <td>330 pV/√Hz (@ f < 700 MHz)</td> </tr> <tr> <td>Input VSWR</td> <td>1 : 1.3 (@ f < 1 GHz)</td> </tr> <tr> <td>Maximum Input VSWR</td> <td>1 : 1.5 (@ f < 2 GHz)</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td rowspan="3">Output</td> <td>Output Impedance</td> <td>50 Ω</td> </tr> <tr> <td>Output Power P_{1dB}</td> <td>402 mW (@ f < 500 MHz)</td> </tr> <tr> <td>Output Peak-Peak Voltage</td> <td>2.2 Vpp (@ f < 500 MHz, for linear Amplification)</td> </tr> </table>		<i>Test Conditions</i>	<i>Vs = + 15 V, Ta = 25°C, System Impedance = 50 Ω</i>	Gain	Gain	40 dB	Gain Accuracy	± 1 dB	Gain Flatness (overall)	± 0.3 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)	Input VSWR	1 : 1.3 (@ f < 1 GHz)	Maximum Input VSWR	1 : 1.5 (@ f < 2 GHz)				Output	Output Impedance	50 Ω	Output Power P _{1dB}	402 mW (@ f < 500 MHz)	Output Peak-Peak Voltage	2.2 Vpp (@ f < 500 MHz, for linear Amplification)
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HSA-X-1-40

1.1 GHz High-Speed Amplifier

Power Supply	Supply Voltage Supply Current	+ 15 V + 120 mA
Case	Weight Material	100 gr. (0.23 lbs) AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature Operating Ambient Temperature Operating Case Temperature	- 40 ... + 100 °C 0 ... + 60 °C 40 °C
Absolute Maximum Ratings	Power Supply Voltage DC and LF Input Voltage RF Input Power	+ 20 V ± 4 V + 13 dBm
Connectors	Input Output Power Supply	SMA SMA LEMO Series 1S, 3-pin fixed Socket Pin 1: + 15 V Pin 2: n.c. Pin 3: GND
Dimensions	<p style="text-align: right;">DZ01-0601-10</p>	

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