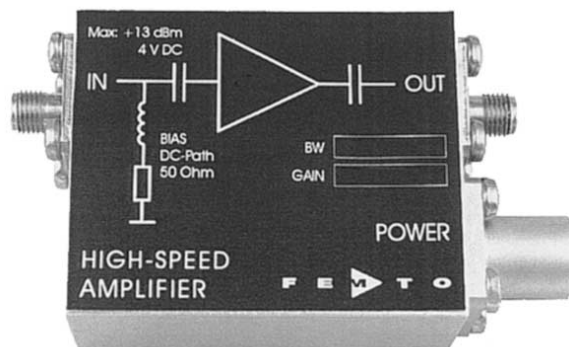


2 GHz High-Speed Amplifier



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|---|---|------|------|-------|--|---------------|--------|--|-------------------------|----------|--------------------|-------------------------|--------|--|-------------------------|-------|---------------|------------------------------|--------|-------|--------------------|------|--|--------------------|------|--|-------------------|----------------------|--|--------------------------------|--------------------------|--|------------|-----------------------|--|--------------------|-----------------------|--------|------------------|------|--|-------------------------------|--------------------------|--|--------------------------|---|
| <p>Features</p> | <ul style="list-style-type: none"> • Bandwidth 10 kHz ... 2 GHz • Rise Time 180 ps • Gain 40 dB • Input VSWR 1 : 1.1 • Integrated Bias Circuit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Applications</p> | <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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Block Diagram</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Specifications</p> | <p><i>Test Conditions</i> <i>Vs = + 15 V, Ta = 25°C, System Impedance = 50 Ω</i></p> <table border="0"> <tr> <td style="vertical-align: top;">Gain</td> <td>Gain</td> <td>40 dB</td> </tr> <tr> <td></td> <td>Gain Accuracy</td> <td>± 1 dB</td> </tr> <tr> <td></td> <td>Gain Flatness (overall)</td> <td>± 0.3 dB</td> </tr> <tr> <td style="vertical-align: top;">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>10 kHz</td> </tr> <tr> <td></td> <td>Upper Cut-Off Frequency</td> <td>2 GHz</td> </tr> <tr> <td style="vertical-align: top;">Time Response</td> <td>Rise / Fall Time (10% - 90%)</td> <td>180 ps</td> </tr> <tr> <td style="vertical-align: top;">Input</td> <td>DC Input Impedance</td> <td>50 Ω</td> </tr> <tr> <td></td> <td>RF Input Impedance</td> <td>50 Ω</td> </tr> <tr> <td></td> <td>50 Ω Noise Figure</td> <td>5.1 dB (@ f < 1 GHz)</td> </tr> <tr> <td></td> <td>Equivalent Input Voltage Noise</td> <td>670 pV/√Hz (@ f < 1 GHz)</td> </tr> <tr> <td></td> <td>Input VSWR</td> <td>1 : 1.1 (@ f < 1 GHz)</td> </tr> <tr> <td></td> <td>Maximum Input VSWR</td> <td>1 : 1.3 (@ f < 3 GHz)</td> </tr> <tr> <td style="vertical-align: top;">Output</td> <td>Output Impedance</td> <td>50 Ω</td> </tr> <tr> <td></td> <td>Output Power P_{1dB}</td> <td>+ 10.5 dBm (@ f < 1 GHz)</td> </tr> <tr> <td></td> <td>Output Peak-Peak Voltage</td> <td>1.9 Vpp (@ f < 500 MHz, for linear Amplification)</td> </tr> </table> | | 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 | 2 GHz | Time Response | Rise / Fall Time (10% - 90%) | 180 ps | Input | DC Input Impedance | 50 Ω | | RF Input Impedance | 50 Ω | | 50 Ω Noise Figure | 5.1 dB (@ f < 1 GHz) | | Equivalent Input Voltage Noise | 670 pV/√Hz (@ f < 1 GHz) | | Input VSWR | 1 : 1.1 (@ f < 1 GHz) | | Maximum Input VSWR | 1 : 1.3 (@ f < 3 GHz) | Output | Output Impedance | 50 Ω | | Output Power P _{1dB} | + 10.5 dBm (@ f < 1 GHz) | | Output Peak-Peak Voltage | 1.9 Vpp (@ f < 500 MHz, for linear Amplification) |
| 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 | 2 GHz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Time Response | Rise / Fall Time (10% - 90%) | 180 ps | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input | DC Input Impedance | 50 Ω | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | RF Input Impedance | 50 Ω | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 50 Ω Noise Figure | 5.1 dB (@ f < 1 GHz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Equivalent Input Voltage Noise | 670 pV/√Hz (@ f < 1 GHz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Input VSWR | 1 : 1.1 (@ f < 1 GHz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Maximum Input VSWR | 1 : 1.3 (@ f < 3 GHz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output | Output Impedance | 50 Ω | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Output Power P _{1dB} | + 10.5 dBm (@ f < 1 GHz) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Output Peak-Peak Voltage | 1.9 Vpp (@ f < 500 MHz, for linear Amplification) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

2 GHz High-Speed Amplifier

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|--------------------------|--|--|
| Power Supply | Supply Voltage Supply Current | + 15 V + 125 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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