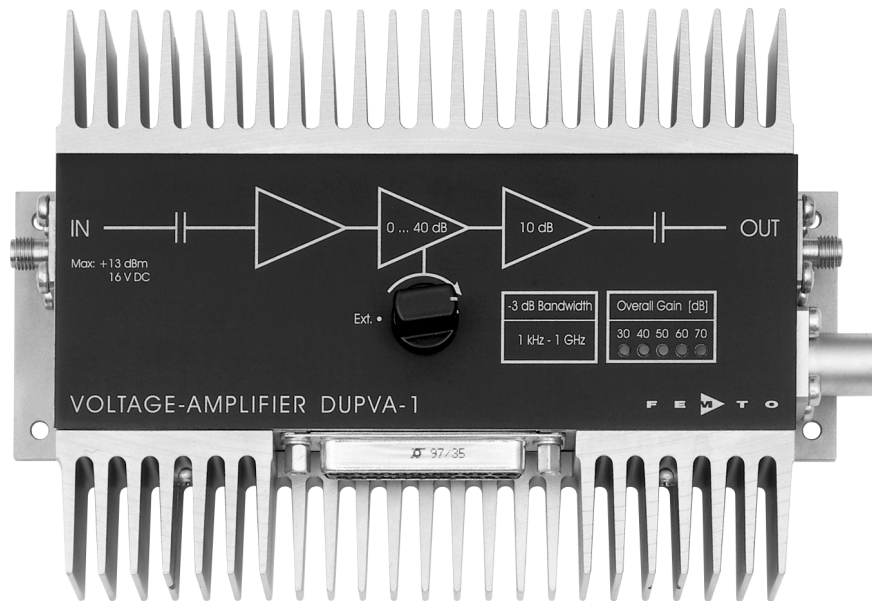


Variable-Gain Ultra-Wideband Voltage Amplifier

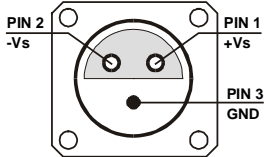


<p>Features</p>	<ul style="list-style-type: none"> • Variable Gain 30 to 70 dB, switchable in 10 dB Steps • Bandwidth 1 kHz ... 1.1 GHz • Bandwidth, Frequency- and Pulse Response independent of Gain Setting • Local and Remote Control • DC Monitor Output
<p>Applications</p>	<ul style="list-style-type: none"> • Oscilloscope and Transient-Recorder Preamplifier • Photomultiplier and Microchannel-Plate Amplifier • Signal-Booster for Optical Receivers and Current Amplifiers • Time-Resolved Pulse and Transient Measurements • Automated Measurement Systems
<p>Block Diagram</p>	<p style="text-align: right; font-size: small;">BS01-0641-13</p>

Variable-Gain Ultra-Wideband Voltage Amplifier

Specifications	<i>Test Conditions</i>	<i>V_s = ± 15 V, T_a = 25°C, System Impedance = 50 Ω</i>	
Gain	Gain Values	30, 40, 50, 60, 70 dB	
	Gain Accuracy	± 0.1 dB (between Settings) ± 1 dB (Overall)	
	Gain Flatness	± 0.15 dB	
Frequency Response	Lower Cut-Off Frequency	1 kHz	
	Upper Cut-Off Frequency	1.1 GHz	
	Upper Cut-Off Frequency Rolloff	40 dB/Oct.	
Time Response	Rise / Fall Time (10% - 90%)	390 ps	
	Group Delay	2.2 ns	
Input	Input Impedance AC	50 Ω	
	Input Impedance DC	100 kΩ	
	Input VSWR (@ 30 dB Gain)	1.1 : 1 (f < 1 GHz) 1.2 : 1 (f < 2 GHz)	
	Input VSWR (@ 40 – 70 dB Gain)	1.7 : 1 (f < 1 GHz) 1.7 : 1 (f < 2 GHz)	
	50 Ω Noise Figure	1.9 dB (@ 70 dB Gain) 2.5 dB (@ 40 – 60 dB Gain)	
	Equivalent Input Voltage Noise	330 pV/√Hz (@ 70 dB Gain) 400 pV/√Hz (@ 40 – 60 dB Gain)	
	1/f-Noise Corner	20 kHz	
	Output	Output Impedance	50 Ω
		Output Power P _{1dB}	12 dBm (@ 100 MHz) 11 dBm (@ 500 MHz)
Output Peak-Peak Voltage for linear Amplification		2 V (@ 100 MHz) 1.7 V (@ 500 MHz)	
Output VSWR		1.5 : 1 (f < 1 GHz) 1.7 : 1 (f < 2 GHz)	
Third Order Intercept Point IP ₃		20 dBm	
Reverse Isolation		80 dB	
Dynamic Range (w/o Average)		62 dB (P _{1dB} – Min. Detectable Signal)	
Monitor Output		Monitor Output Gain	1
	Monitor Output Voltage Range	± 10 V	
	Monitor Output Current	± 25 mA	
	Monitor Output Bandwidth	DC ... 100 kHz	
Digital Control	Control Input Voltage Range	Low: - 0.8 ... + 0.8 V High: + 1.8 ... + 12 V	
Power Supply	Supply Voltage	± 15 V	
	Supply Current	+ 250 / -100 mA	
	Stabilized Power Supply Output	± 12 V / max. 100 mA, + 5V / max. 50 mA	
Case	Weight	510 gr. (1.2 lbs)	
	Material	AlMg4.5Mn, nickel-plated	
Temperature Range	Storage Temperature	-40 ... +100 °C	
	Operating Temperature	0 ... +60 °C	

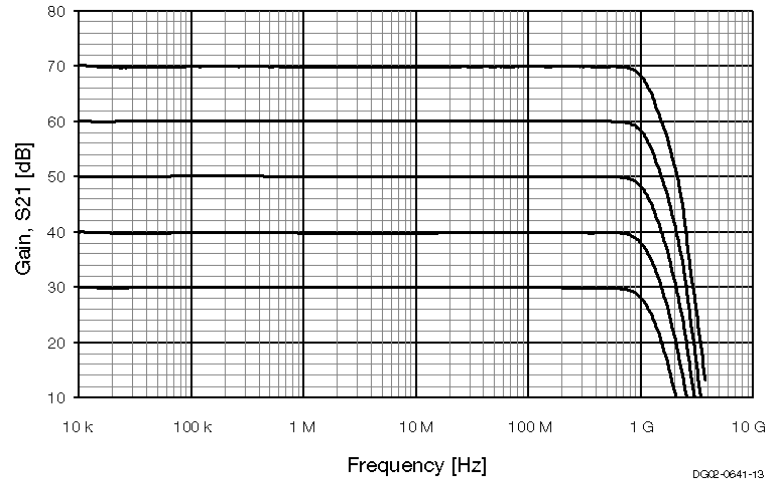
Variable-Gain Ultra-Wideband Voltage Amplifier

Absolute Maximum Ratings	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Signal Input Power</td> <td style="padding: 2px;">+ 13 dBm</td> <td style="padding: 2px;">(f > 1 kHz)</td> </tr> <tr> <td style="padding: 2px;">Signal Input DC Voltage</td> <td style="padding: 2px;">± 16 V</td> <td></td> </tr> <tr> <td style="padding: 2px;">Signal Output Reverse Power</td> <td style="padding: 2px;">+ 20 dBm</td> <td></td> </tr> <tr> <td style="padding: 2px;">Signal Output Reverse DC Voltage</td> <td style="padding: 2px;">+ 20 V / - 12 V</td> <td></td> </tr> <tr> <td style="padding: 2px;">Control Input Voltage</td> <td style="padding: 2px;">+ 16 V / - 5 V</td> <td></td> </tr> <tr> <td style="padding: 2px;">Power Supply Voltage</td> <td style="padding: 2px;">± 17 V</td> <td></td> </tr> </table>	Signal Input Power	+ 13 dBm	(f > 1 kHz)	Signal Input DC Voltage	± 16 V		Signal Output Reverse Power	+ 20 dBm		Signal Output Reverse DC Voltage	+ 20 V / - 12 V		Control Input Voltage	+ 16 V / - 5 V		Power Supply Voltage	± 17 V																		
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Variable-Gain Ultra-Wideband Voltage Amplifier

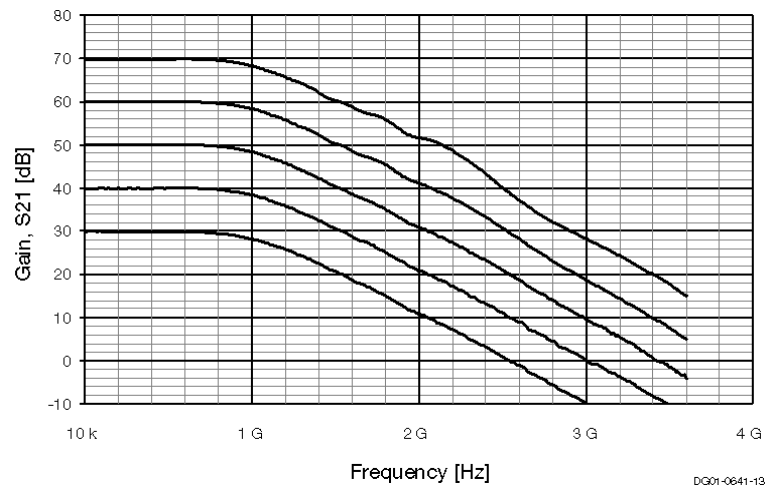
Typical Performance
Characteristics

Frequency Response (Logarithmic)



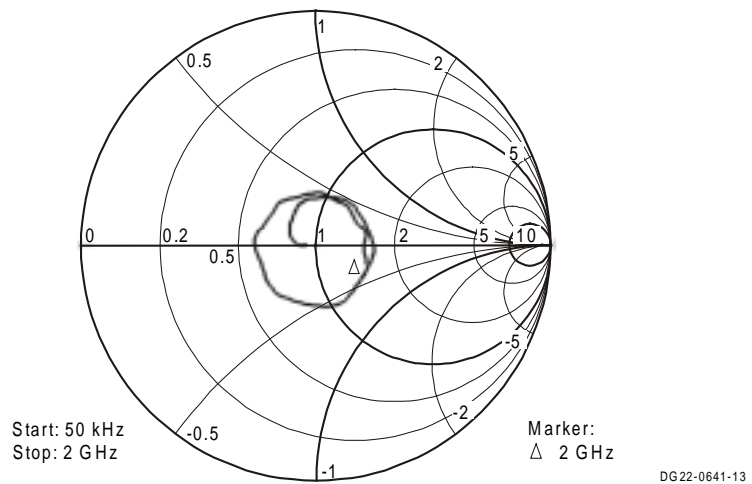
DG22-0641-13

Frequency Response (Linear)



DG01-0641-13

Input Reflection, S11

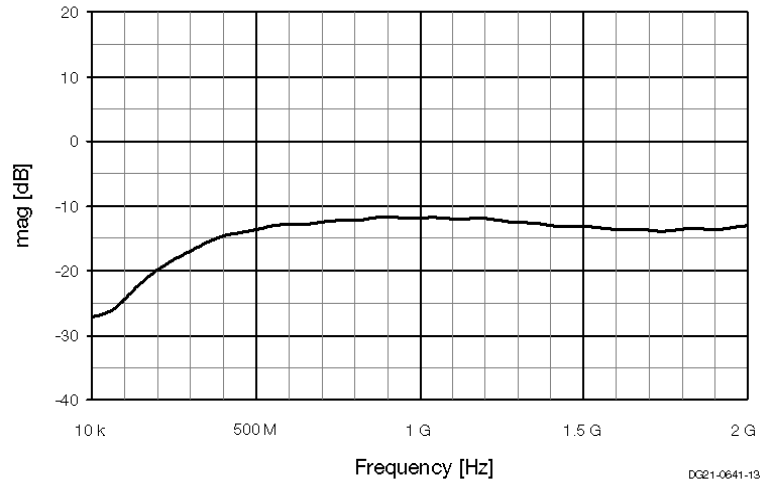


DG22-0641-13

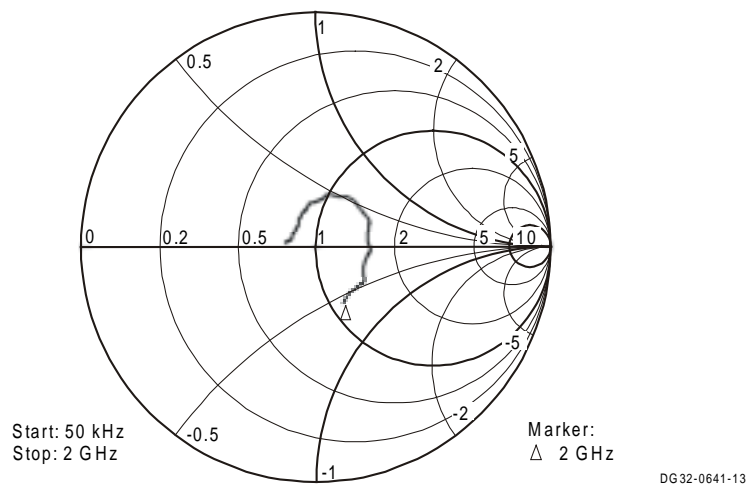
Variable-Gain Ultra-Wideband Voltage Amplifier

Typical Performance
Characteristics

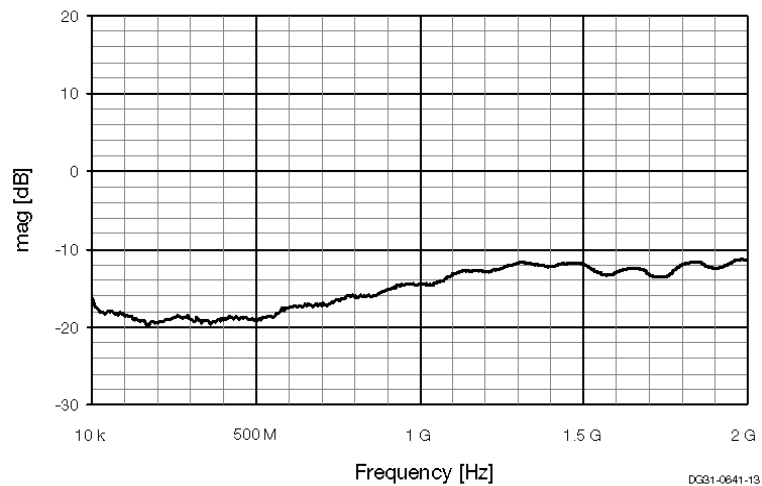
Input Return Loss, S11 (Linear Magnitude)



Output Reflection, S22

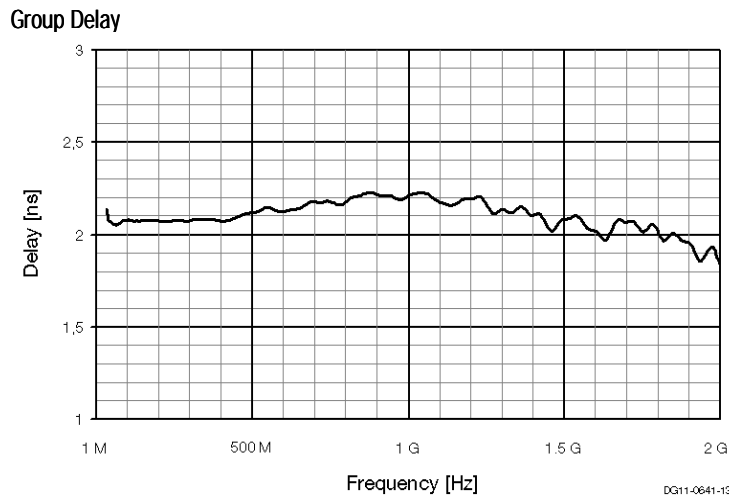


Output Return Loss, S22 (Linear Magnitude)

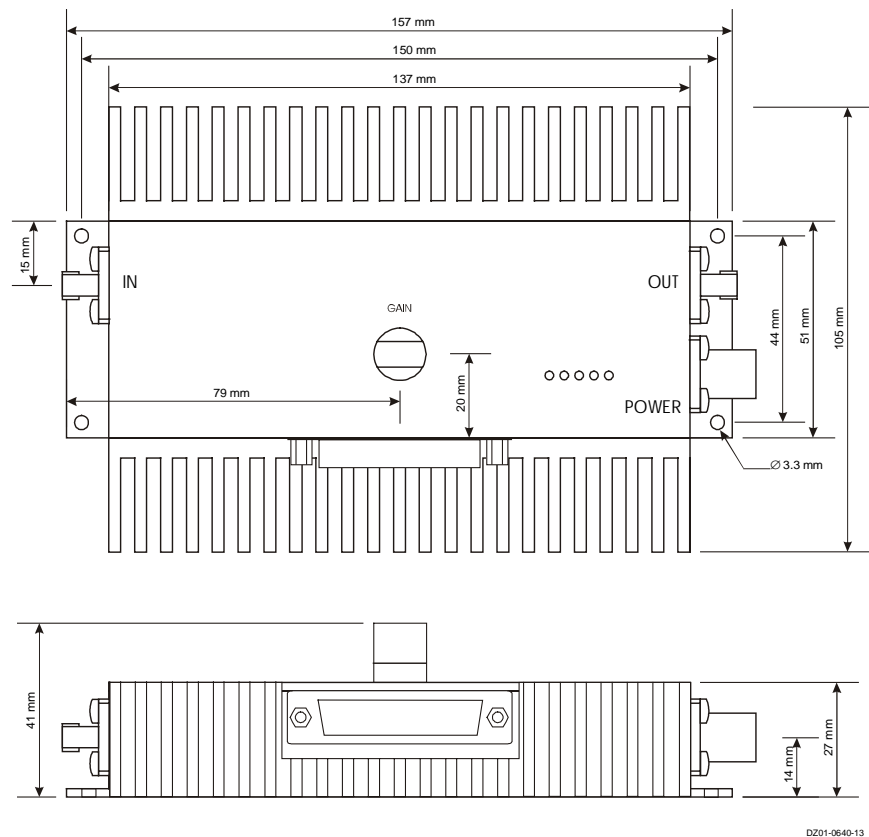


Variable-Gain Ultra-Wideband Voltage Amplifier

Typical Performance
Characteristics



Dimensions



Accessories

BNC-Adapterset

Model No.: ADAP-SMA-BNC-1
- Set of 2 SMA to BNC Adapters

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