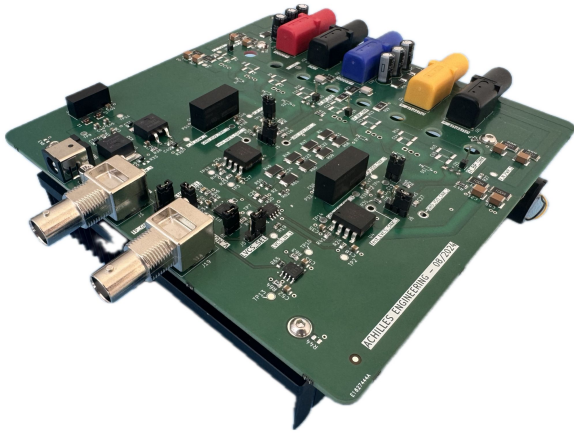


High-Voltage Amplifier for Capacitive Loads

For Dynamic Driving of (Piezo Electric) Actuators

HVA-1000-A



Highlighted Features

- High voltage capability
- Optimized for 100 pF - 2 nF loads
- Excellent dynamic frequency response
- Low noise behavior
- Integrated fan for full-stroke dynamic operation

Typical Applications

- Industrial actuation
- Precision mechanics
- Microscopy
- Semiconductor equipment

Specifications

Specification	Details	Comments
Amplifier type	Voltage	
Performance		
Input signal voltage range	-5V to +5V	
Output signal voltage range	-1000V to +1000V	At +/- 1000V supply
Voltage gain	200 +/- 2	
Load capacitance C_{load}	100 pF - 2 nF	Optimal performance
Output current drive capability	+/- 100 mA (source/sink)	
Small-signal bandwidth @ 2 nF	DC to 50 kHz (-3 dB)	Dependence on C_{load} : Fig. 1
Full-power bandwidth @ 2 nF	8 kHz	Higher for lower C_{load}
Output integrated noise	1 mV _{rms}	
Output offset voltage V_{OS}	< 32 mV	Before calibration
Output V_{OS} temperature drift	< 0.6 mV/K	
Input impedance	100 kΩ	
Environmental conditions		
Operating temperature range	-20°C to +30°C	Higher below full-power operation
Protection features		
Shorted load condition	Current limitation	
Open load condition	Stability maintained	
Overheating	Convection cooling with integrated fan. Shutdown protection	
Resources		
High-voltage power supply	Up to +/- 1000V DC dual supply, > 180 mA	+/- 50V above desired output signal range is sufficient
Low-voltage power supply	5V, > 300 mA	
Dimensions	165 mm x 165 mm x 60 mm	Incl. fan and housing, excl. BNC
Mass	Ca. 800 g	Incl. fan and housing
Interfaces		
High-voltage power supply	4 mm banana plugs: Positive supply (red) Negative supply (blue) Ground (black)	
Low-voltage power supply	DC power jack, 2.1 mm x 5.5 mm	
Analog signal input	BNC coaxial	< 200Ω Z_{out} recommended
Analog signal output/ load connection	4 mm banana plugs (19 mm apart): Signal (yellow) , ground (black)	Grounded output port
Monitoring signal output	BNC coaxial	200x voltage attenuation

Typical Characteristics

The typical characteristics of the high-voltage amplifier are depicted in the figures below.

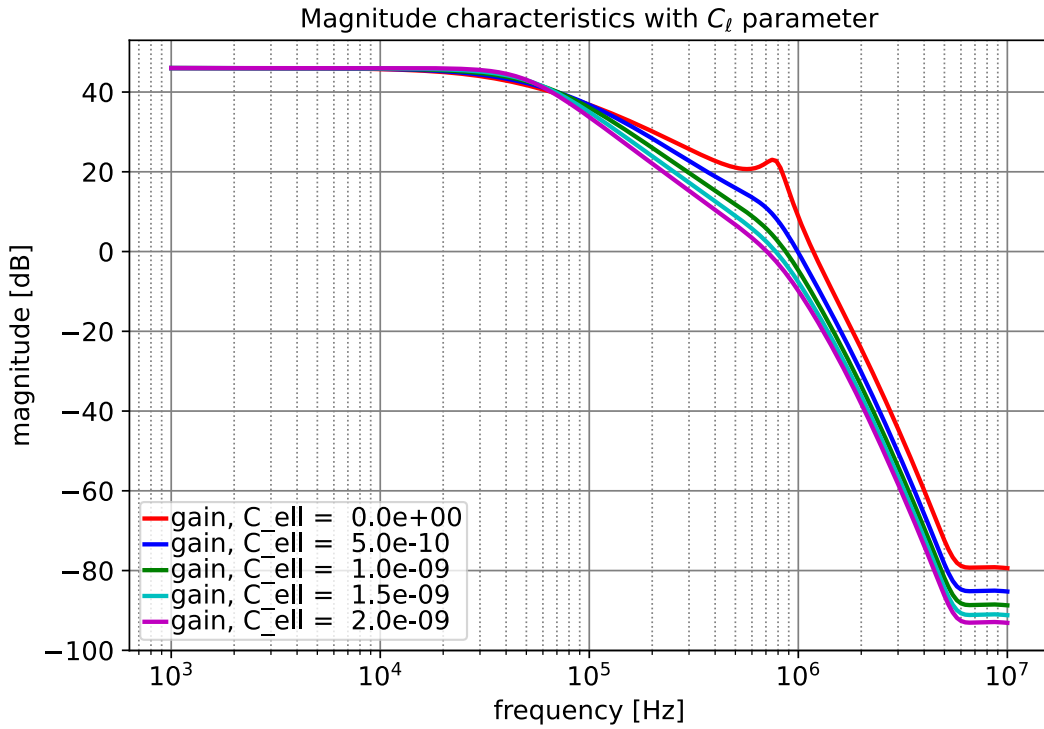


Figure 1: Small-signal frequency response of the amplifier at various load capacitances C_{load} .

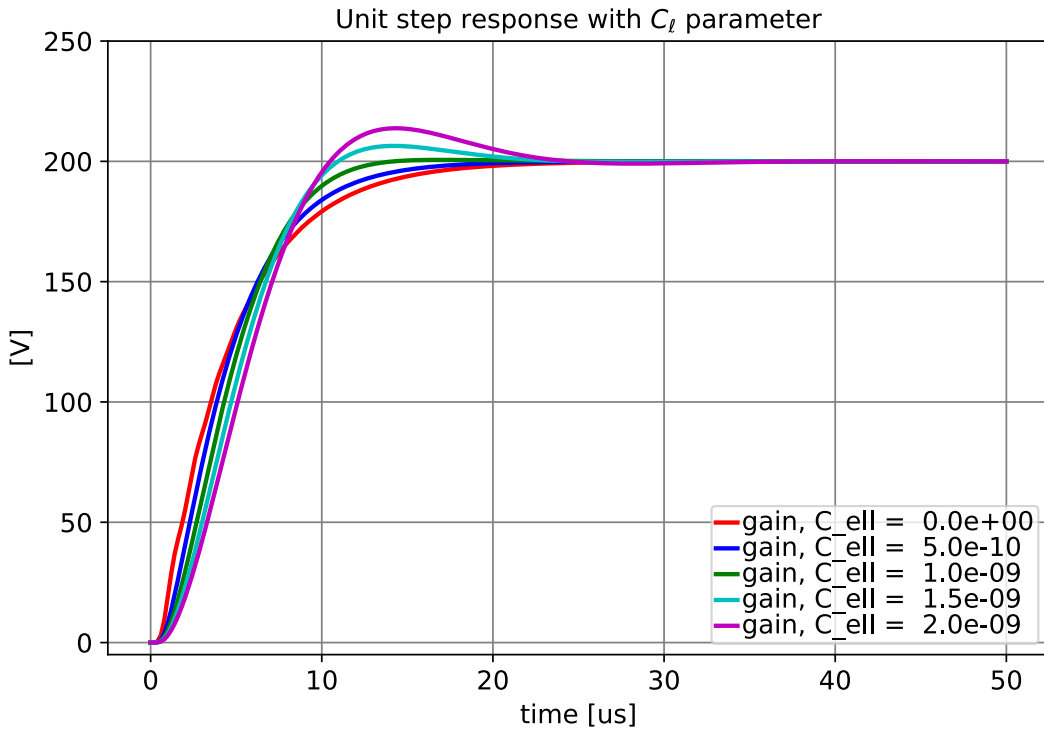


Figure 2: Small-signal unit step response of the amplifier at various load capacitances C_{load} .

Contact Information

For more information, to get a quote, or to ask questions, please contact us via e-mail or phone: