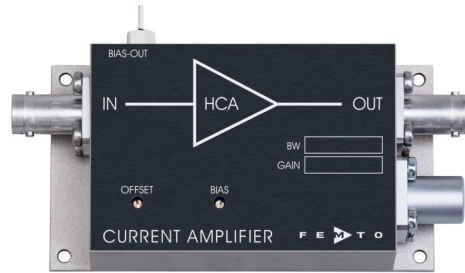


Datasheet

HCA-4M-500K

High-Speed Current Amplifier



Features

- Bandwidth and Frequency Response Independent of Detector Capacitance (up to 15 pF)
- Low Noise 490 fA/√Hz Equivalent Input Noise Current
- Bandwidth DC ... 4 MHz
- Transimpedance (Gain) 5×10^5 V/A
- Protection against ± 3.5 kV Transients

Applications

- Photodiode and Photomultiplier Amplifier
- Spectroscopy
- Charge Amplifier
- Ionisation Detectors
- Preamplifier for Lock-Ins, A/D Converters, etc.

Specifications

	Test Conditions	$V_s = \pm 15$ V, $T_a = 25^\circ\text{C}$
Gain	Transimpedance	5×10^5 V/A (@ 50 Ω load)
	Gain Accuracy	± 1 %
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency (-3 dB)	4 MHz
	Rise / Fall Time (10% - 90%)	90 ns
	Gain Flatness	± 0.3 dB
Input	Equ. Input Noise Current	490 fA/√Hz (@ 100 kHz)
	Equ. Input Noise Voltage	6 nV/√Hz (@ 100 kHz)
	Input Bias Current	5 pA typ.
	Input Bias Current Drift	Factor 1.7 / 10 K
	Offset Current Compensation	± 4 μ A adjustable by offset trimpot
	Input Current Range	± 3 μ A (for linear amplification)
	Input Offset Voltage	2 mV
	DC Input Impedance	50 Ω (virtual) // 5 pF
Output	Output Voltage Range	± 1.5 V (@ 50 Ω load) for linear operation and low harmonic distortion
	Output Impedance	50 Ω (terminate with 50 Ω load for best performance)
Bias Output	Bias Output Voltage Range	± 12 V, adjustable by bias trimpot
	Bias Output Impedance	10 k Ω // 1 μ F

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

F E M T O

DE-HCA-4M-500K_R3/JM/18MAR2019

Datasheet

HCA-4M-500K

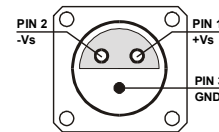
High-Speed Current Amplifier

Specifications (continued)

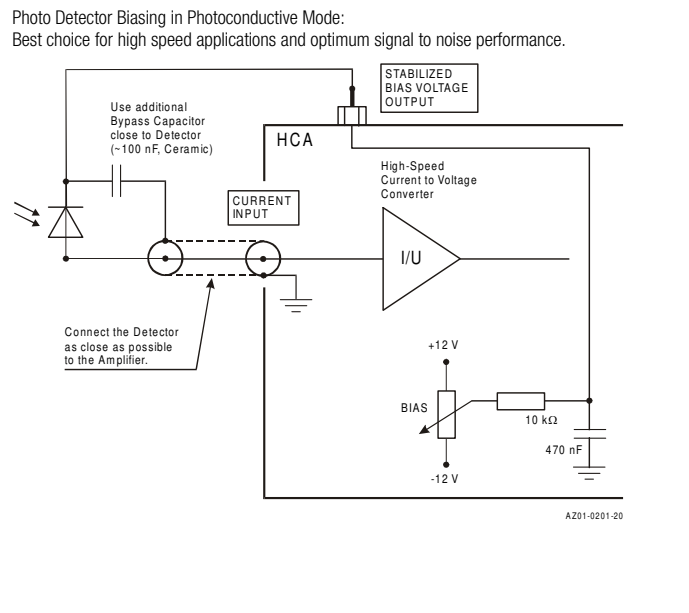
Power Supply	Supply Voltage Supply Current	± 15 V ± 50 mA typ. (depends on operating conditions, recommended power supply capability minimum ± 150 mA)
Case	Weight Material	210 g (0.5 lbs) AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature Operating Temperature	$-40 \dots +100$ °C $0 \dots +60$ °C
Absolute Maximum Ratings	Input Voltage Input Voltage Transient Power Supply Voltage	± 5 V ± 3.5 kV (pulsewidth 10 ns) ± 22 V

Connectors

Input	BNC
Output	BNC
Power Supply	LEMO series 1S, 3-pin fixed socket
	Pin 1: +15V
	Pin 2: -15V
	Pin 3: GND



Application Diagrams



SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

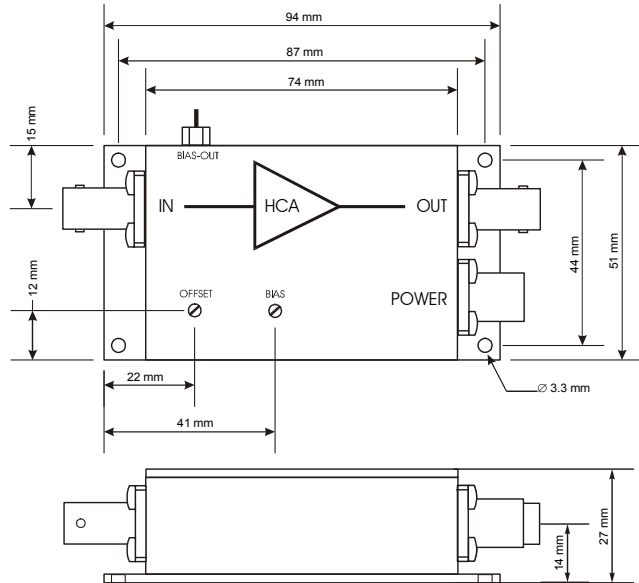


Datasheet

HCA-4M-500K

High-Speed Current Amplifier

Dimensions



DZ01-0201-22

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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

