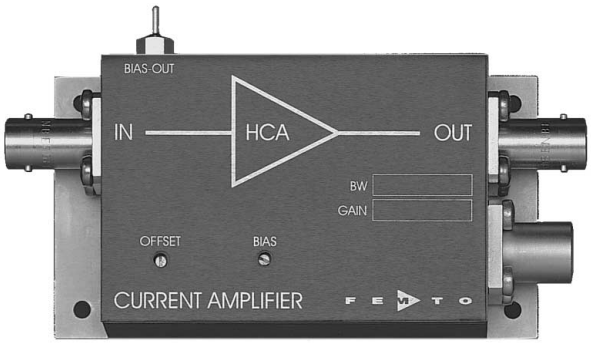
Datasheet HCA-4M-500K-C

High-Speed Current Amplifier



Features

- **Bandwidth and Frequency Response independent of Detector-Capacitance (up to 500 pF)**
- **Low Noise, 3.5 pA/√Hz equivalent Input Noise Current**
- **Bandwidth DC ... 4 MHz**
- **Transimpedance (Gain) 5 x 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.**

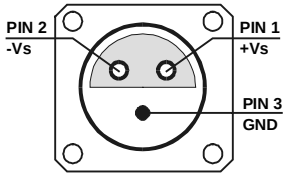
Specifications

	Test Conditions	*Vs = ± 15 V, Ta = 25°C*
Gain	Transimpedance	5 x 10^5 V/A (50 Ω Load)
	Gain Accuracy	± 1 %
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency	4 MHz (- 3 dB)
	Rise- / Fall-Time	90 ns (10% - 90%)
	Gain Flatness	± 0.3 dB
Input	Equ. Input Noise Current	3.5 pA/√Hz (@ 100 kHz)
	Equ. Input Noise Voltage	0.8 nV/√Hz (@ 100 kHz)
	Input Bias Current	18 µA typ.
	Input Bias Current Drift	0.8 nA / K
	Offset Current Compensation	± 6 µA, adjustable by Offset-Trimpot
	Max. Input Current	± 3 µA (linear Amplification)
	Input Offset Voltage	< 3 mV
	DC Input Impedance	50 Ω (virtual) // 5 pF
Output	Output Voltage	± 1.5 V (50 Ω Load)
	Output Impedance	50 Ω
Bias Output	Bias Output Voltage Range	± 12 V, adjustable by Bias-Trimpot
	Bias Output Impedance	10 kΩ // 1 µF
Power Supply	Supply Voltage	± 15 V
	Supply Current	± 50 mA typ.
Case	Weight	210 gr. (0.5 lbs)
	Material	AlMg4.5Mn, nickel-plated

High-Speed Current Amplifier

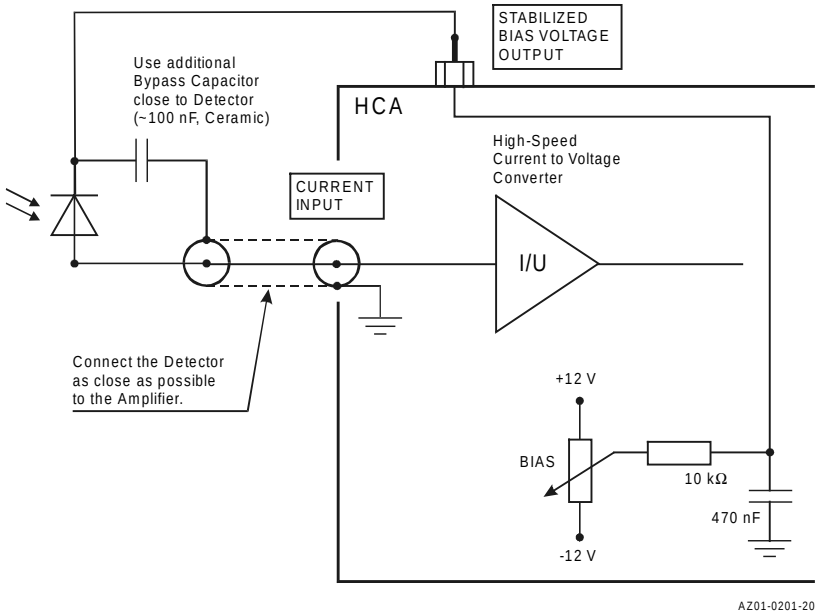
Specifications (continued)

Temperature Range	Storage Temperature	-40 ... +100 °C
	Operating Temperature	0 ... +60 °C
Absolute Maximum Ratings	Input Voltage	± 5 V
	Input Voltage Transient	± 3.5 kV (Pulsewidth 10 ns)
	Power Supply Voltage	± 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



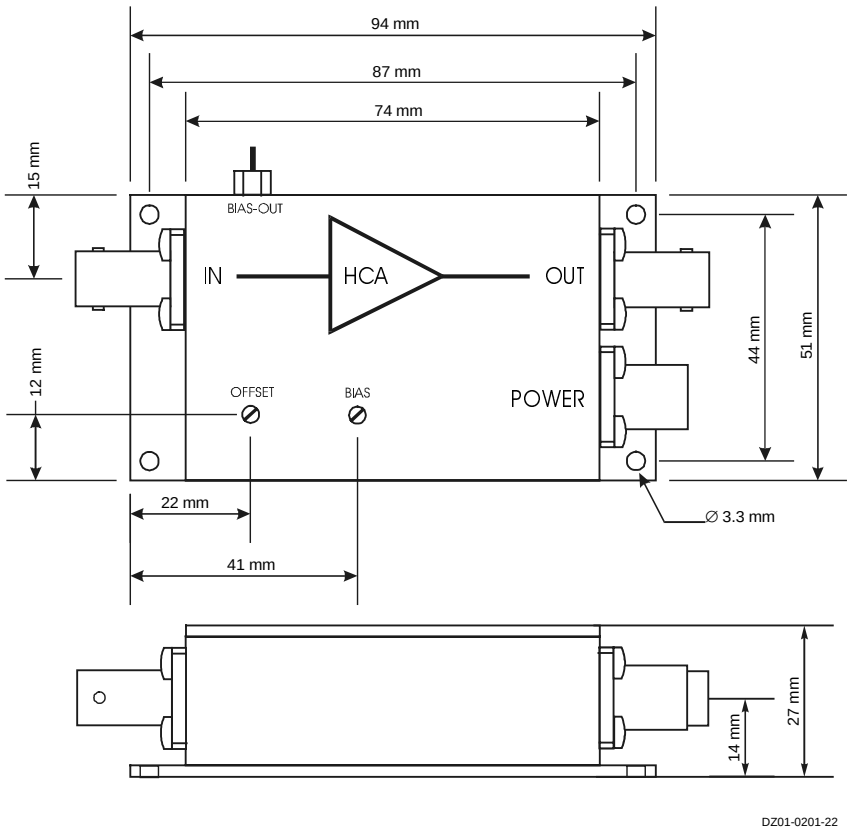
Application Diagrams

Photo Detector Biasing in Photoconductive Mode:
Best Choice for High-Speed Applications and
optimum Signal To Noise Performance.



High-Speed Current Amplifier

Dimensions



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