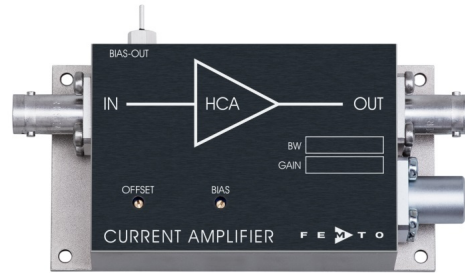


Datasheet

HCA-10M-100K

High-Speed Current Amplifier



Features

- **Bandwidth and Frequency Response Independent of Detector Capacitance (up to 15 pF)**
- **Low Noise 1.1pA/√Hz Equivalent Input Noise Current**
- **Bandwidth DC ... 10 MHz**
- **Transimpedance (Gain) 1×10^5 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	1×10^5 V/A (@ 50 Ω load)
	Gain Accuracy	± 1 %
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency (-3 dB)	10 MHz
	Rise / Fall Time (10% - 90%)	35 ns
	Gain Flatness	± 0.3 dB
Input	Equ. Input Noise Current	1.1 pA/√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	± 20 μ A adjustable by offset trimpot
	Input Current Range	± 15 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



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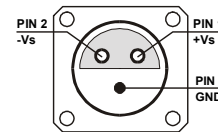
Datasheet

HCA-10M-100K

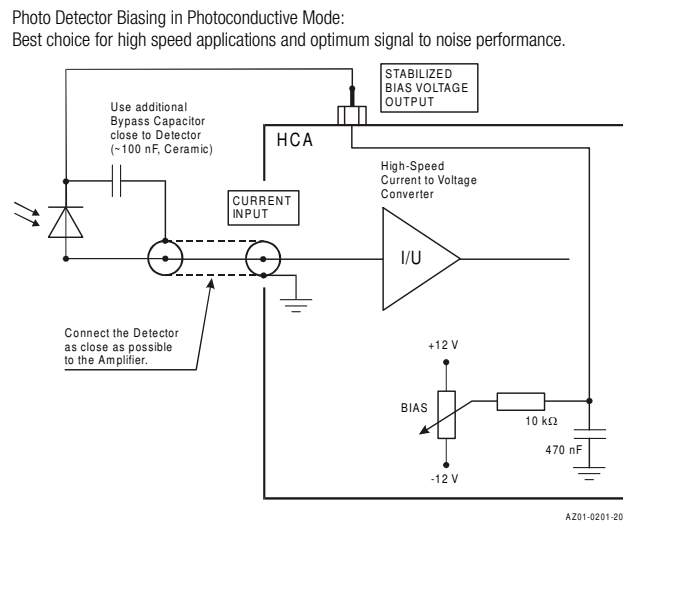
High-Speed Current Amplifier

Specifications (continued)

Power Supply	Supply Voltage Supply Current	$\pm 15\text{ V}$ $\pm 50\text{ mA typ.}$ (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$)
Case	Weight Material	210 g (0.5 lbs) AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature Operating Temperature	$-40 \dots +100\text{ }^\circ\text{C}$ $0 \dots +60\text{ }^\circ\text{C}$
Absolute Maximum Ratings	Input Voltage Input Voltage Transient Power Supply Voltage	$\pm 5\text{ V}$ $\pm 3.5\text{ kV}$ (pulsewidth 10 ns) $\pm 22\text{ V}$
Connectors	Input Output Power Supply	BNC BNC LEMO series 1S, 3-pin fixed socket Pin 1: +15V Pin 2: -15V Pin 3: GND



Application Diagrams



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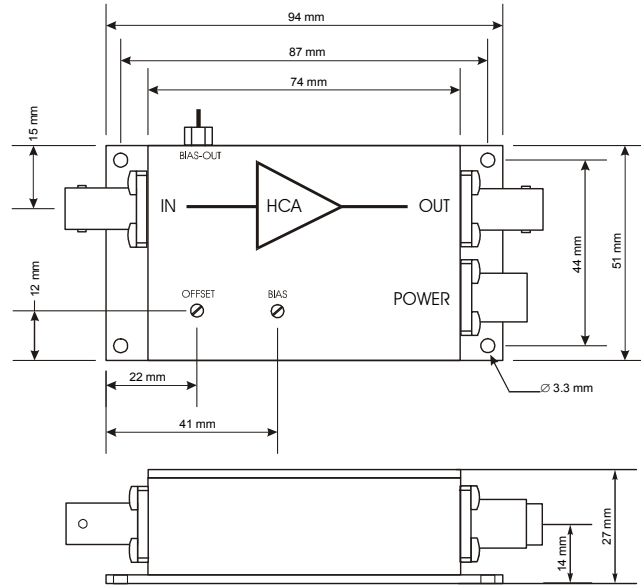


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HCA-10M-100K

High-Speed Current Amplifier

Dimensions



DZ01-0201-22

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