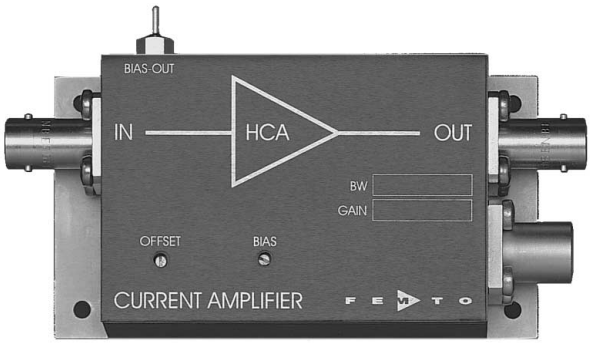
# Datasheet HCA-2M-1M-C

## High-Speed Current Amplifier



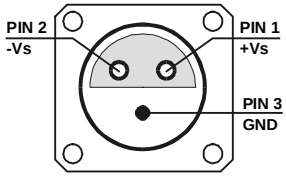

| | |
|---|---|
| Features | • **Bandwidth and Frequency Response independent of Detector-Capacitance (up to 1 nF)**<br>• **Low Noise, 3.5 pA/√Hz equivalent Input Noise Current**<br>• **Bandwidth DC ... 2 MHz**<br>• **Transimpedance (Gain) 1 x $10^6$ V/A**<br>• **Protection against ± 3.5 kV Transients** |
| Applications | • **Photodiode- and Photomultiplier-Amplifier**<br>• **Spectroscopy**<br>• **Charge-Amplifier**<br>• **Ionisation Detectors**<br>• **Preamplifier for Lock-Ins, A/D-Converters, etc.** |

| Specifications | *Test Conditions* | *Vs = ± 15 V, Ta = 25°C* |
|---|---|---|
| Gain | Transimpedance | 1 x $10^6$ V/A (50 Ω Load) |
| | Gain Accuracy | ± 1 % |
| Frequency Response | Lower Cut-Off Frequency | DC |
| | Upper Cut-Off Frequency | 2 MHz (- 3 dB) |
| | Rise- / Fall-Time | 180 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 | ± 1.5 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

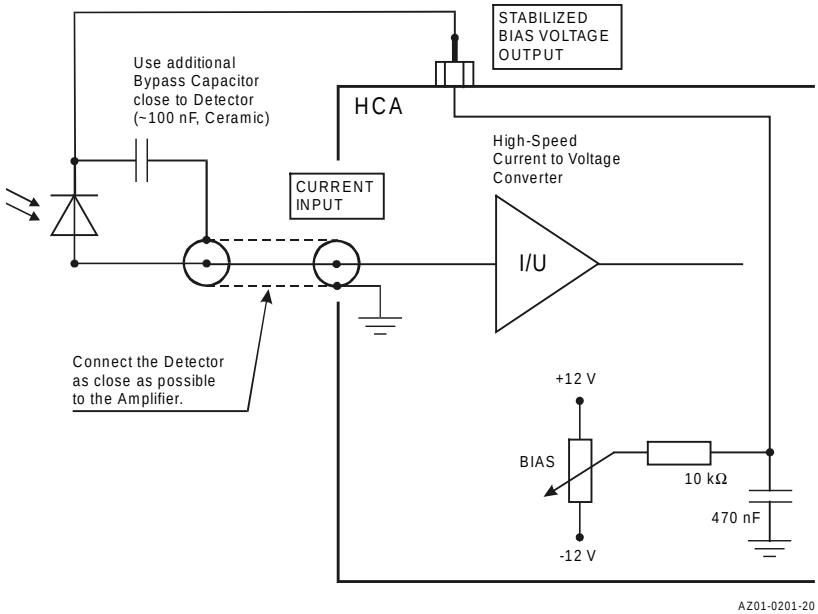
## Specifications (continued)

| | | |
|---|---|---|
| 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<br>Pin 1: + 15V<br>Pin 2: - 15V<br>Pin 3: GND |




Application Diagrams

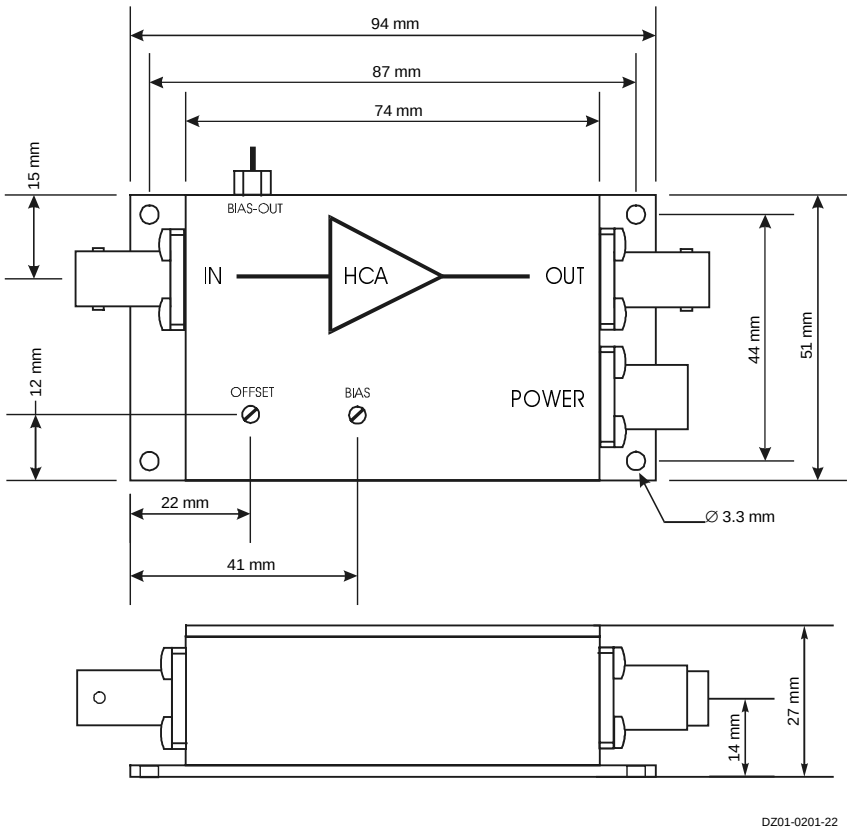
Photo Detector Biasing in Photoconductive Mode:
Best Choice for High-Speed Applications and
optimum Signal To Noise Performance.




AZ01-0201-20

# High-Speed Current Amplifier

Dimensions




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