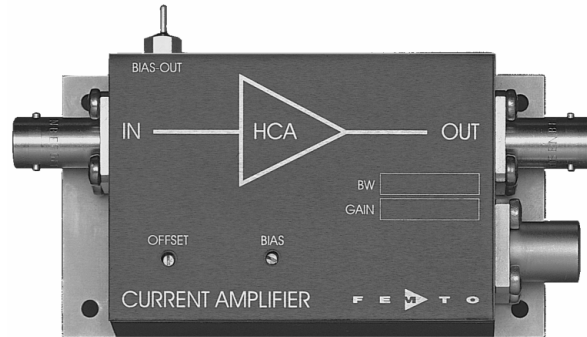




Datasheet

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 x 10⁵ 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.**

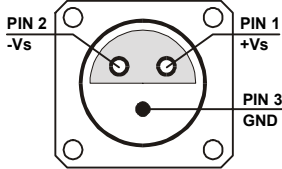
Specifications

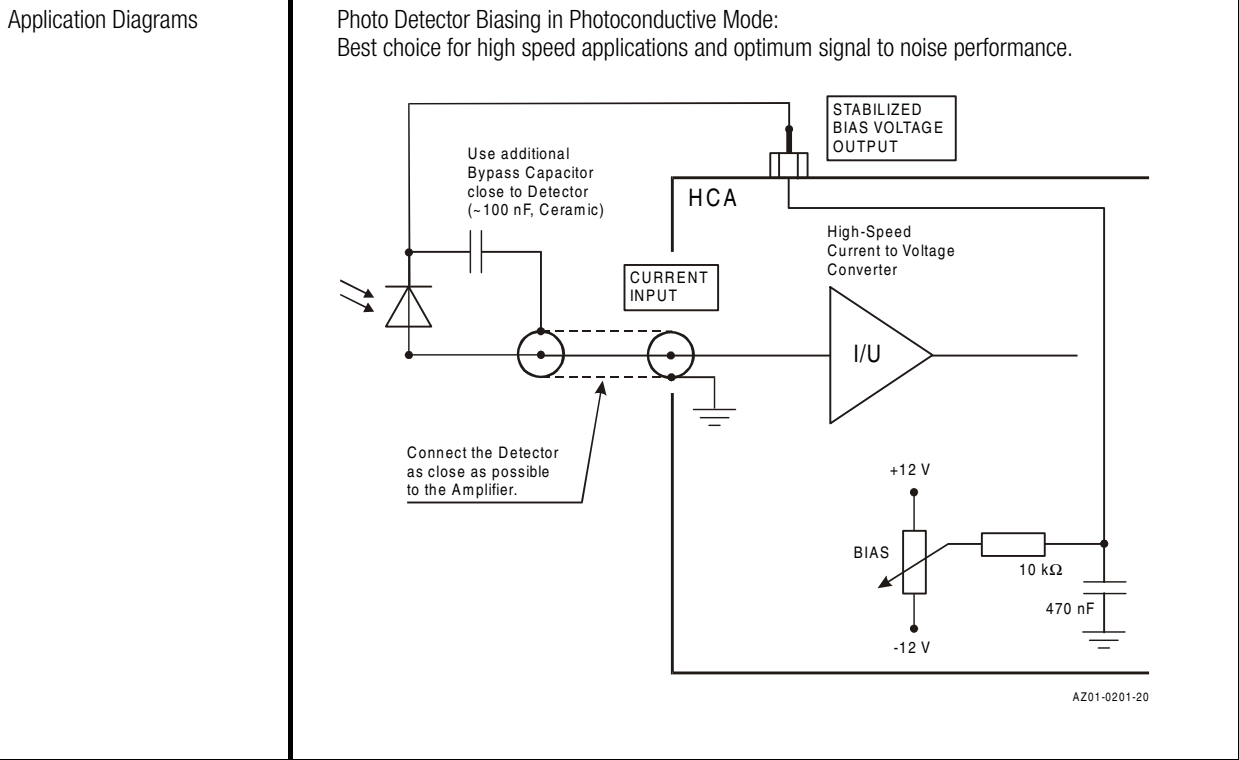
	<i>Test Conditions</i>	<i>Vs = ± 15 V, Ta = 25°C</i>
Gain	Transimpedance	1 x 10 ⁵ V/A (@ 50 Ω load)
	Gain Accuracy	± 1 %
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency (- 3 dB)	10 MHz
	Rise / Fall Time (10 % - 90 %)	35 ns
	Gain Flatness	± 0.3 dB
Input	Equ. Input Noise Current	1.1pA/√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 μA adjustable by offset trimpot
	Input Current Range	± 15 μA (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 kΩ // 1 μF

Datasheet

HCA-10M-100K

High Speed Current Amplifier

Specifications (continued)	<table border="0"> <tr> <td>Power Supply</td> <td>Supply Voltage</td> <td>$\pm 15\text{ V}$</td> </tr> <tr> <td></td> <td>Supply Current</td> <td>$\pm 50\text{ mA typ.}$ (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$)</td> </tr> <tr> <td>Case</td> <td>Weight</td> <td>210 g (0.5 lbs)</td> </tr> <tr> <td></td> <td>Material</td> <td>AlMg4.5Mn, nickel-plated</td> </tr> <tr> <td>Temperature Range</td> <td>Storage Temperature</td> <td>$-40 \dots +100\text{ }^\circ\text{C}$</td> </tr> <tr> <td></td> <td>Operating Temperature</td> <td>$0 \dots +60\text{ }^\circ\text{C}$</td> </tr> </table>	Power Supply	Supply Voltage	$\pm 15\text{ V}$		Supply Current	$\pm 50\text{ mA typ.}$ (depends on operating conditions, recommended power supply capability minimum $\pm 150\text{ mA}$)	Case	Weight	210 g (0.5 lbs)		Material	AlMg4.5Mn, nickel-plated	Temperature Range	Storage Temperature	$-40 \dots +100\text{ }^\circ\text{C}$		Operating Temperature	$0 \dots +60\text{ }^\circ\text{C}$
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Absolute Maximum Ratings	<table border="0"> <tr> <td>Input Voltage</td> <td>$\pm 5\text{ V}$</td> </tr> <tr> <td>Input Voltage Transient</td> <td>$\pm 3.5\text{ kV}$ (pulsewidth 10 ns)</td> </tr> <tr> <td>Power Supply Voltage</td> <td>$\pm 22\text{ V}$</td> </tr> </table>	Input Voltage	$\pm 5\text{ V}$	Input Voltage Transient	$\pm 3.5\text{ kV}$ (pulsewidth 10 ns)	Power Supply Voltage	$\pm 22\text{ V}$												
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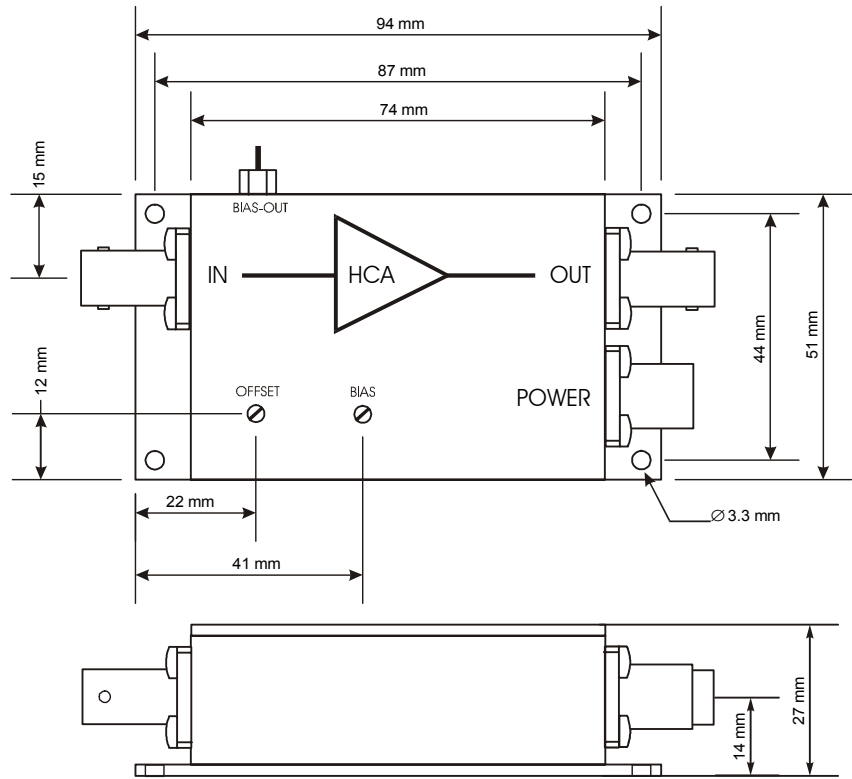


Datasheet

HCA-10M-100K

High Speed Current Amplifier

Dimensions



DZ01-0201-22

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