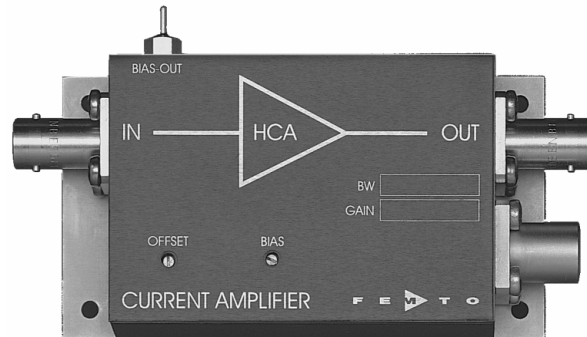




Datasheet

HCA-1M-1M-C

High Speed Current Amplifier

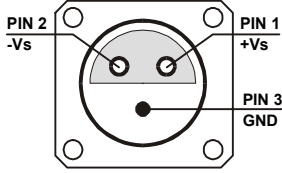


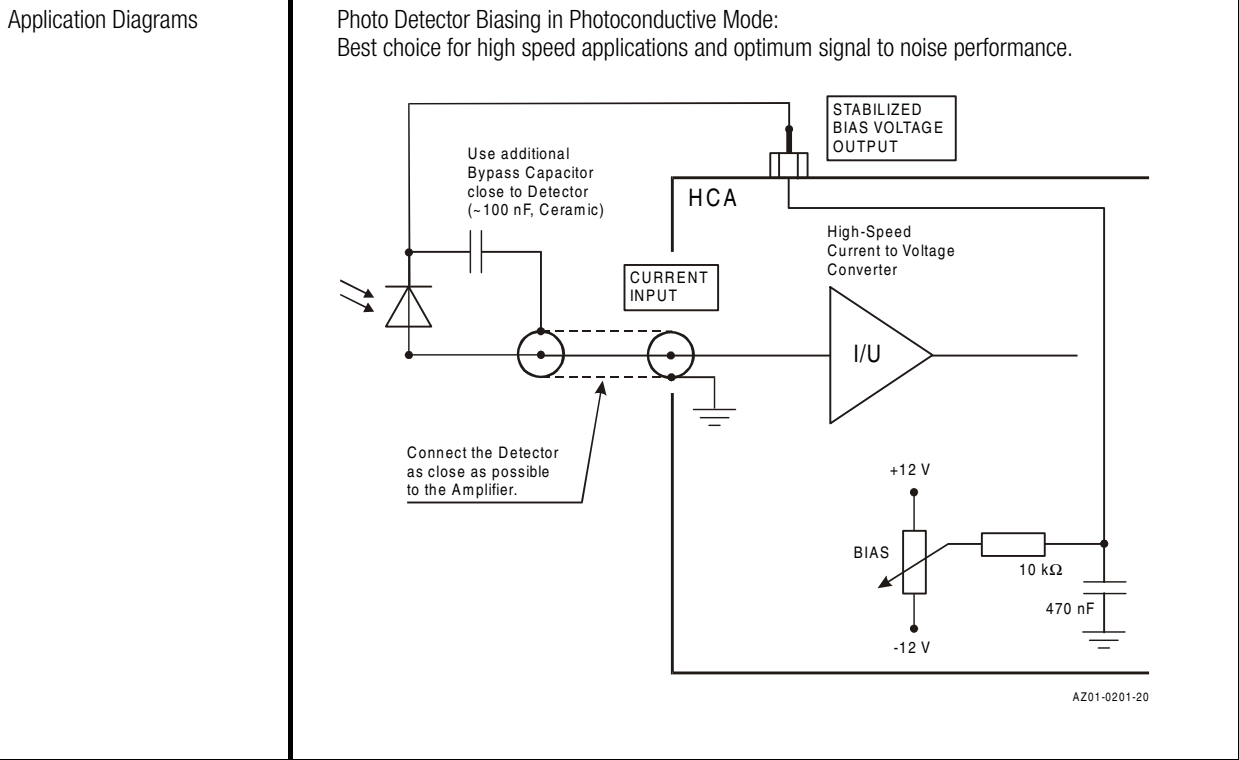
Features	<ul style="list-style-type: none"> • Bandwidth and Frequency Response Independent of Detector Capacitance (up to 2 nF) • Low Noise 3.5 pA/√Hz Equivalent Input Noise Current • Bandwidth DC ... 1 MHz • Transimpedance (Gain) 1 x 10⁶ V/A • Protection against ± 3.5 kV Transients 																																																							
Applications	<ul style="list-style-type: none"> • Photodiode and Photomultiplier Amplifier • Spectroscopy • Charge Amplifier • Ionisation Detectors • Preamplifier for Lock-Ins, A/D Converters, etc. 																																																							
Specifications	<p><i>Test Conditions</i> <i>V_s = ± 15 V, T_a = 25°C</i></p> <table border="0"> <tr> <td style="vertical-align: top;">Gain</td> <td>Transimpedance</td> <td>1 x 10⁶ V/A (@ 50 Ω load)</td> </tr> <tr> <td></td> <td>Gain Accuracy</td> <td>± 1 %</td> </tr> <tr> <td style="vertical-align: top;">Frequency Response</td> <td>Lower Cut-Off Frequency</td> <td>DC</td> </tr> <tr> <td></td> <td>Upper Cut-Off Frequency (- 3 dB)</td> <td>1 MHz</td> </tr> <tr> <td></td> <td>Rise / Fall Time (10 % - 90 %)</td> <td>350 ns</td> </tr> <tr> <td></td> <td>Gain Flatness</td> <td>± 0.3 dB</td> </tr> <tr> <td style="vertical-align: top;">Input</td> <td>Equ. Input Noise Current</td> <td>3.5 pA/√Hz (@ 100 kHz)</td> </tr> <tr> <td></td> <td>Equ. Input Noise Voltage</td> <td>0.8 nV/√Hz (@ 100 kHz)</td> </tr> <tr> <td></td> <td>Input Bias Current</td> <td>18 μA typ.</td> </tr> <tr> <td></td> <td>Input Bias Current Drift</td> <td>0.8 nA / K</td> </tr> <tr> <td></td> <td>Offset Current Compensation</td> <td>± 6 μA adjustable by offset trimpot</td> </tr> <tr> <td></td> <td>Input Current Range</td> <td>± 1.5 μA (for linear amplification)</td> </tr> <tr> <td></td> <td>Input Offset Voltage</td> <td>3 mV</td> </tr> <tr> <td></td> <td>DC Input Impedance</td> <td>50 Ω (virtual) // 5 pF</td> </tr> <tr> <td style="vertical-align: top;">Output</td> <td>Output Voltage Range</td> <td>± 1.5 V (@ 50 Ω load) for linear operation and low harmonic distortion</td> </tr> <tr> <td></td> <td>Output Impedance</td> <td>50 Ω (terminate with 50 Ω load for best performance)</td> </tr> <tr> <td style="vertical-align: top;">Bias Output</td> <td>Bias Output Voltage Range</td> <td>± 12 V, adjustable by bias trimpot</td> </tr> <tr> <td></td> <td>Bias Output Impedance</td> <td>10 kΩ // 1 μF</td> </tr> </table>		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 (- 3 dB)	1 MHz		Rise / Fall Time (10 % - 90 %)	350 ns		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		Input Current Range	± 1.5 μA (for linear amplification)		Input Offset Voltage	3 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
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Datasheet

HCA-1M-1M-C

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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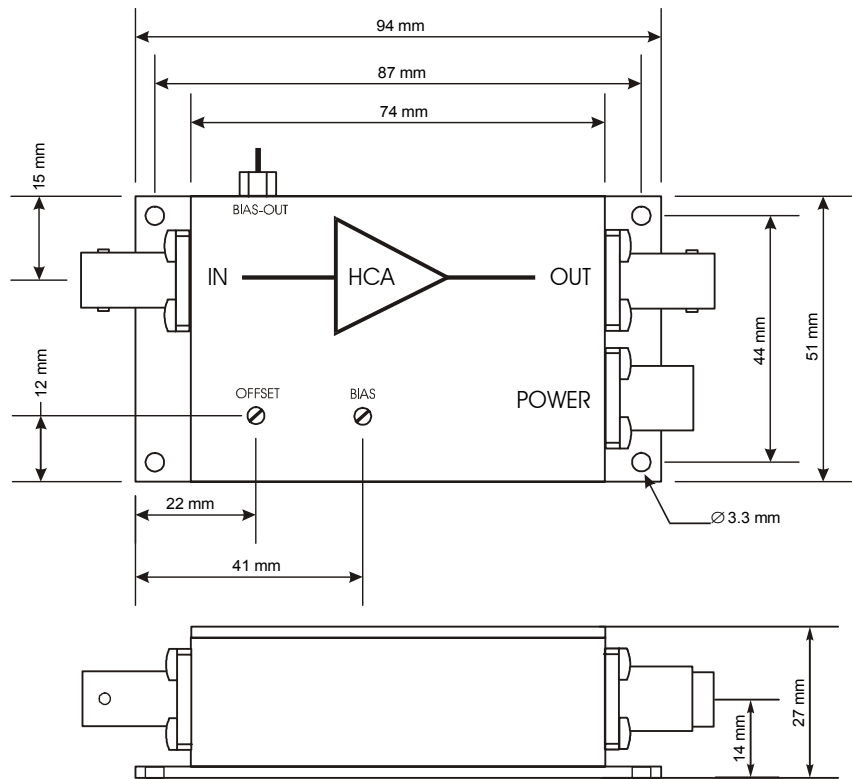


Datasheet

HCA-1M-1M-C

High Speed Current Amplifier

Dimensions



DZ01-0201-22

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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

