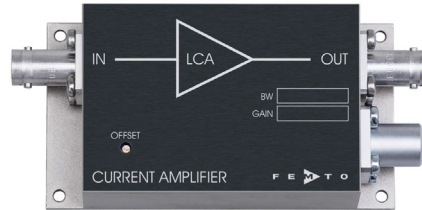


Datasheet

LCA-1K-5G

Ultra-Low-Noise Current Amplifier



Features

- **Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)**
- **Extremely Low Noise, 3 fA/√Hz Equivalent Input Noise Current**
- **Bandwidth DC ... 1 kHz**
- **Transimpedance (Gain) 5 x 10<sup>9</sup> V/A**

Applications

- **Photodiode- and Photomultiplier-Amplifier**
- **Spectroscopy**
- **Charge-Amplifier**
- **Ionisation Detectors**
- **Preamplifier for Lock-Ins, A/D-Converters, etc.**

Specifications

	Test Conditions	V <sub>s</sub> = ± 15 V, T <sub>a</sub> = 25°C
Gain	Transimpedance	5 x 10 <sup>9</sup> V/A (>10 kΩ Load)
	Accuracy	± 1%
Frequency Response	Lower Cut-Off Frequency	DC
	Upper Cut-Off Frequency	1 kHz (- 3 dB)
	Rise- / Fall-Time	400 μs (10% - 90%)
	Gain Flatness	± 0.1 dB
Input	Equ. Input Noise Current	3 fA/√Hz (@ 300 Hz)
	Equ. Input Noise Voltage	8 nV/√Hz (@ 300 Hz)
	Input Bias Current	2 pA typ.
	Input Bias Current Drift	Factor 2.3 / 10 K
	Offset Current Compensation	± 600 pA, Adjustable by Offset-Trimpot
	Max. Input Current	± 2 nA (Linear Amplification)
	Input Offset Voltage	< 1 mV
	DC Input Impedance	50 Ω (Virtual) // 5 pF
Output	Output Voltage	± 10 V (>10 kΩ Load)
	Output Impedance	50 Ω (Terminate with >10 kΩ for best Performance)
	Max. Output Current	± 10 mA (Linear Amplification)
Power Supply	Supply Voltage	± 15 V
	Supply Current	± 45 mA typ.
Case	Weight	210 gr. (0.5 lbs)
	Material	AlMg4.5Mn, nickel-plated
Temperature Range	Storage Temperature	-40 ... +100 °C
	Operating Temperature	0 ... +60 °C

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY



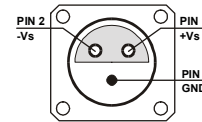
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**Datasheet**

**LCA-1K-5G**

**Ultra-Low-Noise Current Amplifier**

Absolute Maximum Ratings	Input Voltage	$\pm 7$ V
	Power Supply Voltage	$\pm 22$ 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 Photovoltaic Mode:  
Use for Low Speed Applications and Minimum Dark Current.

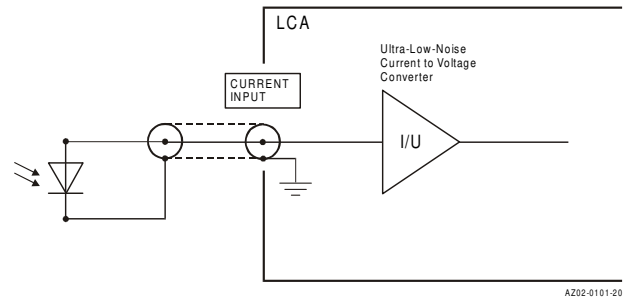
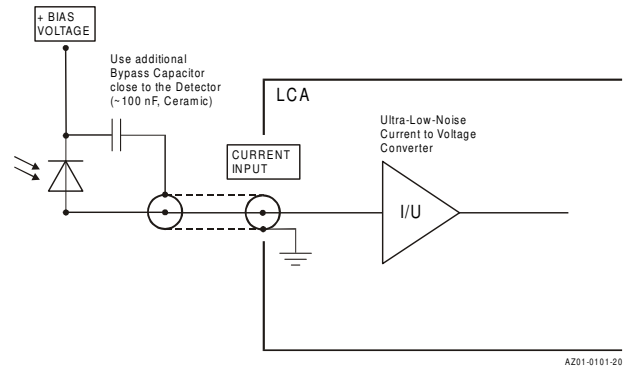


Photo Detector Biasing in Photoconductive Mode:  
Use for Fast Applications and if More Dark Current is Tolerable.  
Bias Voltage Decreases Detector Capacitance.



SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

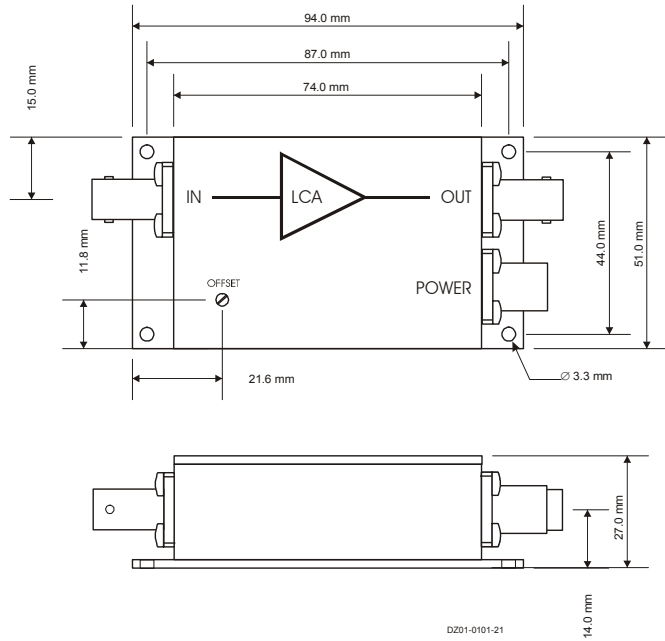


**Datasheet**

**LCA-1K-5G**

**Ultra-Low-Noise Current Amplifier**

Dimensions



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**SOPHISTICATED TOOLS FOR SIGNAL RECOVERY**

