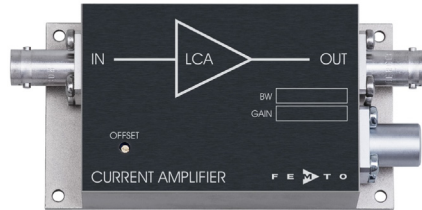


Datasheet

LCA-10K-500M

Ultra-Low-Noise Current Amplifier



Features

- **Bandwidth and Frequency Response Independent of Detector-Capacitance (up to 10 nF)**
- **Extremely Low Noise, 10 fA/√Hz Equivalent Input Noise Current**
- **Bandwidth DC ... 10 kHz**
- **Transimpedance (Gain) 5×10^8 V/A**

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 | 5×10^8 V/A (>10 k Ω Load) |
| | Accuracy | $\pm 1\%$ |
| Frequency Response | Lower Cut-Off Frequency | DC |
| | Upper Cut-Off Frequency | 10 kHz (-3 dB) |
| | Rise- / Fall-Time | 40 μs (10% - 90%) |
| | Gain Flatness | ± 0.1 dB |
| Input | Equ. Input Noise Current | 10 fA/√Hz (@ 1 kHz) |
| | Equ. Input Noise Voltage | 5 nV/√Hz (@ 1 kHz) |
| | Input Bias Current | 2 pA typ. |
| | Input Bias Current Drift | Factor 1.7 / 10 K |
| | Offset Current Compensation | ± 6 nA, Adjustable by Offset-Trimpot |
| | Max. Input Current | ± 20 nA (Linear Amplification) |
| | Input Offset Voltage | < 1 mV |
| | DC Input Impedance | 50 Ω (Virtual) // 5 pF |
| Output | Output Voltage | ± 10 V (>10 k Ω Load) |
| | Output Impedance | 50 Ω (Terminate with >10 k Ω for best Performance) |
| | Max. Output Current | ± 10 mA (Linear Amplification) |
| Power Supply | Supply Voltage | ± 15 V |
| | Supply Current | ± 40 mA typ. |
| Case | Weight | 210 gr. (0.5 lbs) |
| | Material | AlMg4.5Mn, nickel-plated |
| Temperature Range | Storage Temperature | -40 ... +100 $^\circ\text{C}$ |
| | Operating Temperature | 0 ... +60 $^\circ\text{C}$ |

SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

F E M T O

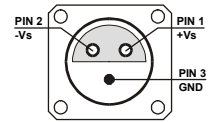
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Datasheet

LCA-10K-500M

Ultra-Low-Noise Current Amplifier

| | | |
|--------------------------|----------------------|--|
| Absolute Maximum Ratings | Input Voltage | ± 5 V |
| | Power Supply Voltage | ± 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.

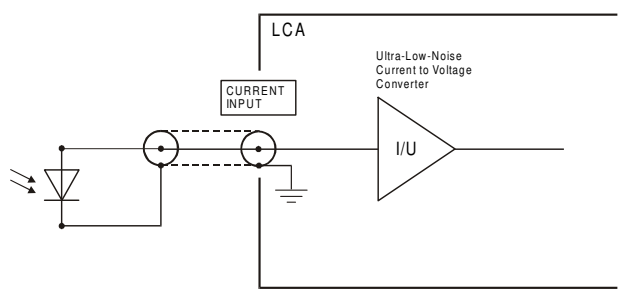
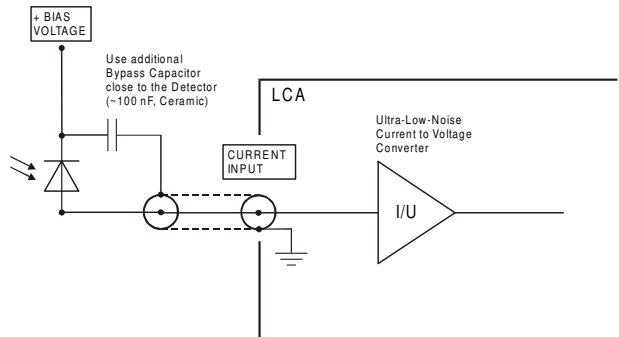


Photo Detector Biasing in Photoconductive Mode:
Use for Fast Applications and if More Dark Current is Tolerable.
Bias Voltage Decreases Detector Capacitance.



SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

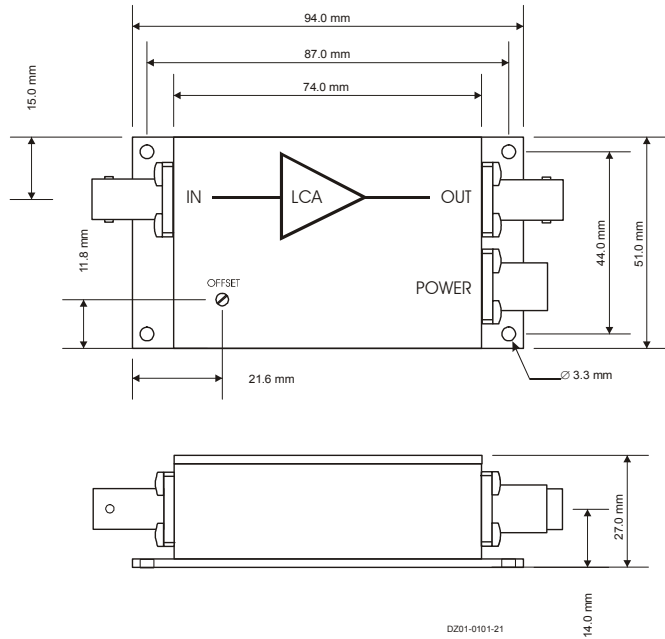


Datasheet

LCA-10K-500M

Ultra-Low-Noise Current Amplifier

Dimensions



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SOPHISTICATED TOOLS FOR SIGNAL RECOVERY

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