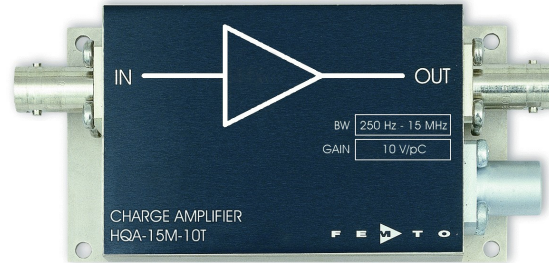




## Preliminary Datasheet

## HQA-15M-10T

### High Frequency Charge Amplifier



Features	<ul style="list-style-type: none"> <li>• <b>High Gain of 10 V/pC</b></li> <li>• <b>Wide Operating Range from 250 Hz to 15 MHz</b></li> <li>• <b>Low Input Noise of <math>40 \times 10^{-21}</math> C/<math>\sqrt{\text{Hz}}</math> and 700 pV/<math>\sqrt{\text{Hz}}</math></b></li> <li>• <b>Optimized for Sinusoidal Signals from AC Coupled Charge Sources</b></li> </ul>																																																											
Applications	<ul style="list-style-type: none"> <li>• <b>Pyro- and Piezoelectric Detectors</b></li> <li>• <b>Tuning Fork Quartz Crystals</b></li> <li>• <b>Length Extension Resonators</b></li> <li>• <b>Atomic Force Microscopy</b></li> <li>• <b>Optical Measurements</b></li> <li>• <b>Charged Particle Beam Monitoring</b></li> </ul>																																																											
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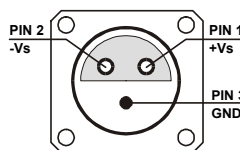
## High Frequency Charge Amplifier

**Absolute Maximum Ratings**

Input Voltage	20 V peak-peak
Power Supply Voltage	± 18 V

**Connectors**

Input	BNC
Output	BNC
Power Supply	LEMO series 1S, 3-pin fixed socket Pin 1: + 15V Pin 2: - 15V Pin 3: GND

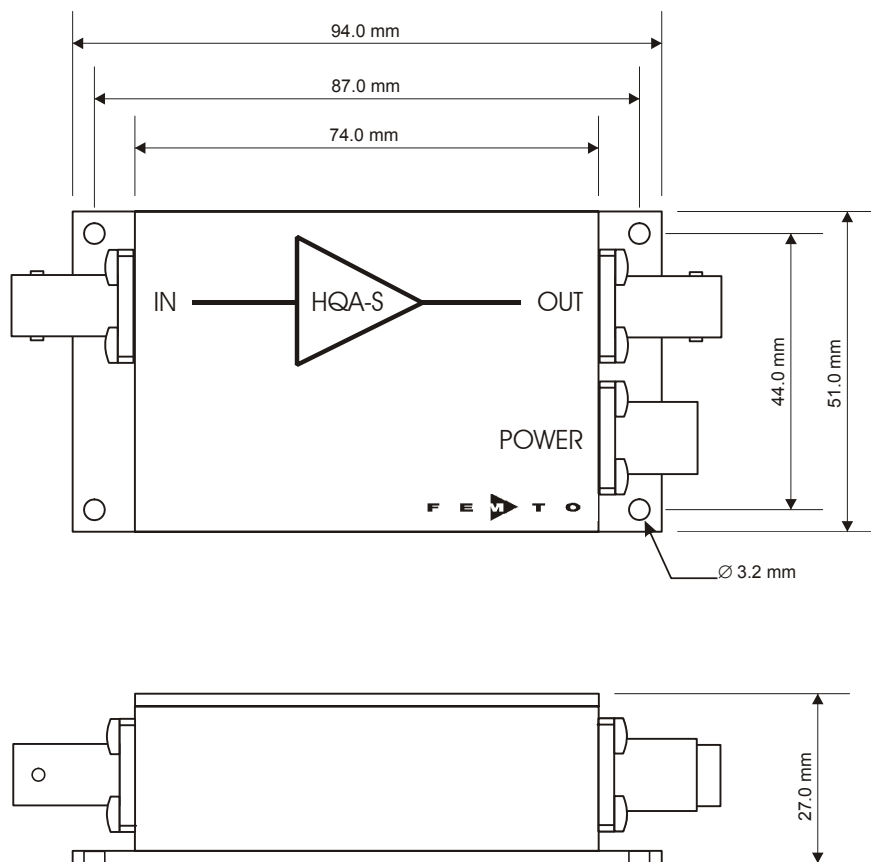


**Operation**

**General:**  
 The amplifier is AC coupled for direct use with a charge sensor producing sinusoidal signals with no DC background. A source capacitance of less than 1 nF is recommended for proper operation. If the effective source capacitance (sensor plus cable capacitance) is small relative to the effective input impedance of the amplifier (10 nF) the amplifier acts as a virtual ground and most of the charge flows into the amplifier input. At 1 MHz the amplifier input capacitance of 10 nF corresponds to a complex input impedance of 20 Ω. An input resistor of 1 GΩ is incorporated to prevent buildup of static charge. The amplifier is not suited for sources producing an average DC background current as this would saturate the device.

### High Frequency Charge Amplifier

Dimensions



DZ01-2299001-R1

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