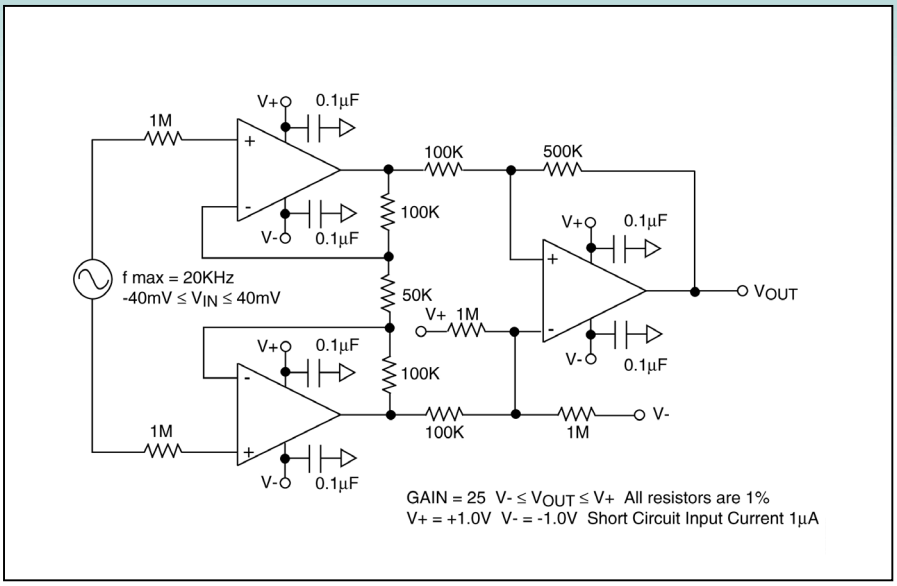
Category: Amplifiers **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. amp_27006.0

Low Voltage Instrumentation Amplifier



Description

This circuit presents a low voltage instrumentation amplifier operating on +/-1V power supplies. This circuit is designed to amplify low level difference-mode signals over a common mode voltage range that may be relatively large compared to the signal voltage levels. Many transducer and bridge circuits that generate limited output voltages can be buffered and amplifier by using this low voltage instrumentation amplifier. In this amplifier, the circuit functions as a difference amplifier with high input impedance with respect to the input signals. The 1Mohm input resistances provide isolation and over-voltage protection between the input signal and the instrumentation amplifier. The output impedance for this instrumentation amplifier is very low. The gain of the first stage is given by (1+100K/50K) and the gain for the second stage is equal to (500K/100K). For a differential input V_{IN}, the output is given by $V_{OUT} = V_{IN}$ x (500K/100K) x (1+100K/50K). In this example, the gain is fixed at 15

Recommended Components

ALD1706, ALD1701, ALD1721, ALD2701, ALD2706, ALD2711
Precision versions: ALD1726, ALD2711A, ALD2721

Other Related Circuit Ideas

Schematic no. amp_27002.0 Low Voltage High Input Impedance Precision DC Summing Amplifier
Schematic no. amp_27003.0 High Input Impedance Precision DC Summing Amplifier