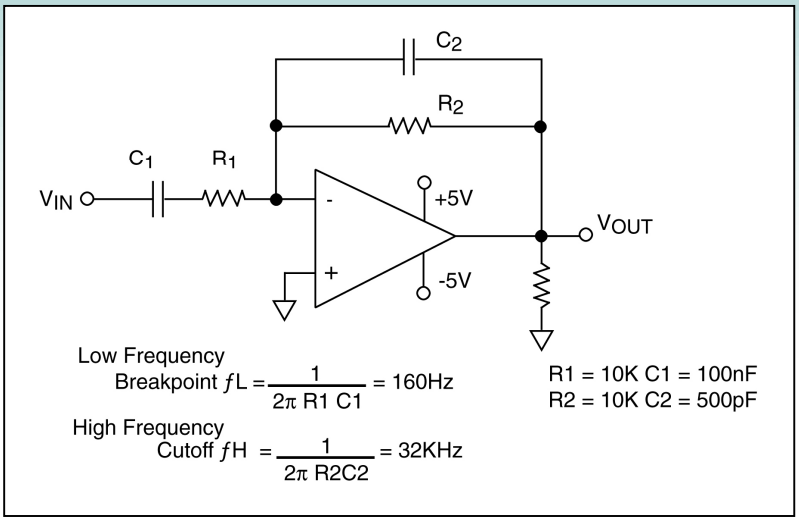
Category: Waveforms & Filters **CIRCUIT IDEAS FOR DESIGNERS** Schematic no. wf_47002.0

Band-pass Network



Description

This circuit utilizes an operational amplifier with high slew rate per unit power consumption configured as a band-pass filter circuit. The input is ac coupled with the low frequency cutoff determined by R1C1. The feedback network cutoff at a high frequency determined by R2C2. Start the operational amplifier selection process by determining a) the voltage supplies available, b) the high frequency response time required and c) the offset voltages required. An operational amplifier with very high input impedance (a few pA input currents) and an well-behaved output settling time specification, such as the ALD1704, would help to implement the filter without other unexpected surprises, such as ringing within the band. If the power consumption of the operational amplifier is important, select an operational amplifier with the maximum slew rate per unit current consumed, such as the ALD1702. Next, work out if the necessary gain bandwidth of the operational amplifier would be adequate for the gain and band-pass range required for the band-pass filter.

Recommended Components

ALD1702, ALD1722, ALD1704, ALD1724
½ ALD2702, ½ ALD2704

Other Related Circuit Ideas

Schematic no. wf_47001.0 Micro-power Band-pass Network
Schematic no. wf_47003.0 Function Generator
Schematic no. wf_47004.0 Low-Pass Filter (RFI Filter)