

Linear Variable Gain Amplifiers

Abstract

Controlling the operation of linear variable-gain amplifiers allows such linear variable gain amplifiers to have a wider operating range at high current levels, control inputs for selectable gains and improved low-voltage operation. In a first mode, the amplifier includes an additional source of current to allow for an enhanced operating range. In a second embodiment, the amplifier includes a plurality of selective resistive levels and a selection system that allows the selection of one of the resistive levels, which in turn controls the gain range of the amplifier system. A third embodiment illustrates the use of an amplifier system for providing a low voltage input signal to reduce errors caused by variations in the base to emitter in the two transistors providing the amplification. Embodiments are also disclosed for reducing the error in the amplifier output by providing additional stages to provide error reducing components that are added to the amplifier output.

Fig. 3