

ABSTRACT OF THE DISCLOSURE

A digital-to-analog converter circuit is configured by a digital-to-analog converter receiving data of m bits (where ' m ' is an integer arbitrarily selected), a voltage-follower circuit containing an operational amplifier, a current-mirror circuit and a current-switching circuit. Herein, the data of m bits are extended by bits b_H and b_L in low-order positions thereof, wherein b_H is placed in a higher order than b_L . A noninverting input of the operational amplifier is connected to an output of the digital-to-analog converter; and a feedback resistor is connected between an inverting input and an output of the operational amplifier. The current-mirror circuit, using MOS transistors, provides two constant currents I_H and I_L in response to the bits b_H and b_L respectively, wherein a relationship between the constant currents I_H and I_L is defined by an equation of $I_H = 2 \times I_L$. The current-switching circuit, which is connected between the current-mirror circuit and the voltage-follower circuit, is designed to selectively switch over the two constant currents to be supplied to the inverting input of the operational amplifier in accordance with values of the bits b_H and b_L . Thanks to the configuration of the digital-to-analog converter circuit, the feedback resistor and the current-mirror circuit can be designed in small areas. Hence, it is possible to easily extend a number of bits without enlarging a size of the digital-to-analog circuit so much.

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