CMOS CURRENT-MODE DESIGN OF AN S-SHAPE CORRECTION CURVE GENERATOR

林國珍,蘇信誠,鄭智仁,陳竹一
Electronics Engineering
Engineering
kuojenlin@chu.edu.tw

Abstract

A high speed and low power CMOS current-mode circuit design is proposed for generating an S-shape correction curve. We divide the correction curve into three segments to reduce the polynomial order for curve fitting. We assemble three simple current-mode circuits to construct an S-shape correction curve generator. The circuit consists of only 16 transistors and 3 current sources. The -3dB bandwidth and the maximum power dissipation are 285 MHz and 2.97 mW, respectively. The input range is quite wide from 0 to 220 μA.

Keyword：S-shape curve, current-mode circuit, curve fitting, TFT LCD