

ABSTRACT OF THE DISCLOSURE

A temperature sensor circuit is provided which is of a differential output type and comprises a differential pair circuit and a feedback circuit. The differential pair circuit has a first MOS transistor whose gate is connected to one terminal of the output terminal pair of the temperature sensor circuit to be applied with a reference voltage, and a second MOS transistor whose source is connected to the source of the first MOS transistor and whose capacity ratio, or gate-width and gate-length ratio (W/L) are different from that of the first MOS transistor, a load circuit connected to the drains of said first and second MOS transistors, and a constant current source connected to the sources of the first and second MOS transistors. The feedback circuit is supplied from the drain of the second MOS transistor with an output voltage of the differential pair circuit, and the output end thereof is connected to the other terminal of the output terminal pair of the temperature sensor circuit as well as to the gate of the second MOS transistor thereby feedback-controlling the differential pair circuit in order that the drain currents



of the first and second MOS transistors are made equal to each other. The load circuit is preferable to be a current mirror circuit, particularly preferable to be such a current mirror circuit that has two MOS transistors whose gate-width and gate-length ratio are either different from or equal to each other.

This Sheet Has Been Replaced

