

MODELLING AND CHARACTERIZATION OF MEMS BASED PIEZO – RESISTIVE SENSOR USING CONSTANT CURRENT EXCITATION

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Abstract

In the proposed paper a study of variation in output of MEMS based Si – Piezo – resistive sensor in different operating temperature is presented. In this experiment we used generic pressure sensor manufactured by Lucas Nora sensor Inc, Fremont, the integrated circuit silicon sensor chip housed in a TO-8 electrical package which can be mounted on printed circuit board. The latest techniques in VLSI and micro – machining were used to ion – implant Piezo – resistive strain gauges into a Wheat – stone bridge configuration that is integrally formed on a micro machined silicon diaphragm. Constant current excitation to the sensor produces a voltage output which is linearly proportional to the input pressure.

Keywords : Piezo – resistive sensor, MEMS, VLSI, micro-machining