

Title (en)

VARIABLE INDUCTOR TYPE MEMS PRESSURE SENSOR USING MAGNETOSTRICTIVE EFFECT

Title (de)

MEMS-DRUCKSENSOR DES VARIABLEN INDUKTIVITÄTSTYPS MIT MAGNETOSTRIKTIVEM EFFEKT

Title (fr)

CAPTEUR DE PRESSION MEMS DE TYPE INDUCTEUR VARIABLE UTILISANT UN EFFET MAGNETOSTRICTIF

Publication

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Application

EP 05740754 A 20050503

Priority

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Abstract (en)

[origin: WO2006062275A1] A variable inductor type MEMS pressure sensor using a magnetostrictive effect comprises an inductor array unit and a capacitor unit. The inductor array unit includes a coil unit having a plurality of serially connected circular electrodes formed on a first substrate and a magnetostrictive material thin film corresponding one by one to the circular electrode formed on a second substrate opposite to the first substrate at a predetermined distance in parallel to form an inductor which has the magnetostrictive material thin film as a core of the coil unit for inducing change of magnetic permeability of the magnetostrictive thin film depending on external pressure to vary inductance of the inductor. The capacitor unit constitutes a LC resonant circuit with the inductor array unit to convert magnetic energy discharged in the inductor array unit into a voltage. The variable inductor type MEMS pressure sensor has an excellent resolution because it is more sensitive than a conventional piezoresistive or capacitance sensor, and is manufactured using a MEMS process technology exchangeable with a semiconductor process, thereby enabling miniaturization and a mass package process to reduce the cost of production.

IPC 8 full level

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