Title (en)

MICROMECHANICAL RELAY WITH HYBRID ACTUATOR

Title (de)

MIKROMECHANISCHES RELAIS MIT HYBRIDANTRIEB

Title (fr)

RELAIS MICROMECANIQUE A ACTIONNEMENT HYBRIDE

Publication

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Application

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Abstract (en)

[origin: US5666258A] PCT No. PCT/DE94/00152 Sec. 371 Date Aug. 17, 1995 Sec. 102(e) Date Aug. 17, 1995 PCT Filed Feb. 14, 1994 PCT Pub. No. WO94/19819 PCT Pub. Date Aug. 1, 1994A micromechanical relay is provided having a cantilevered armature (53) which is etched out from an armature substrate (52). The armature is in the form of a tongue, is elastically connected to the armature substrate, and forms an electrostatic drive with a base electrode (58) of a base substrate (51) located underneath. In addition, a piezo-layer (60) is provided on the armature (53). The piezo-layer (60) acts as a bending transducer and forms a supplemental actuator for a quick response time. When a voltage is applied to the electrodes of the armature (53), base substrate (51) and piezo-layer (60), the armature is attracted toward the base substrate and then rests over a large area on the base, closing at least one contact (55, 56). The different characteristics of the electrostatic actuator, on the one hand, and of the piezo-drive, on the other hand, are complementarily combined to provide a strong attraction force at the start of the armature movement, and a strong contact force is produced after the armature has been attracted.

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