ABSTRACT

INTEGRATED HELIX COIL INDUCTOR ON SILICON

A new structure and method is provided for the creation of an inductor on the surface of a silicon semiconductor substrate. The inductor is of a helix coil design having upper level and lower level conductors further having an axis whereby the axis of the helix coil of the inductor is parallel to the plane of the underlying substrate. Under the first embodiment of the invention, the height of the helix coil that is created on the surface of a silicon substrate is uniform. Under the second embodiment of the invention the height of the helix coil of the inductor of the invention is uniform while a ferromagnetic core is inserted between the upper and the lower level conductors of the helix coil. Under the third embodiment of the invention, the height of the helix coil that is created on the surface of a silicon substrate is non-uniform. Under the fourth embodiment of the invention the height of the helix coil of the inductor of the invention is non-uniform while a ferromagnetic core is inserted between the upper and the lower level conductors of the helix coil.

FIGURE 1 IS SUGGESTED FOR PUBLICATION