

**Abstract**

**An inductor and a method of providing an inductor**

The present invention relates to the inductors, for example, flat ribbon inductors and  
5 methods of forming thereof. An aspect of the disclosure provides an inductor comprising:  
a helical conductor a core having a core magnetic reluctance, the core comprising: a first  
core portion; a second core portion; and, a gap disposed between the first core portion  
and the second core portion and enclosed by the helical conductor, wherein the gap is  
configured to provide a gap magnetic reluctance wherein the gap magnetic reluctance is  
10 greater than the core magnetic reluctance; wherein the helical conductor has: a first region  
of the conductor which encloses part of the core, wherein the first region comprises a first  
pitch; and, a second region of the conductor which encloses the gap wherein the second  
region comprises a second pitch, wherein the second pitch is greater than the first pitch;  
wherein, in use, the second region of the conductor is configured to reduce a magnitude  
15 of interaction between the second region of the conductor and an electromagnetic field  
generated around the gap.

[Figure 3A]