

# GHz Magnetic Chip Inductor with High Magnetic Loss

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## Status:

Seeking R&D and/or  
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Patent Pending

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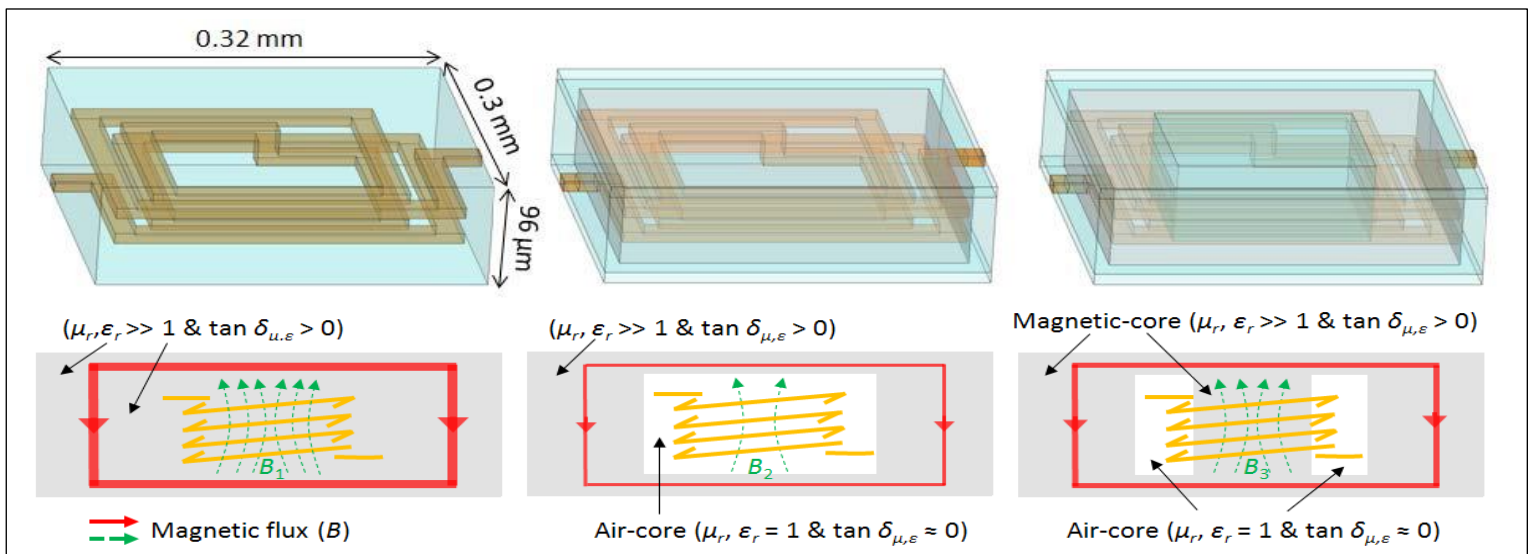
## GHz Magnetic Chip Inductor with High Magnetic Loss

- GHz magnetic chip inductor
  - Air and magnetic-core materials
- Center magnetic bar
  - Surrounded by coils, top/bottom magnetic slabs, and an air-core inside the enclosed magnetic wall
- Location of air-core between the magnetic core and inductor coil
  - Key parameter for high performance GHz magnetic chip inductor

## Advantages of GHz Magnetic Chip Inductor with High Magnetic Loss

- Realized simultaneously high  $L, Q$  factor and SFR
  - Due to negligible core loss
- Increase in inductance
  - Due to the magnetic core possessing a high magnetic permeability
- Outperforms conventional air- and magnetic-core inductors
  - Combination of both air- and magnetic-core materials

Figure 1. Various Magnetic Chip Structures



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