

## NUMERICAL ANALYSIS OF INDUCTANCE LOSS DUE TO INFLUENCE OF WINDING DESIGN

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### ABSTRACT

There are two types of inductor winding, namely multiple layer winding and single layer winding. It is known that the performance of a multiple layer inductor degrades over time at high frequencies stresses and eventually becomes worse than that of a single layer design inductor. An alternative is to use thinner laminated conductors. However, these conductors are susceptible to inductance loss effects, which can lead to increased winding fault or poor performances of the EMI suppression inductor. In designing winding to EMI suppression inductor, the most importance aspect is to understand the winding failure reason and area due to the inductance loss effects. This paper is to investigate the factors influencing inductance losses, the shape of winding strategies of faulty failure zone, simulation trials with proposed solution candidates. This study is limiting to copper winding conductor for EMI suppression inductor, a popular ferrite material family.

**KEYWORDS:** EMI Suppression Inductor, Inductance Loss, Winding Design