

High frequency core loss measurement

High accurate core loss measurement from low to high frequency (tens MHz)

Overview

For miniaturization of electronic component using magnetic material, it is required to measure core loss of magnetic material with small magnetic permeability at high frequency with high accuracy. In the conventional evaluation method of measuring loss by applying winding to the toroidal core, it is necessary to reduce the number of turns of search coil to shift self resonant frequency to high frequency side in order to measure loss at high frequency. However, reducing the number of turns causes loss measurement value underestimation due to magnetic flux leakage from the toroidal core.

This invention is possible to measure core loss with high accuracy from low to high frequency, independently of the number of coil turns by compensating difference between permeability during loss measurement and permeability measured separately. Also, the addition of this invention to existing loss measurement device is considered to be technically not so difficult.

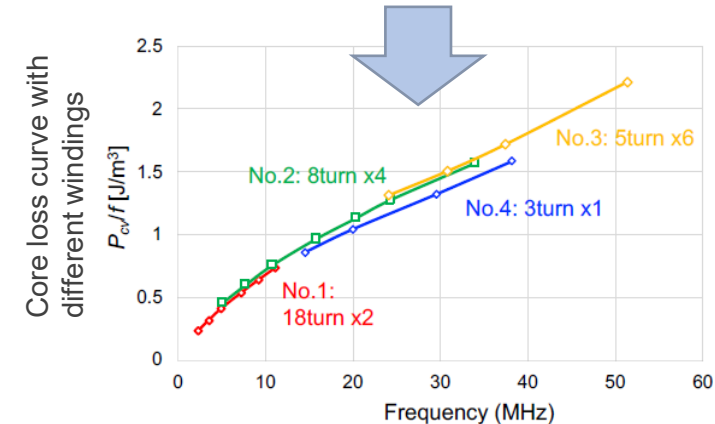
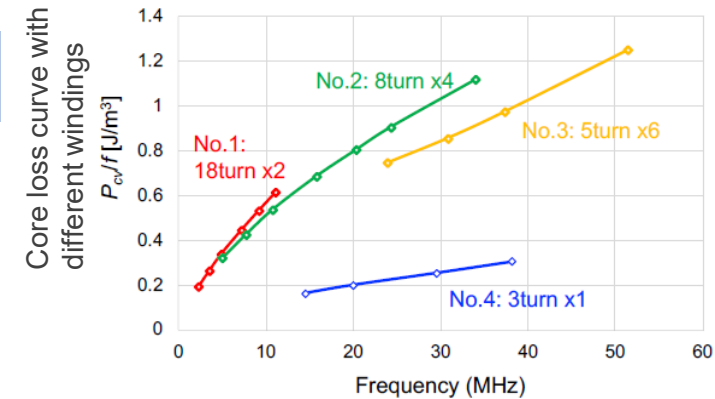
Product Application

- Core loss measurement of magnetic materials at high frequency

IP Data

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High precision core loss measurement at high frequency independently of the number of coil turns



Related Works

[1] Y. Sato et al., "Accuracy Investigation of High-Frequency Core Loss Measurement for Low-Permeability Magnetic Materials," in IEEE Transactions on Magnetics, doi: 10.1109/TMAG.2023.3283955.

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