

Inductance

High vs. Low Permeability Core Comparison

Feature	High Permeability (μ)	Low Permeability (μ)
Inductance per turn	High	Low
Saturation Current (I_{sat})	Low (saturates easily)	High (resists saturation)
Core Losses (AC/Ripple)	Higher (high AC flux density)	Lower (flatter magnetization slope)
Winding (Copper) Losses	Lower (requires fewer turns)	Higher (requires more turns)
Typical Materials	High-nickel alloys, MnZn ferrites	Powdered iron, gapped ferrites, Kool M μ

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