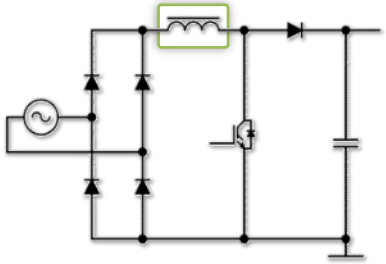
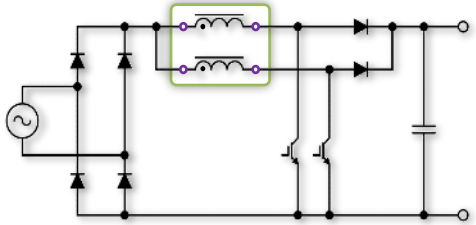
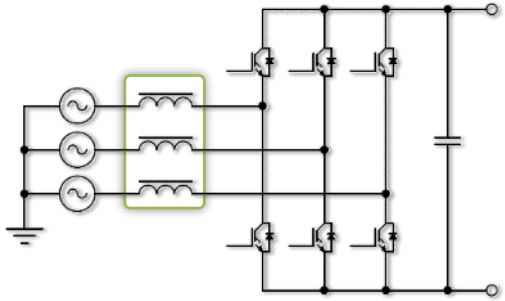
■ PFC reactor



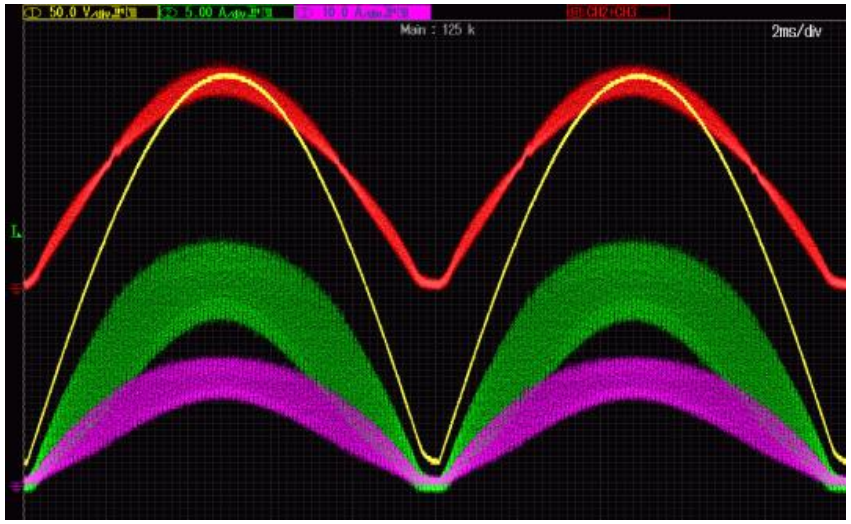
Single-phase AC PFC



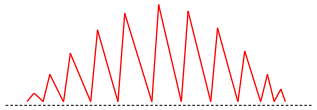
Single-phase AC interleave PFC



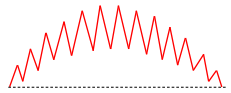
Three-phase AC bridgeless PFC



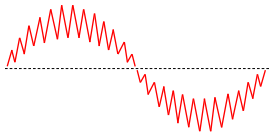
2 phase interleave PFC reactor current waveform



CRM PFC



CCM PFC



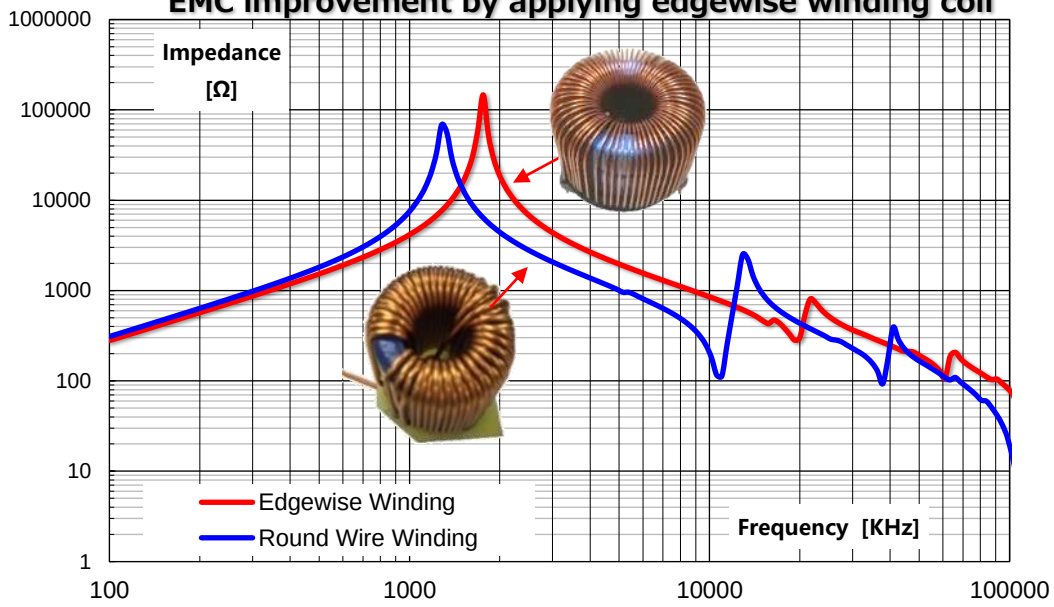
CCM bridgeless PFC

Features

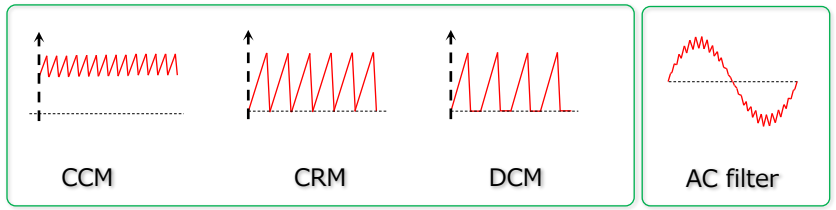
- Low loss
- Good EMC compatibility
- Compact size
- Good cost performance
- High power･High current･High frequency

Material : Ferrite ・ Powder
Winding : Lizz wire･ Edgewise

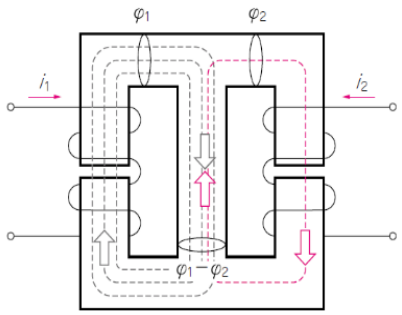
EMC improvement by applying edgewise winding coil



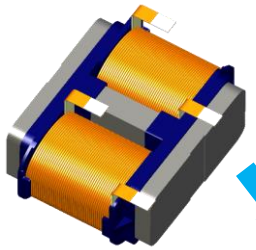
Boost reactor & AC reactor



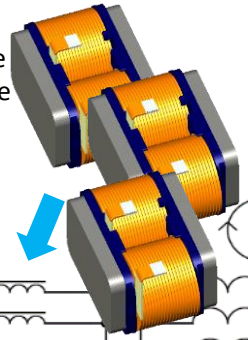
- High efficiency
- Low sound noise
- Good EMC combability
- Extra low THD
- Compact size
- High cost performance



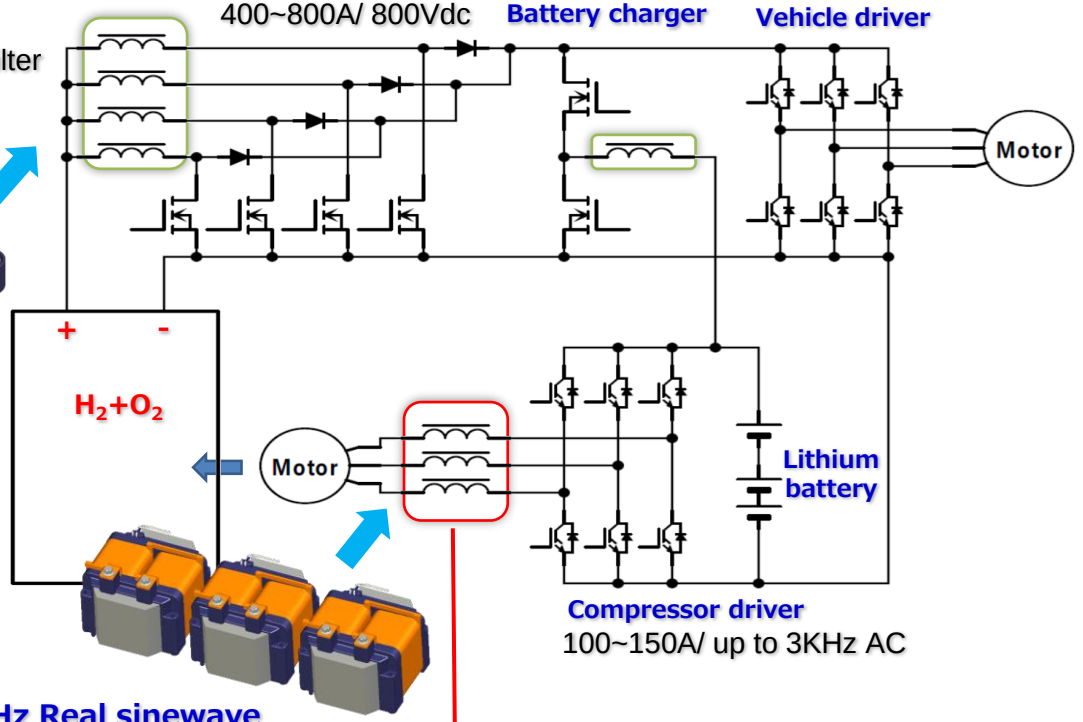
Flux
Flux inside



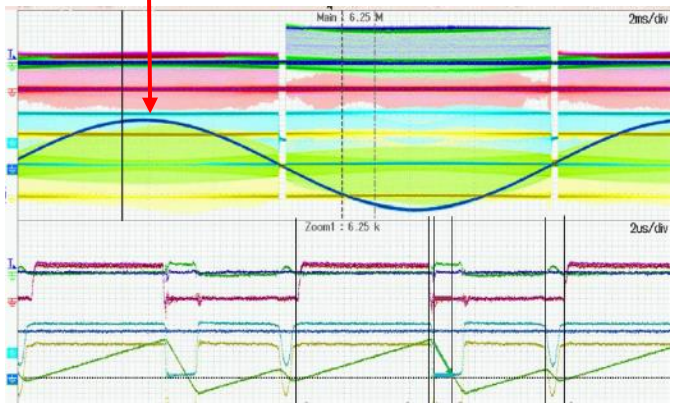
Flux is cancelled largely within the middle core which improves core loss & cuts core volume



- **FCV application**
  - ✓ Compressor Driver Filter
  - ✓ FCV DC/DC
  - ✓ Battery Charger



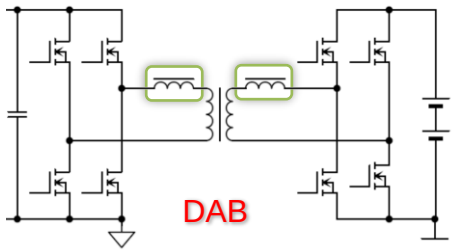
3KHz Real sinewave AC filter reactor

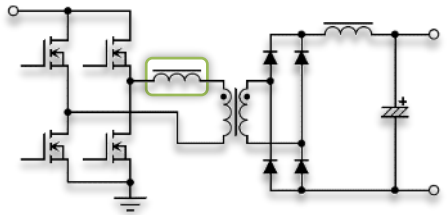


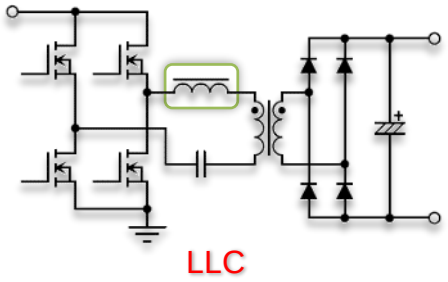
- **Integrated boost reactor improves efficiency for 50KW photovoltaic inverter**

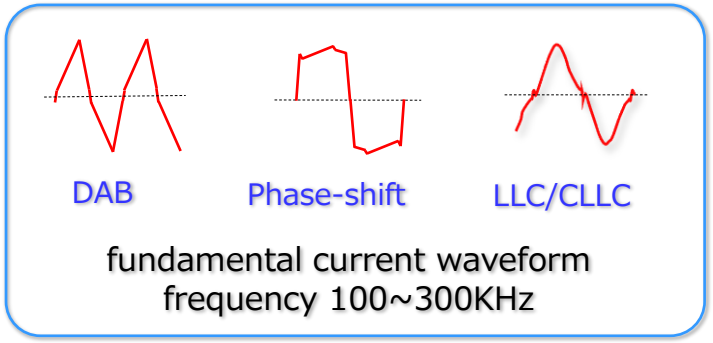
■ Resonant inductor

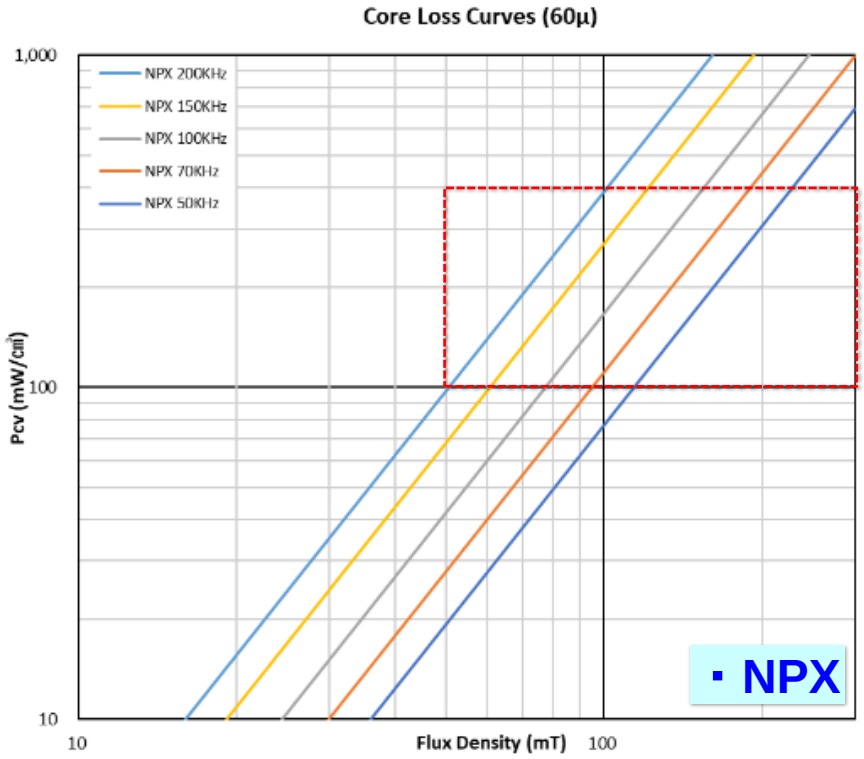
Resonant applications

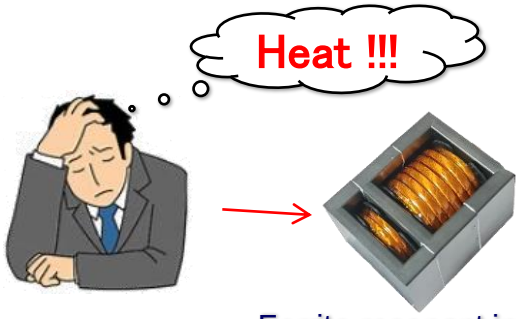










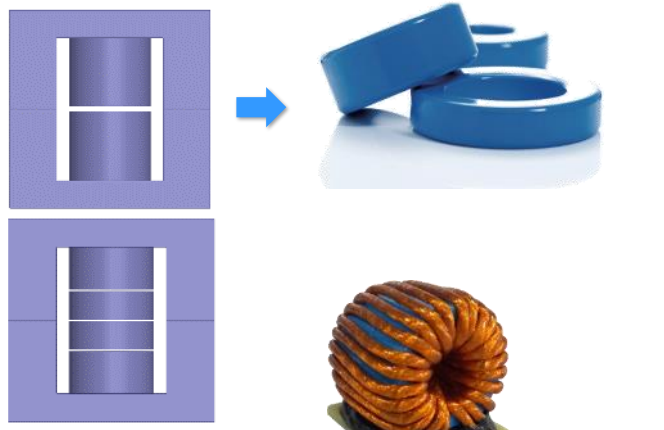


Ferrite resonant inductor

Requirement & operating condition

- L tolerance < ±5% ➡ Eddy loss
- High frequency & high AC current ➡ Core loss

f_{sw} ・ΔB > 15 KHz ・Tesla



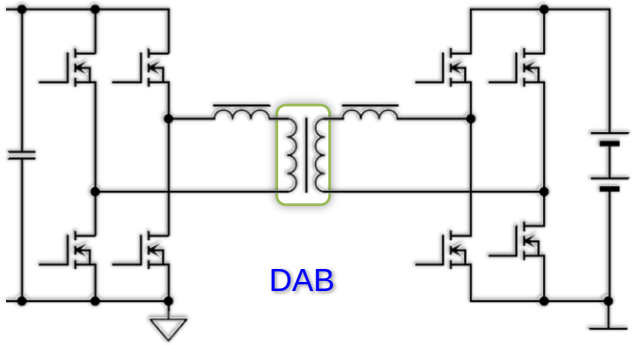
Ferrite
PC95 3C96 equivalent

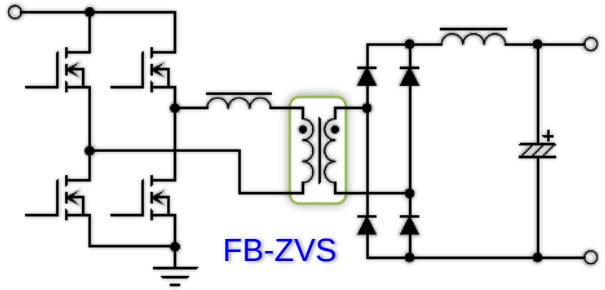
Good Solution !!

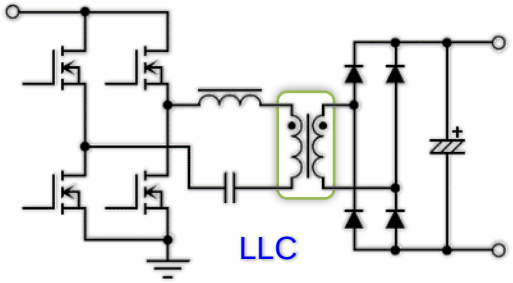
NPA・NPX
Toroidal core

NPA・NPX
Block core

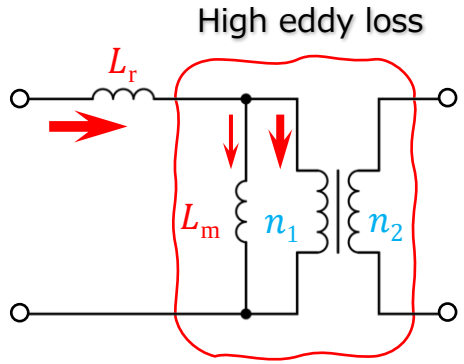
■ High power transformer



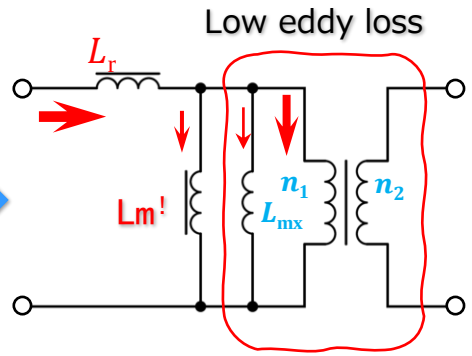




Resonant converter applications



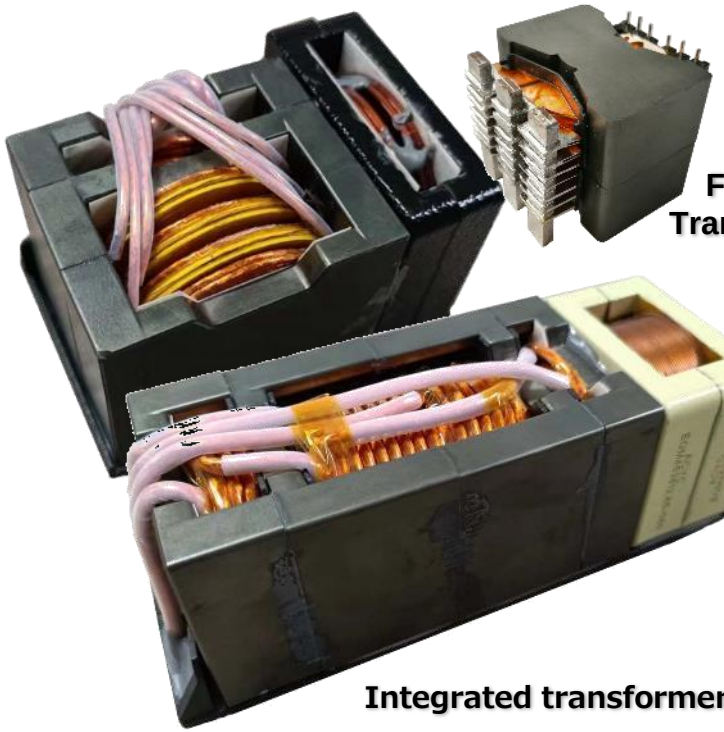
Large gap transformer



No gap transformer

L_m = Lm! // L_{mx} ≈ Lm!

(L_{mx} >>> L_m!)

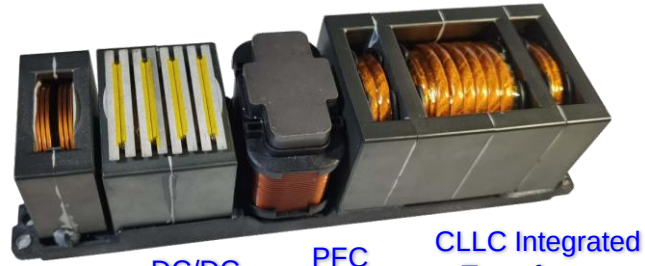


FB-ZVS Transformer

Integrated transformer

LLC · CLLC · DAB

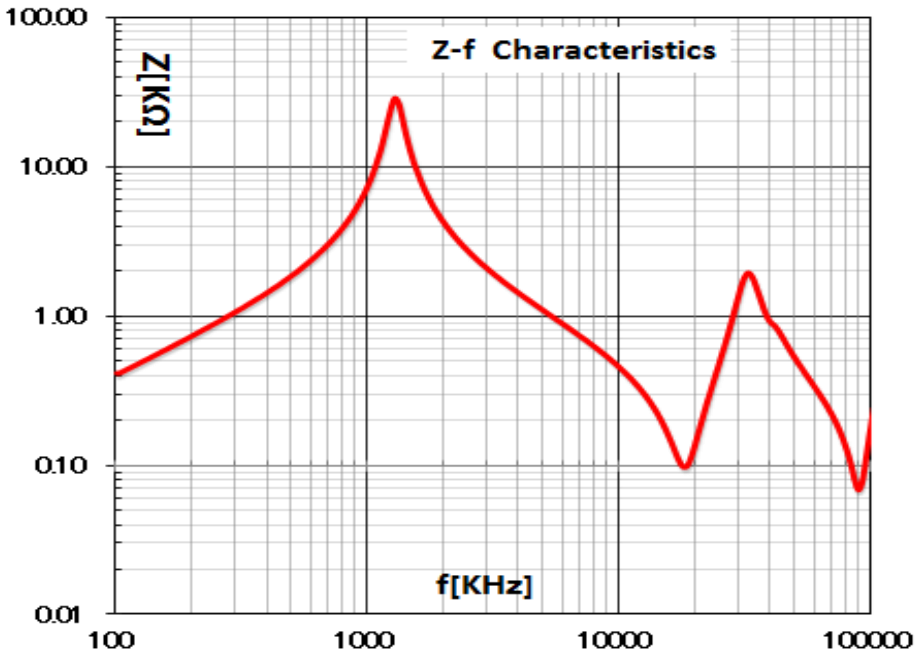
6.6kW CLLC integrated transformer



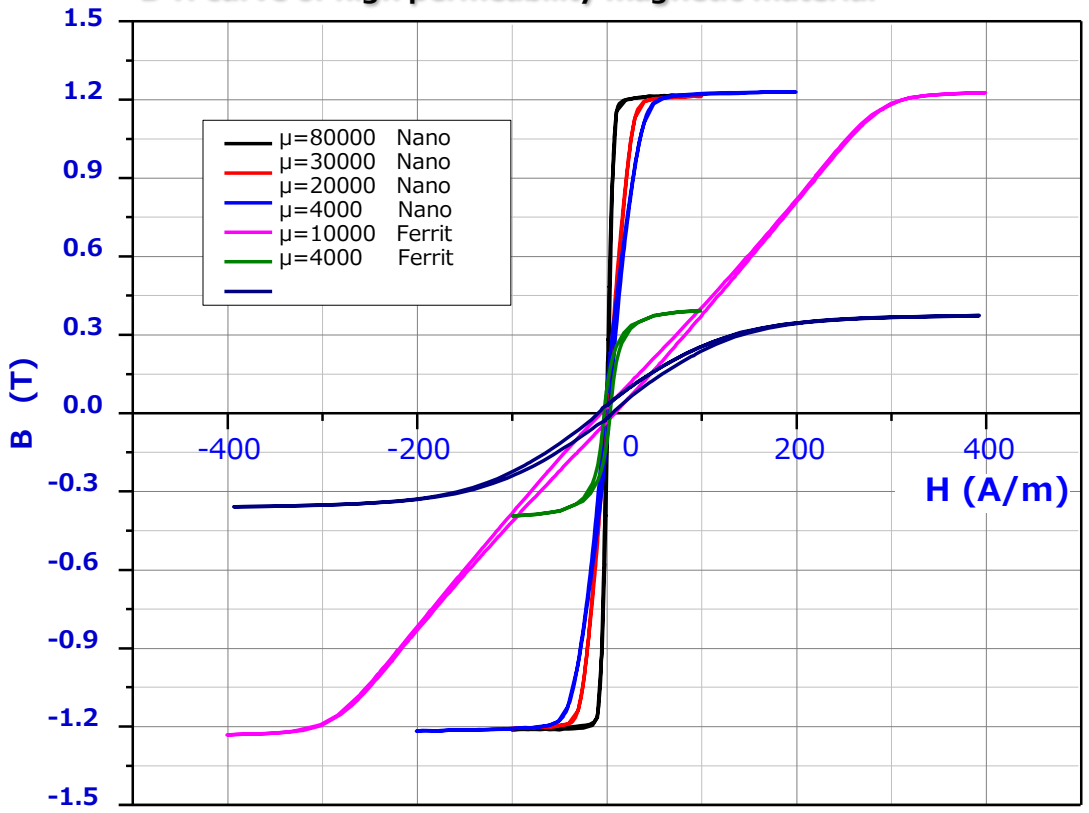
3.3kW EV Magnetic solution

EMC Choke

Typical impendence characteristic



B-H curve of high permeability magnetic material

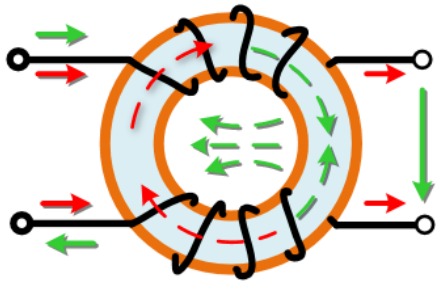


Normal current

Common current

Normal magnetic flux

Common magnetic flux



EMC choke samples

Contact us

私たちは持続可能な開発目標（SDGs）を支援しています

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POCO Application Tech. Support

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Better Nature Better Life

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浙江工業大学　客席教授
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