

NEW!

SMART-COIL COMMON MODE CHOKE

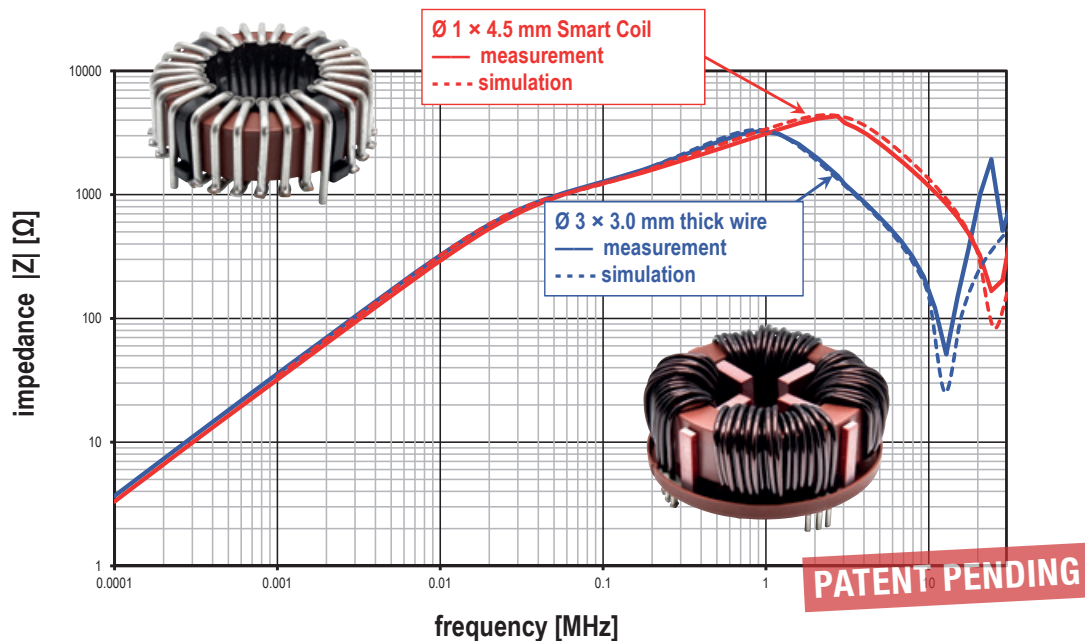
NEW LOW COST / HIGH POWER CMC WITH SUPERIOR HF-PROPERTIES

Common mode chokes (CMCs) using our new Smart-Coil design offer improved attenuation at high frequencies ($f > 1$ MHz) in comparison to conventional solutions made of several parallel wound strands. By using Smart-Coils instead of windings, costs are significantly reduced, winding capacitance is minimized and impedance at 10 MHz is improved by one order of magnitude. Furthermore, our new Smart-Coil technology reduces mechanical stress which is commonly applied on the core during winding. This new design is most suitable for high current/high power applications with load currents above 50 A. Smart-Coils are made of shaped copper bars, possible diameters are 4.5 mm, 6 mm and even more. Smart-Coil-CMCs feature nanocrystalline VITROPERM cores providing highest permeability and lowest losses combined with excellent thermal properties.

THE ADVANTAGES OF OUR SMART-COIL-CMC DESIGNS ARE MOST USEFUL IN FILTER DESIGNS FOR:

- electrified powertrains
- battery charging (wall boxes, on-board chargers, charging piles) for electric vehicles
- wind and high power solar inverters
- large industrial frequency inverters
- welding machines

IMPROVED IMPEDANCE AT HIGH FREQUENCIES



POSSIBLE DESIGNS OF HIGH CURRENT CMCs

Characteristic value	Massive wire ($\text{Ø } 3 \times 3$ mm)	Smart-Coil ($\text{Ø } 1 \times 4.5$ mm)
Max. load current $I_{\text{load}} (< 130^\circ\text{C})$		80 A
Size	102 x 76 x 25 mm (core) 122 x 122 x 48 mm (component)	
Winding capacitance C_w	43 pF	13.5 pF
Resonance frequency f_{res}	0.73 MHz	1.9 MHz
Insertion loss aE* @ 1 MHz	30 db	30 db
Insertion loss aE* @ 10 MHz	7 db	21 db
Impedance Z @ 10 MHz	176 Ω	1.2 kΩ

*50 Ω impedance system

ADVANCED MATERIALS – THE KEY TO PROGRESS

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