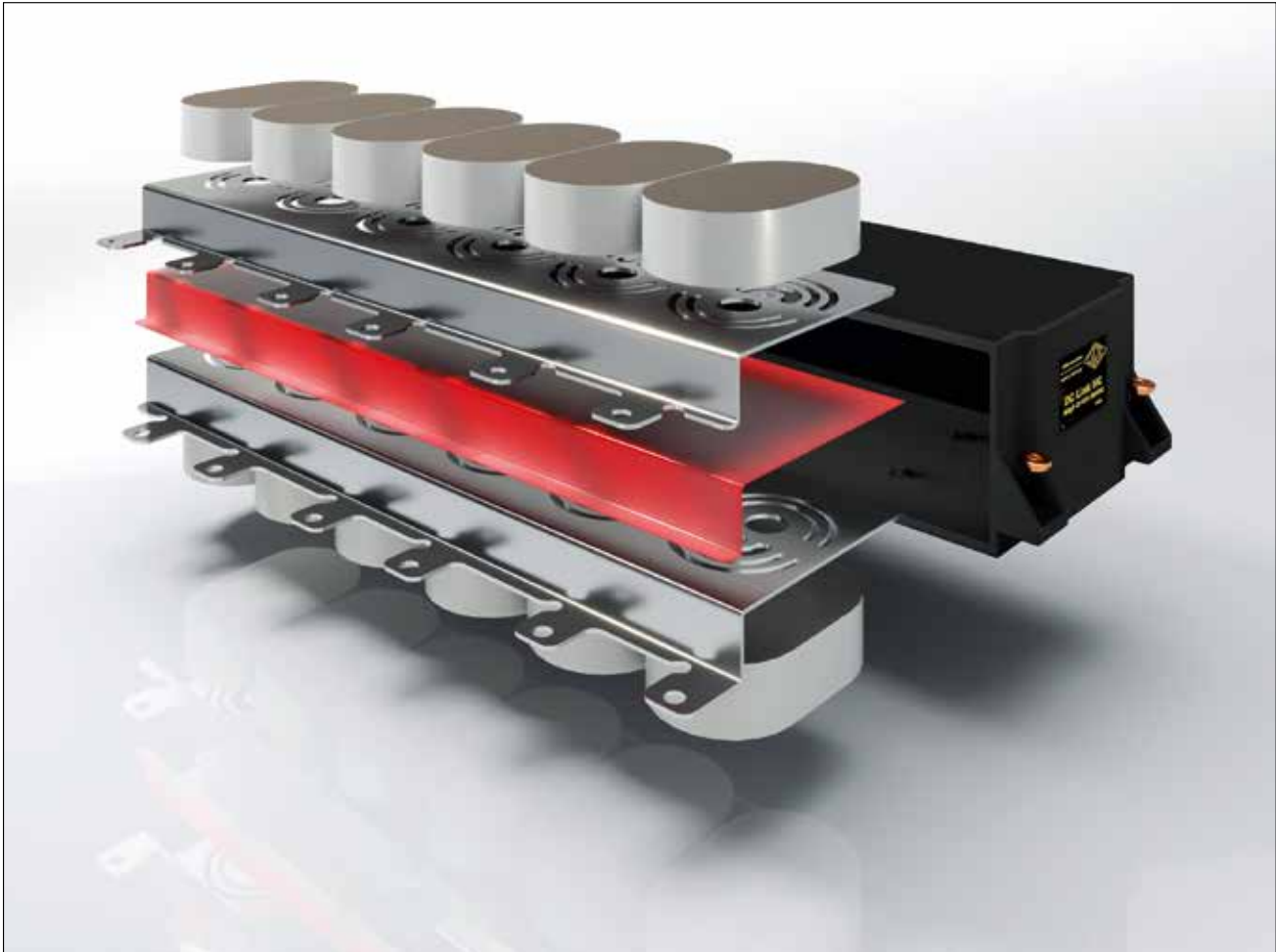


DC-LINK Capacitors for SiC-Power Semiconductors



WIMA low-inductance (LI) DC-LINK capacitors are characterized by a flat, space-saving design with particularly low self-inductance. In addition to general applications, they are particularly suitable for applications in combination with silicon-based SiC power semiconductors.

Advantages

- The LI configuration with flat, space-saving design is available for all types and contact configurations
- Existing capacitor designs can easily be substituted with LI capacitors
- The LI design has no restrictions regarding the energy density per volume compared to previous DC-Link configurations
- The WIMA Single Side Cooling (SSC) achieves ideal heat dissipation with one-sided (water) cooling systems
- The LI design is available in 2- and 3-voltage level configurations.

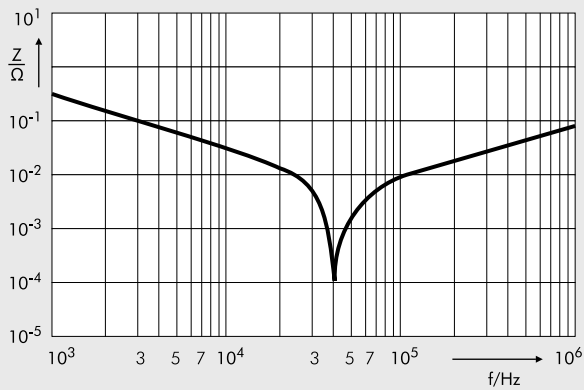
Properties

- Low leakage inductance of ≤ 10 nH in almost any capacitor configuration
- Significant resonance point shift in high frequency ranges compared to conventional designs
- Optional: ESR optimized design and application temperatures up to $+125^\circ\text{C}$ on request.

Continuation

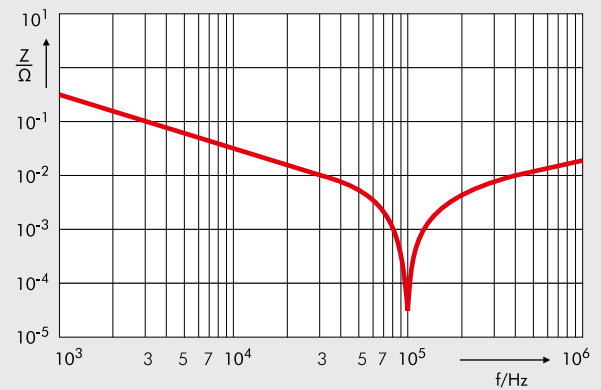
Impedance Change with Frequency

Reference Design



$C_r = 500 \mu\text{F} \pm 10\%$
 $\text{ESR} = 0.46 \text{ m}\Omega$ at 1kHz
 $f_R \approx 42.5 \text{ kHz} \Rightarrow \text{ESL} \approx 30 \text{ nH}$

NEW: LI-Design



$C_r = 500 \mu\text{F} \pm 10\%$
 $\text{ESR} = 0.4 \text{ m}\Omega$ at 1kHz
 $f_R \approx 100 \text{ kHz} \Rightarrow \text{ESL} \approx 5 \text{ nH}$

Examples

