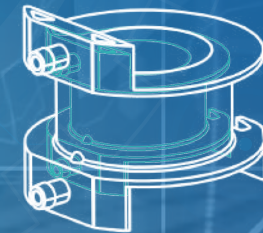
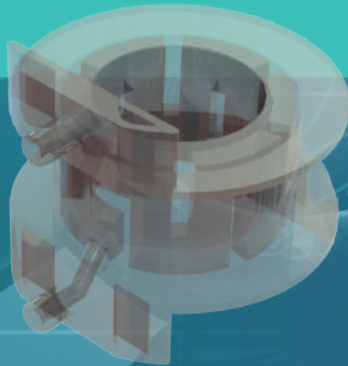




Heat Dissipation Challenge

**Disruptive Indirect
Liquid Cooling
for Magnetics
Heat Dissipation**



What is Coolgap?

The most disruptive indirect liquid cooling system in the field of inductive component's heat dissipation.

How it works?

With a serpentine-shaped duct, Coolgap removes heat directly from the source.

Why Coolgap?

- 1 IC core and copper losses significantly increase with temperature.
- 2 Liquid cooling becomes necessary when significantly increasing power density.
- 3 Temperature in excess of 45°C will rapidly degrade battery lifetime.
- 4 Liquid cooling is much more efficient than gas cooling.

Benefits



Improved thermal performance

Coolgap increases heat transfer rate, optimizing component thermal management, reducing the use of potting compounds and aluminum housings.



Cost Reduction

Smaller inductive components reduce the quantity of raw materials needed, reducing part cost.



Volume Reduction

Safely cooled higher power density components leads to lower part weight. In magnetic components, weight can be reduced up to 50% considering fixed max. temperature.



Increased Efficiency

Coolgap improves cooling system efficiency by reducing pressure drop through converter. This allows thermal engineers to use lower power consumption pumps.



Reduced core and winding losses

Both winding Rdc and core losses increase with temperature. Coolgap helps reduce temperature, so as reducing power losses.



Less quantity of thermal potting needed

Widespread current cooling solutions involve metal housings and thermal conductive potting compounds. Using Coolgap helps limiting the usage of this materials.



Improved Inductive Components

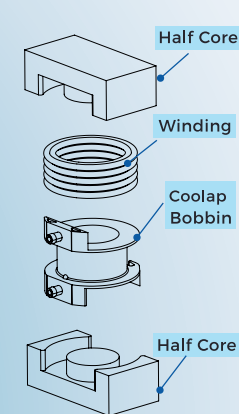
Up to 50% weight reduction



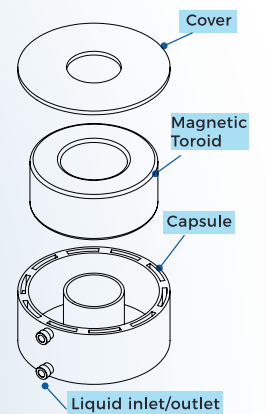
Implementation

Coolgap can be easily implemented into magnetics.

CHOKE

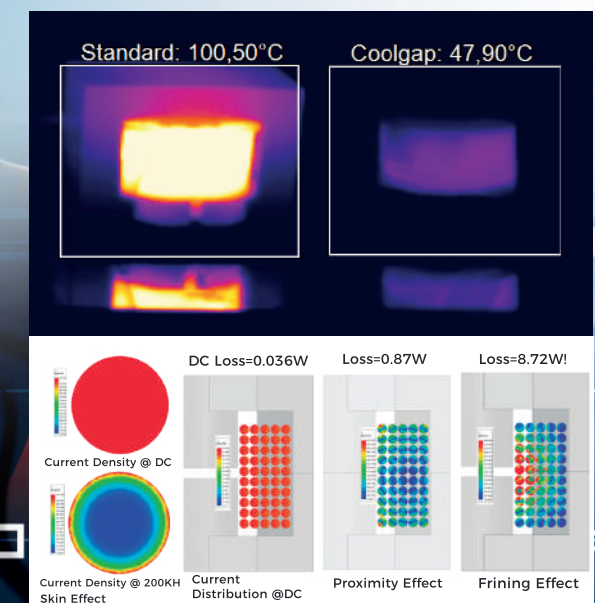


3D POWER



Extreme Temperature Reduction

A fully tested solution that can reduce up to 100°C under the same working conditions.



✓ A Cooling Breakthrough

