Höganäs

# Somaloy® Technology for Power Electronics

By delivering reduced losses and improved saturation induction, the Somaloy i-series set a new standard for iron powder cores aimed at inductive components.

Somaloy provides a competitive alternative in applications that previously were restricted to laminated electro steel components. The component-shaping process and 3D-properties offer greater design freedom. Therefore, Somaloy inductor solutions can be optimised and integrated to a greater extent in the specific application. Modular or segmented Somaloy solutions also offer efficient manufacturing and tailored performance.

**Somaloy i-series – a competitive alternative for 1 kHz and above.**

## Benefits

- Typically 50% lower losses in comparison to traditional iron powder cores
- Enables more compact solutions through greater design freedom
- Allows modular/segmented systems for cost-efficient production and tailored performance

# Recommended Materials for Power Electronics

For power electronics, Somaloy grades are available in various formulations to cover a wide range of frequency (50 Hz to 100 kHz). The press-ready mixes combined with optimised processing result in components with different performance levels. Somaloy 5P offers new opportunities in applications requiring low losses.

***PERFORMANCE LEVEL***

**1P** *Baseline*

**5P** *Lowest losses*

## Typical Data

| Somaloy Material | Frequency range | Resistivity [μΩ.m] | B@4000 A/m [T] | Core Losses* [W/kg] | | |
|---|---|---|---|---|---|---|
| | | | | 1T / 100 Hz | 0.1T / 10 kHz | 0.1T / 30 kHz |
| **Baseline** | | | | | | |
| 1P Somaloy 700 HR | 50 Hz - 2 kHz | 1000 | 1.24 | 10 | 44 | - |
| 1P Somaloy 130i | 1 - 20 kHz | 8000 | 1.06 | 12 | 27 | 110 |
| 1P Somaloy 110i | 10 - 100 kHZ | 7600 | 0.93 | 15 | 26 | 85 |
| **Lowest losses** | | | | | | |
| 5P** Somaloy 700 HR | 50 Hz - 2 kHz | 700 | 1.33 | 6 | 31 | - |
| 5P** Somaloy 130i | 1 - 20 kHz | 12000 | 1.10 | 8 | 24 | 107 |
| 5P** Somaloy 110i | 10 - 100 kHZ | 10000 | 0.95 | 10 | 18 | 72 |

** Magnetic properties measured on toroids (OD 55 ID 45 H 5 mm).*

*** Limited market release. Contact Höganäs.*