PRODUCT DATASHEET

1K107 High-permeability Nanocrystalline Ribbon: The Ultimate High-Frequency Alternative to Ferrite

Fe-based soft magnetic alloy

DG Focus Technology Co., Ltd. · Source page: product-1k107-ribbon.html · Compiled 24 September 2026. Values are copied from that page.

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A premium Fe-based soft magnetic alloy with ultra-fine grain structure (10-20nm). Engineered for high permeability and near-zero magnetostriction, achieving a 50% volume reduction compared to Ferrite, as published on the product page.

Material properties published for 1K107

Parameter	Published value
Material	Fe-based soft magnetic alloy
Grain structure	10-20 nm
Saturation induction (Bs)	1.2 T
Initial permeability (μi)	> 80,000
Ribbon thickness	12-26 μm
Curie temperature (Tc)	570°C
Operating temperature range	-40°C to +180°C
Core loss	P(100kHz/0.3T) < 50 W/kg
Magnetostriction	Near-zero (no numeric λs on this page)
EMI suppression	Wideband (10kHz-120MHz)
Volume / weight vs. ferrite	50% reduction, as published on the page

Comparison copied from the product page

The product page prints this comparison. The ferrite column is reproduced as published. No further competitor data has been added.

Parameter	Nanocrystalline 1K107	Mn-Zn Ferrite
Saturation induction (Bs)	1.2 T	0.4-0.5 T
Initial permeability (μi)	> 80,000	~10,000
Operating temp range	-40°C to +180°C	-40°C to +120°C (Unstable)
Curie temp (Tc)	570°C	< 250°C
Volume/weight	50% reduction	Baseline
EMI suppression	Wideband (10kHz-120MHz)	Narrowband

Advantage labels printed beside the 1K107 column on the page: 3x Higher, 8x Higher, Stable, 2.3x Higher, Compact, Superior.

Applications

As published on the product page:

- EV/PHEV systems: onboard chargers (OBC) and DC-DC converters
- Solar inverters: high-frequency power conversion in photovoltaic systems

- SST applications: solid state transformers
- Medical devices: MRI systems and medical imaging equipment

Published notes

- The page also describes ultra-low core losses at high frequencies, near-zero magnetostriction for silent operation, thermal stability up to 180°C, and wideband EMI suppression.
- The page states a 50% volume reduction compared with ferrite and that 50% smaller magnetic components reduce system energy consumption and material usage.
- Ribbon is described as suitable for demanding automotive and industrial applications. No alloy percentage composition is published.

Not published on this product page. These items are omitted rather than estimated:
• Ribbon width, slit widths, and coil or spool lengths are not published on this page.
• Density, resistivity, a numeric magnetostriction coefficient, and loss curves beyond the single P(100kHz/0.3T) < 50 W/kg statement are not published on this page.
• No standard part-number table is published on this page.

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