



Advanced Nanocrystalline Cores for High Frequency Applications

Nanocrystalline cores are used in more new applications than any other core material. The use of nanocrystalline cores for high-frequency applications have historically been associated with high material costs and narrow core widths. This has led many designers to sacrifice performance to appease budgetary concerns. However, this has changed due to the release of a new domestically produced nanocrystalline material called Finemet® FT-3W. This newly developed source of material has allowed us to offer DFARS compliant, large stacked, and even larger unstacked cores up to 5.6".



The positive feedback MK Magnetics, Inc. received from our customers was immediate. Our combination of new materials and manufacturing processes exceeded all expectations for performance and allowed customers to penetrate and compete in markets that had previously been unavailable due to core costs.

As with all of our products, our nanocrystalline cores are a custom product, and available to meet specific design requirements. Our manufacturing processes utilize a specialized annealing system that is controlled based on design frequency. Cores' profiles can be configured in C, E, Toroid, bars, and more as well as sizes such as standard AMCC, as single, unstacked, or custom sizes. They can also be manufactured with multiple cuts to reduce fringing losses if needed or configured for machining to fit custom applications. As a customer centric manufacturer, we offer a high degree of engineering support and are geared for flexible manufacturing volumes, from a single prototype or proof of concept, up to large scale mass production. For more information on MK Magnetics, Inc. nanocrystalline cores, [contact](#) us directly.

Advanced Nanocrystalline Cores Case Study Highlights

Project Name & Description	Developed processes to utilize newly available domestically supplied lower cost, wide width Nanocrystalline (Finemet® FT-3W). Other nanocrystalline materials available: Finemet® FT3 (Finemet® FT3 is a registered trademark of Hitachi Metals), Vitroperm800® (Vitroperm800® is a registered trademark of Vacuumschmelze).
Capabilities Applied/Processes	<ul style="list-style-type: none"> • Custom computer-controlled annealing and atmospheric conditions for optimal annealing of our cores • Superior bonding and cutting technology. Large sized processing equipment
Overall Part Dimensions	Large core sizes available up to approx. 84"
Material Used	Nanocrystalline (Finemet® FT-3W) Metglas Finemet® FT3-W is a registered trademark of Metglas Inc
Industry for Use	Widest scope of industries for any material
In Process Testing/Inspection Performed	Core loss and other magnetic testing as required
Volume	From prototypes to mass production
Delivery/Turnaround Time	Typical 3-5 weeks delivery with expedites available
Delivery Location	Worldwide