

PRODUCT DATASHEET

Nanocrystalline Toroidal Core

Ultra-Thin Ribbon (12-20µm) Magnetic Solutions for High-Frequency Electromagnetic Applications

DG Focus Technology Co., Ltd. · Source page: product-nanocrystalline-toroidal-core.html · Compiled 24 September 2026. Values are copied from that page.

Custom sizes and windings available — request a quote at [www.magcomponent.com/contact.html](http://www.magcomponent.com/contact.html)

MagComponent's nanocrystalline toroidal cores are manufactured using ultra-thin ribbon material with thickness ranging from 12 to 20 µm. This product series features excellent magnetic performance stability and is available in coating or casing packaging options, making it widely applicable in high-frequency electromagnetic environments.

Electromagnetic characteristics

Published on the product page as physical and magnetic performance:

| Parameter                        | Published value |
|----------------------------------|-----------------|
| Saturation flux density (Bs)     | 1.2 T           |
| Resistivity (ρ)                  | 100 µΩ·cm       |
| Curie temperature (Tc)           | 570°C           |
| Crystallization temperature (Tx) | 510°C           |
| Operating temperature range      | -40°C to 140°C  |
| Density                          | 7.2 g/cm³       |
| Saturation magnetostriction (λs) | 2~3             |
| Ribbon thickness                 | 12-20 µm        |

Standard product selection table

MagComponent provides a complete series of specifications from miniature to large sizes. The following are examples of some standard models:

| Model (P/N)   | Bare core (OD×ID×H) | Finished (OD×ID×H) | Ae (mm²) | AL (10kHz) |
|---------------|---------------------|--------------------|----------|------------|
| MCNT 040304   | 4.0×2.5×4.0 mm      | 4.6×2.1×4.6 mm     | 2.0      | 25 µH      |
| MCNT 161010   | 16.0×10.0×10.0 mm   | 18.6×6.7×12.2 mm   | 23.0     | 45 µH      |
| MCNT 302015   | 30.0×20.0×15.0 mm   | 32.1×18.1×16.7 mm  | 59.0     | 75 µH      |
| MCNT 504025   | 50.0×40.0×25.0 mm   | 53.5×36.3×28.5 mm  | 98.0     | 55 µH      |
| MCNT 1009030  | 100.0×90.0×30.0 mm  | 106.0×84.0×36.0 mm | 117.0    | 35 µH      |
| MCNT 14010050 | 140.0×100.0×50.0 mm | 146.0×94.5×56.0 mm | 780.0    | 180 µH     |

\* Note: Data units are mm, mm², µH respectively. Please refer to the complete catalog for detailed specifications.

Dimension parameter definitions

To ensure precise design matching, the page defines:

- OD / ID / H: core outer diameter, inner diameter, and height
- Ae: effective cross-section area
- Le: mean magnetic path length
- Aw: window area
- AL: inductance coefficient (the page says test data is provided at 10kHz and 100kHz)

Applications

As published on the product page:

- High-frequency electromagnetic environments

- High-frequency transformers, inductors, and electromagnetic applications
- Current transformers and common-mode chokes

### Published notes

- Packaging options published on the page: coating (epoxy resin) or casing (plastic or metal housing).
- FAQ on the page: cores are described as typically operating effectively from 10kHz to 500kHz, with excellent performance up to 1MHz. No separate test conditions are given for that statement.
- Customization published on the page: custom dimensions and specifications, special performance requirements, application-specific optimizations, and prototype development and testing.
- All data listed in this catalog are derived from optimally annealed samples and are provided for design reference purposes only. They do not represent the indicator guarantee for final orders.

**Not published on this product page.** These items are omitted rather than estimated:

- Initial permeability ( $\mu_i$ ) is not published on this page.
- AL at 100kHz is mentioned, but the selection table publishes AL at 10kHz only.
- Le and Aw are defined, but values are not tabulated for the listed models.
- Saturation magnetostriction is published as 2~3. The page does not state the unit.
- Core loss, coercivity, and a guaranteed permeability tolerance are not published on this page.

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