

DATA SHEET

3D3 Material specification

Supersedes data of September 2004

2008 Sep 01

Material specification

3D3

3D3 SPECIFICATIONS

A medium frequency filter and tuning material optimized for frequencies from 0.2 up to 2 MHz.

| SYMBOL | CONDITIONS | VALUE | UNIT |
|--------------------|---|--|-------------------|
| μ_i | 25 °C; ≤ 10 kHz; 0.25 mT | $750 \pm 20\%$ | |
| B | 25 °C; 10 kHz; 1200 A/m 100 °C; 10 kHz; 1200 A/m | ≈ 380 ≈ 310 | mT |
| $\tan\delta/\mu_i$ | 25 °C; 300 kHz; 0.25 mT 25 °C; 1 MHz; 0.25 mT | $\leq 10 \times 10^{-6}$ $\leq 30 \times 10^{-6}$ | |
| η_B | 25 °C; 100 kHz; 1.5 to 3 mT | $\leq 1.8 \times 10^{-3}$ | T ⁻¹ |
| D_F | 25 °C; 10 kHz; 0.25 mT | $\leq 12 \times 10^{-6}$ | |
| α_F | 25 to 70 °C; ≤ 10 kHz; 0.25 mT | $(1.5 \pm 1) \times 10^{-6}$ | K ⁻¹ |
| ρ | DC; 25 °C | ≈ 2 | Ωm |
| T_C | | ≥ 200 | °C |
| density | | ≈ 4700 | kg/m ³ |

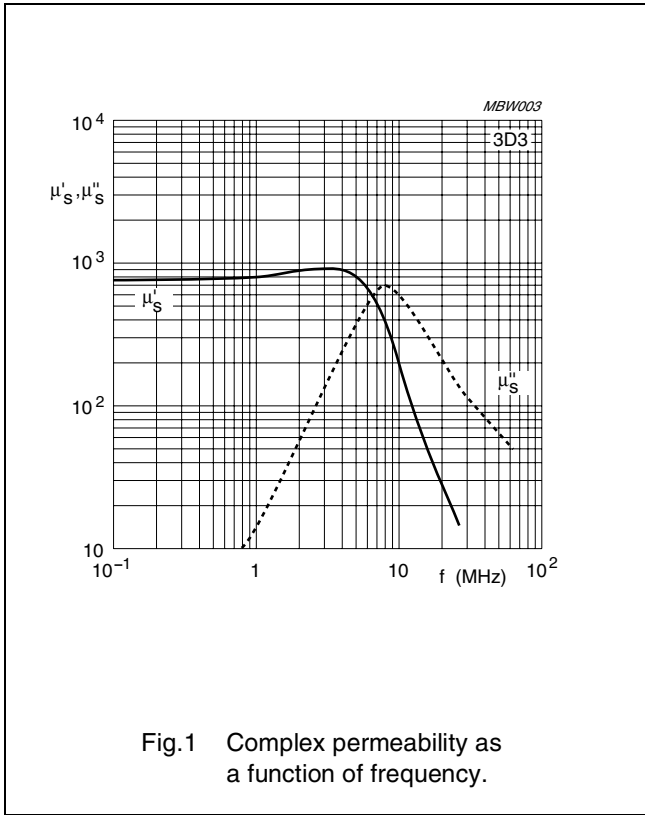


Fig.1 Complex permeability as a function of frequency.

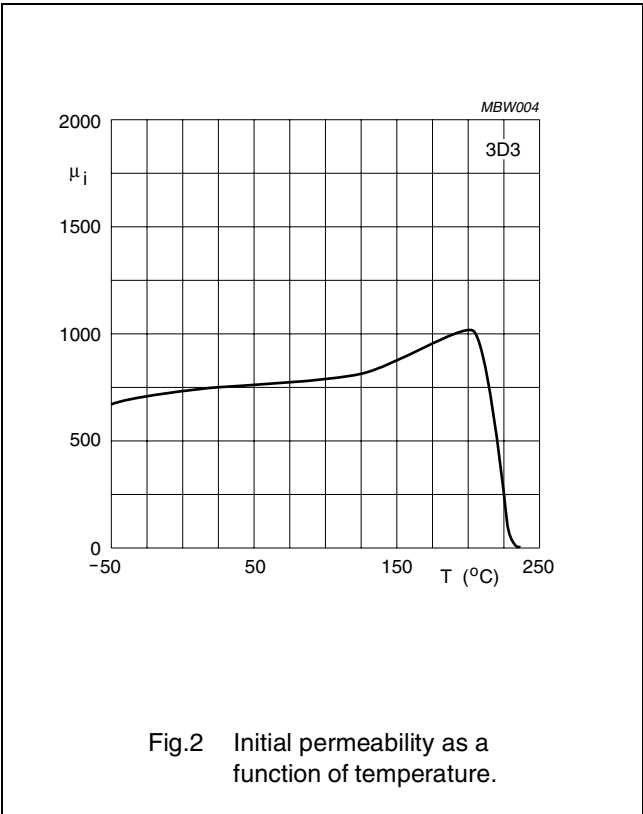


Fig.2 Initial permeability as a function of temperature.

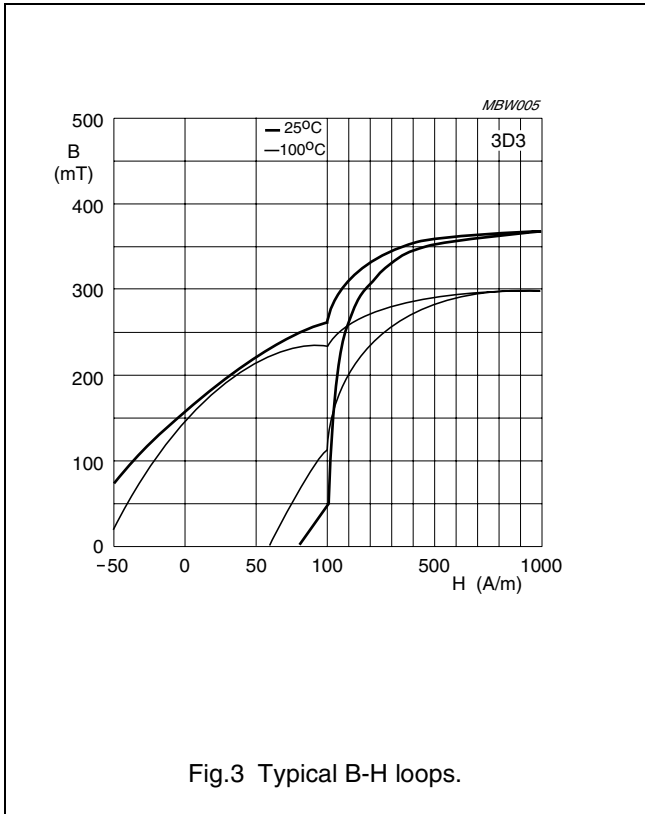
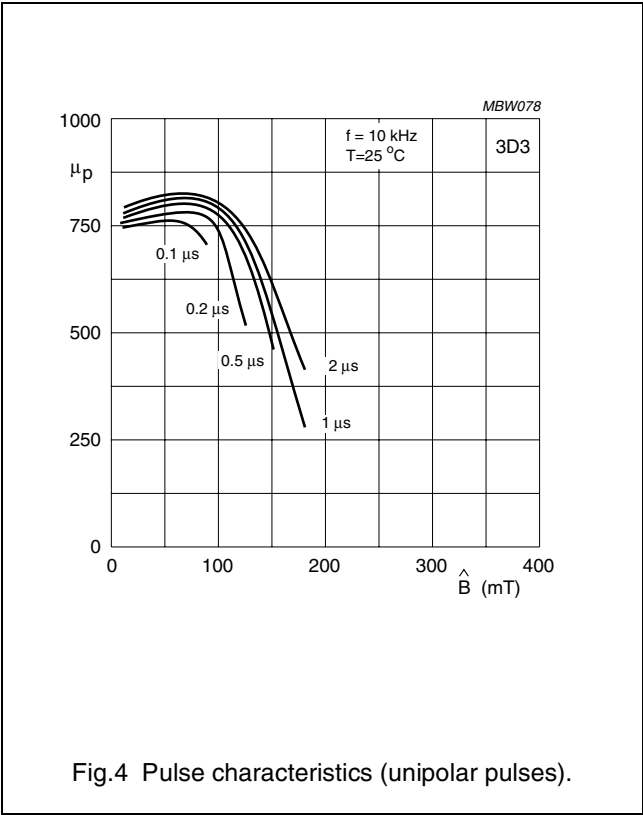


Fig.3 Typical B-H loops.



Material specification

3D3




DATA SHEET STATUS DEFINITIONS

| DATA SHEET STATUS | PRODUCT STATUS | DEFINITIONS |
|---------------------------|----------------|--|
| Preliminary specification | Development | This data sheet contains preliminary data. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |
| Product specification | Production | This data sheet contains final specifications. Ferroxcube reserves the right to make changes at any time without notice in order to improve design and supply the best possible product. |

DISCLAIMER

Life support applications — These products are not designed for use in life support appliances, devices, or systems where malfunction of these products can reasonably be expected to result in personal injury. Ferroxcube customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Ferroxcube for any damages resulting from such application.

PRODUCT STATUS DEFINITIONS

| STATUS | INDICATION | DEFINITION |
|------------------|---|--|
| Prototype |  | These are products that have been made as development samples for the purposes of technical evaluation only. The data for these types is provisional and is subject to change. |
| Design-in |  | These products are recommended for new designs. |
| Preferred | | These products are recommended for use in current designs and are available via our sales channels. |
| Support |  | These products are not recommended for new designs and may not be available through all of our sales channels. Customers are advised to check for availability. |