

DATA SHEET

3E12 Material specification

2016 May 16

3E12 SPECIFICATIONS

A high permeability material optimized for use in wideband transformers as well as EMI-suppression filters.

| SYMBOL | CONDITIONS | VALUE | UNIT |
|--------------------|---|---|-------------------|
| μ_i | 25 °C; ≤ 10 kHz; 0.25 mT | $12000 \pm 30\%$ | |
| B | 25 °C; 10 kHz; 1200 A/m 100 °C; 10 kHz; 1200 A/m | ≈ 470 ≈ 290 | mT |
| $\tan\delta/\mu_i$ | 25 °C; 30 kHz; 0.25 mT 25 °C; 100 kHz; 0.25 mT | $\leq 7 \times 10^{-6}$ $\leq 25 \times 10^{-6}$ | |
| η_B | 25 °C; 10 kHz; 1.5 to 3 mT | $\leq 0.5 \times 10^{-3}$ | T ⁻¹ |
| ρ | DC; 25 °C | ≈ 0.5 | Ωm |
| T_C | | ≥ 130 | °C |
| density | | ≈ 5000 | kg/m ³ |

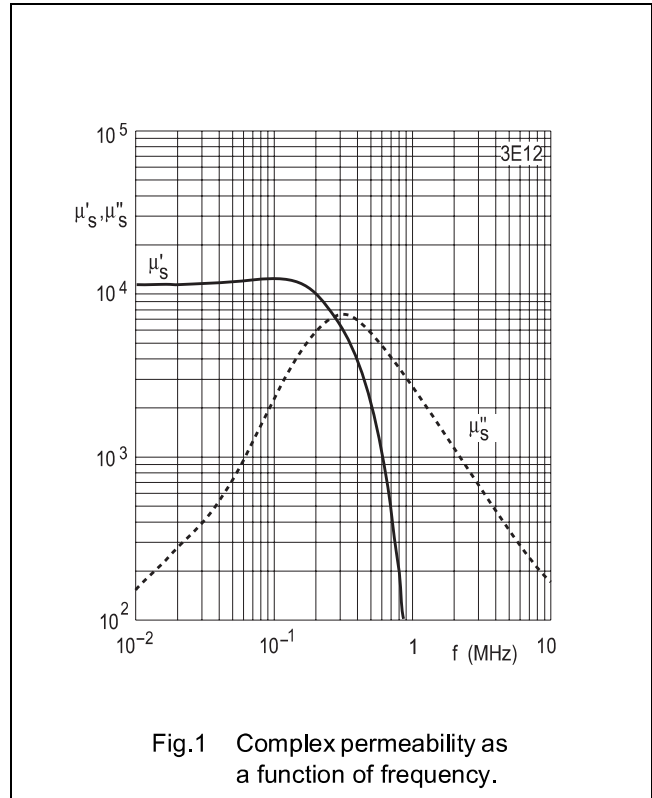


Fig.1 Complex permeability as a function of frequency.

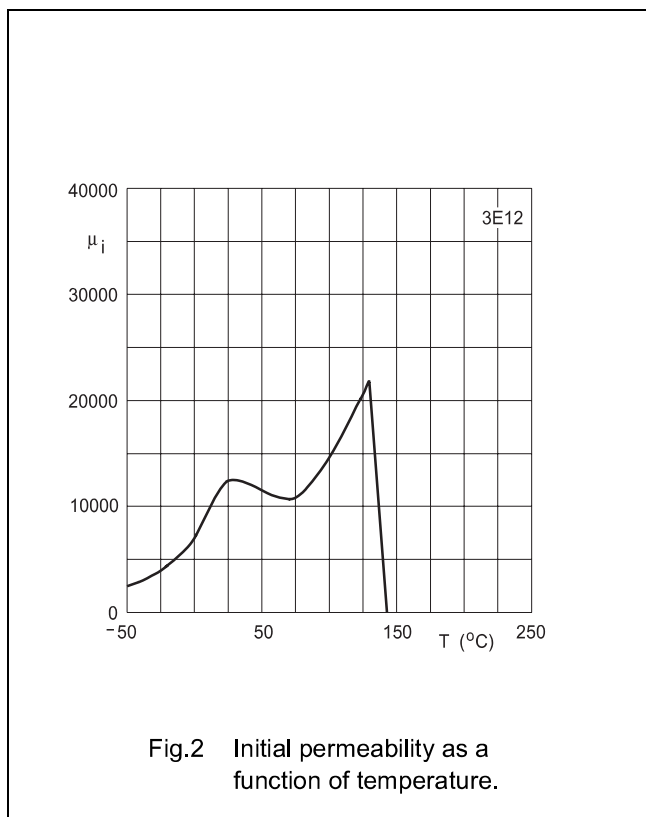


Fig.2 Initial permeability as a function of temperature.

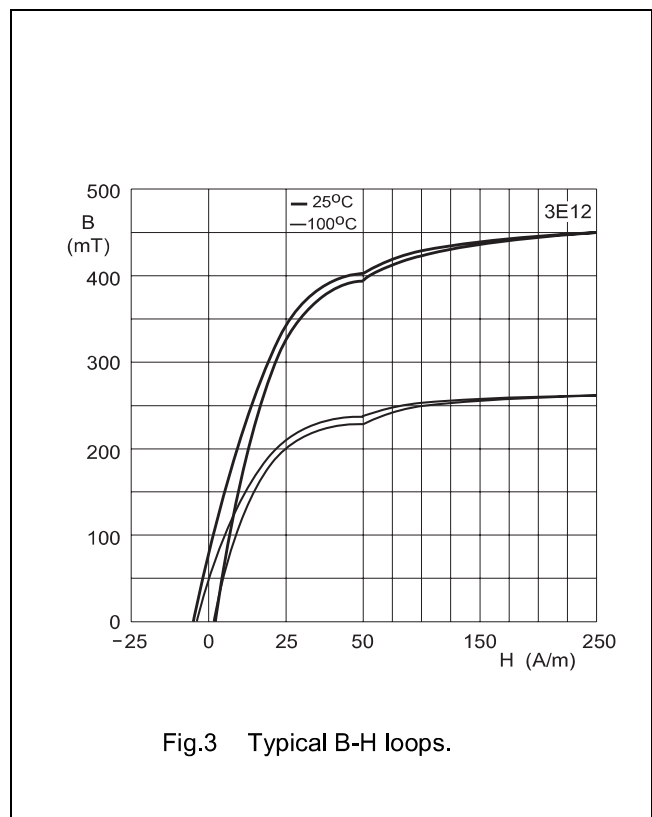


Fig.3 Typical B-H loops.

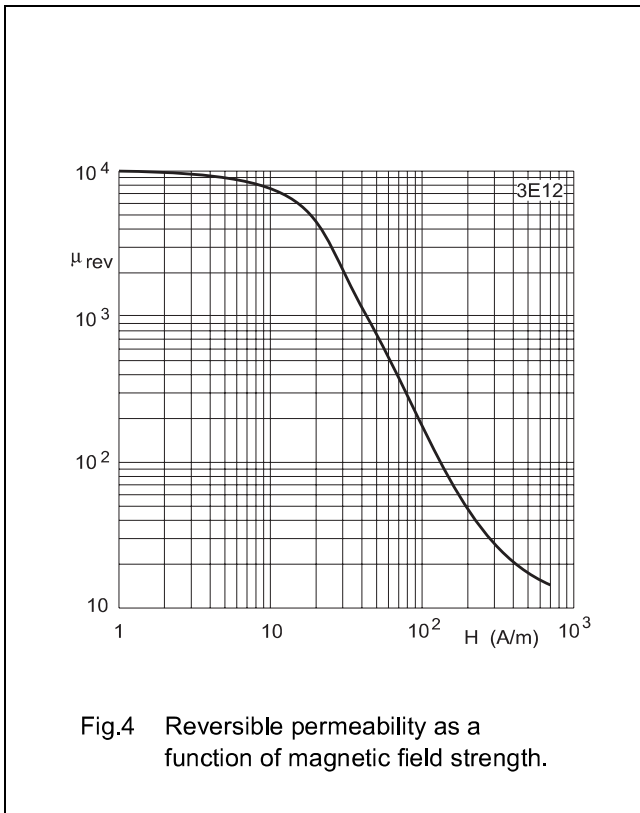


Fig.4 Reversible permeability as a function of magnetic field strength.

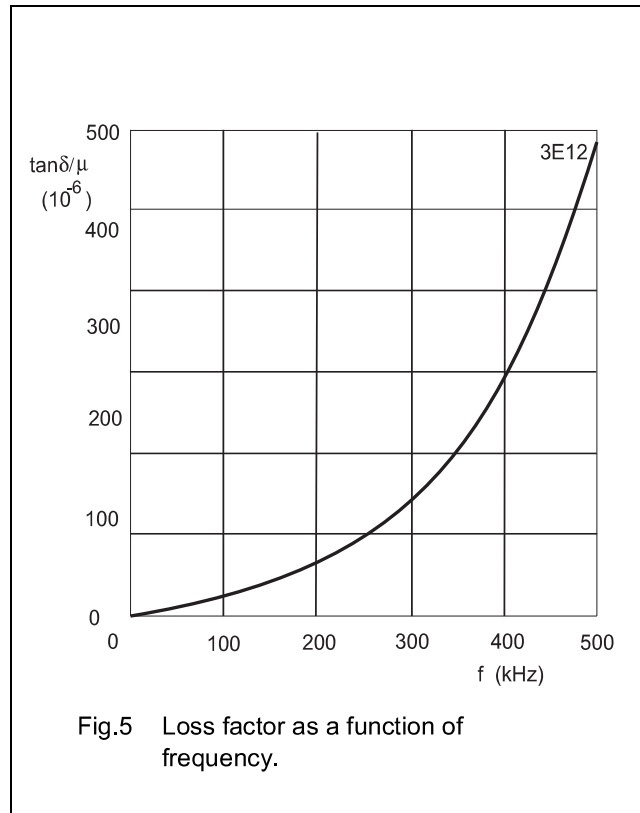


Fig.5 Loss factor as a function of frequency.

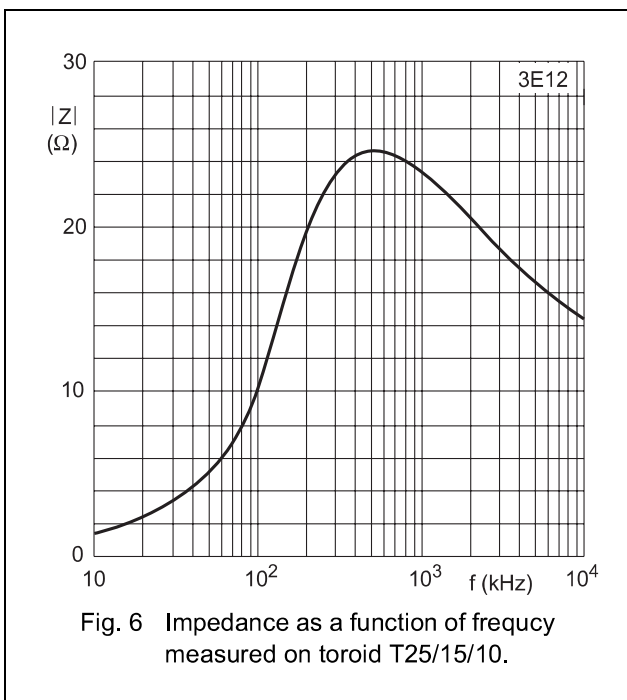


Fig. 6 Impedance as a function of frequency measured on toroid T25/15/10.




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. |

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| STATUS | INDICATION | DEFINITION |
|------------------|---|--|
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