

DATA SHEET

3E12

Material specification

2013 July 05

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	$12\,000 \pm 20\%$	
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

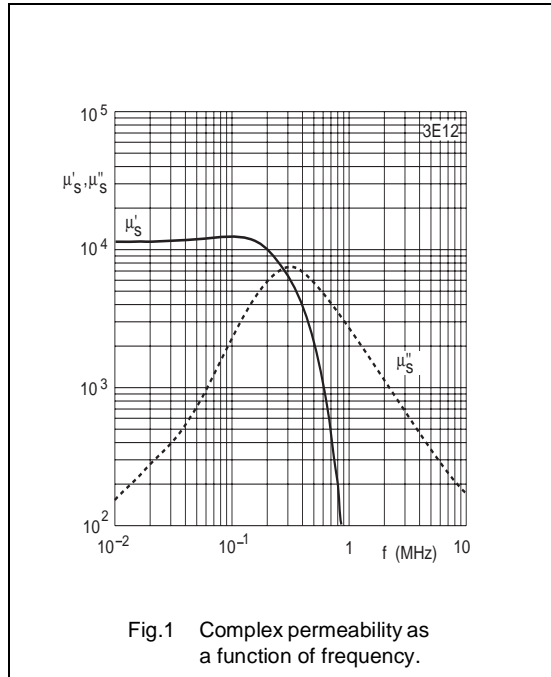


Fig.1 Complex permeability as a function of frequency.

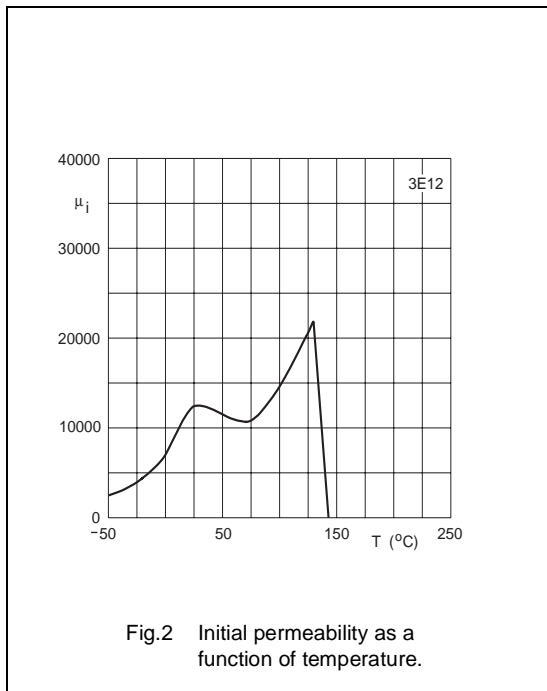


Fig.2 Initial permeability as a function of temperature.

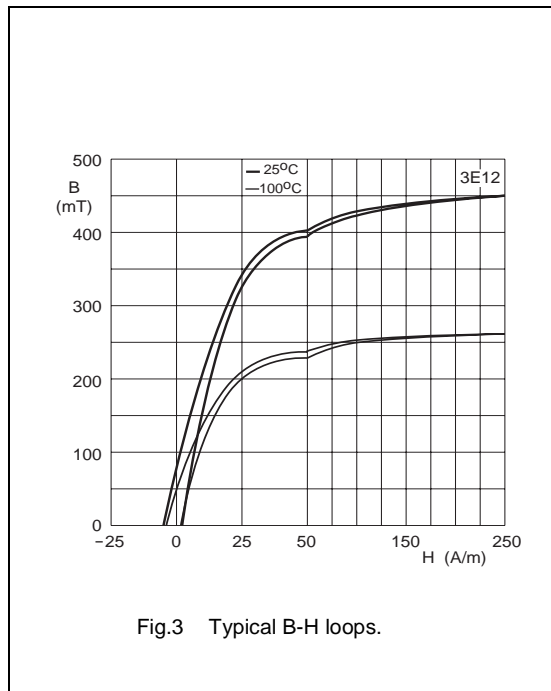


Fig.3 Typical B-H loops.

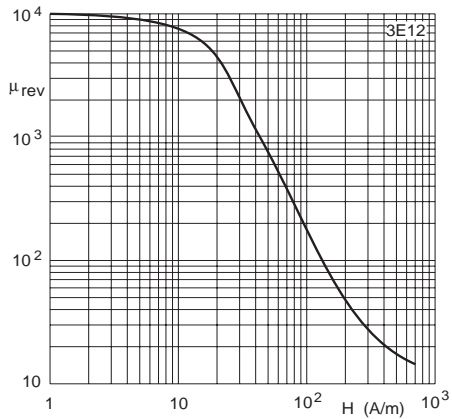


Fig.4 Reversible permeability as a function of magnetic field strength.

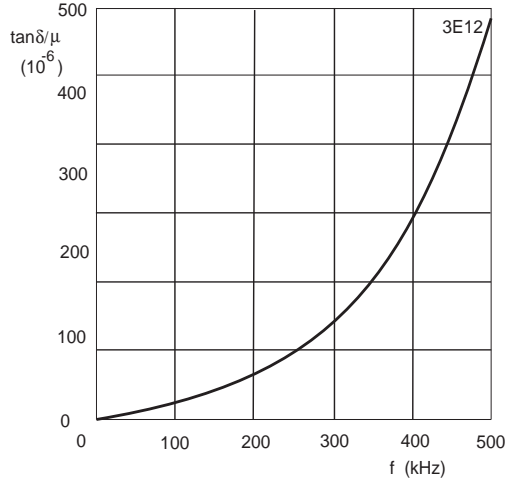


Fig.5 Loss factor as a function of frequency.

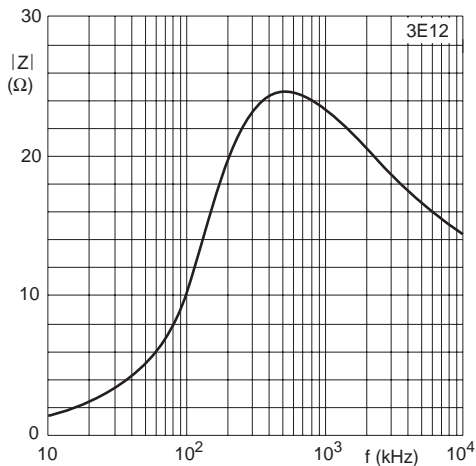


Fig. 6 Impedance as a function of frequency measured on toroid T25/15/10.




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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PRODUCT STATUS DEFINITIONS

STATUS	INDICATION	DEFINITION
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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.