

# DATA SHEET

## **3E5** Material specification

Supersedes data of September 2004

2008 Sep 01

Material specification

3E5

3E5 SPECIFICATIONS

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

SYMBOL	CONDITIONS	VALUE	UNIT
$\mu_i$	25 °C; $\leq 10$ kHz; 0.25 mT	$10000 \pm 20\%$	
B	25 °C; 10 kHz; 1200 A/m 100 °C; 10 kHz; 1200 A/m	$\approx 380$ $\approx 230$	mT
$\tan\delta/\mu_i$	25 °C; 30 kHz; 0.25 mT 25 °C; 100 kHz; 0.25 mT	$\leq 25 \times 10^{-6}$ $\leq 75 \times 10^{-6}$	
$\eta_B$	25 °C; 10 kHz; 1.5 to 3 mT	$\leq 1 \times 10^{-3}$	T <sup>-1</sup>
$\rho$	DC; 25 °C	$\approx 0.5$	$\Omega\text{m}$
$T_C$		$\geq 125$	°C
density		$\approx 4900$	kg/m <sup>3</sup>

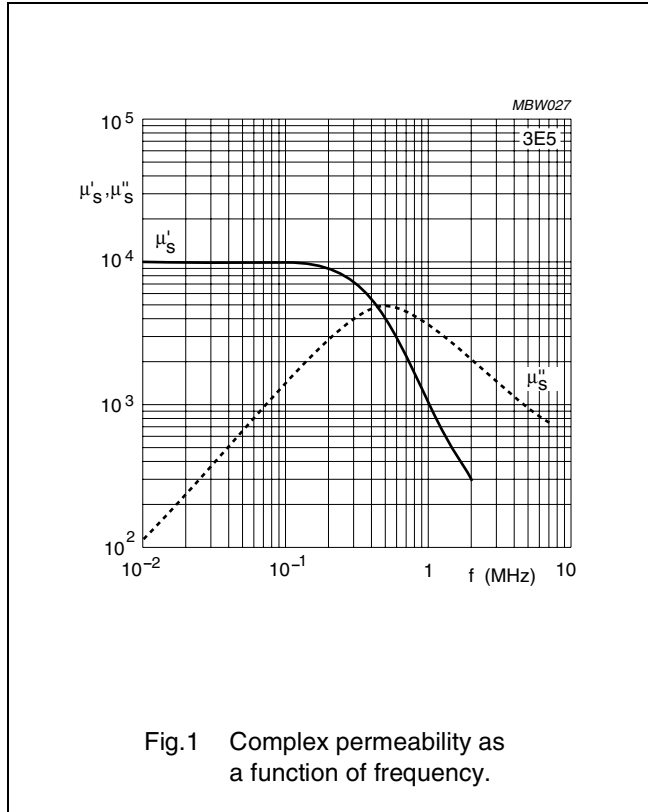


Fig.1 Complex permeability as a function of frequency.

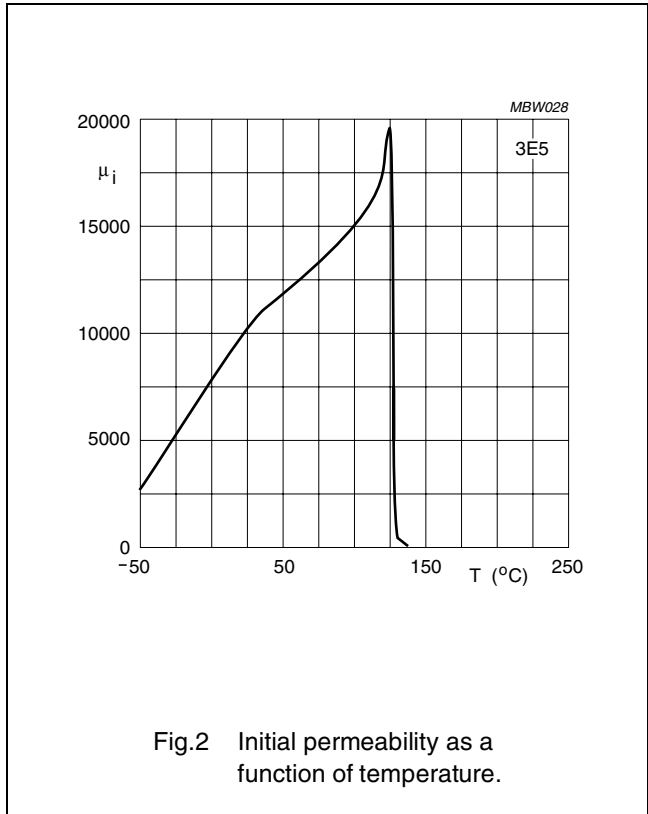


Fig.2 Initial permeability as a function of temperature.

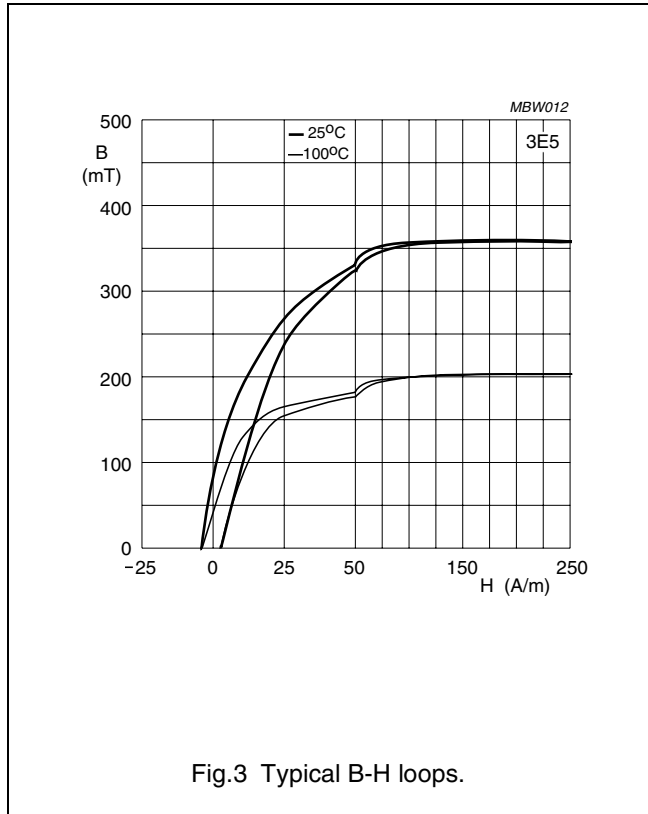


Fig.3 Typical B-H loops.

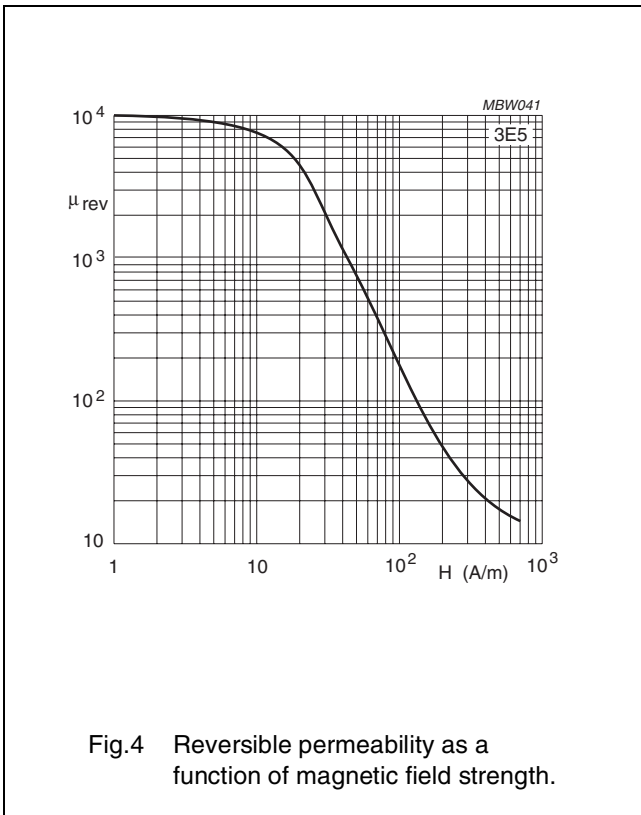


Fig.4 Reversible permeability as a function of magnetic field strength.

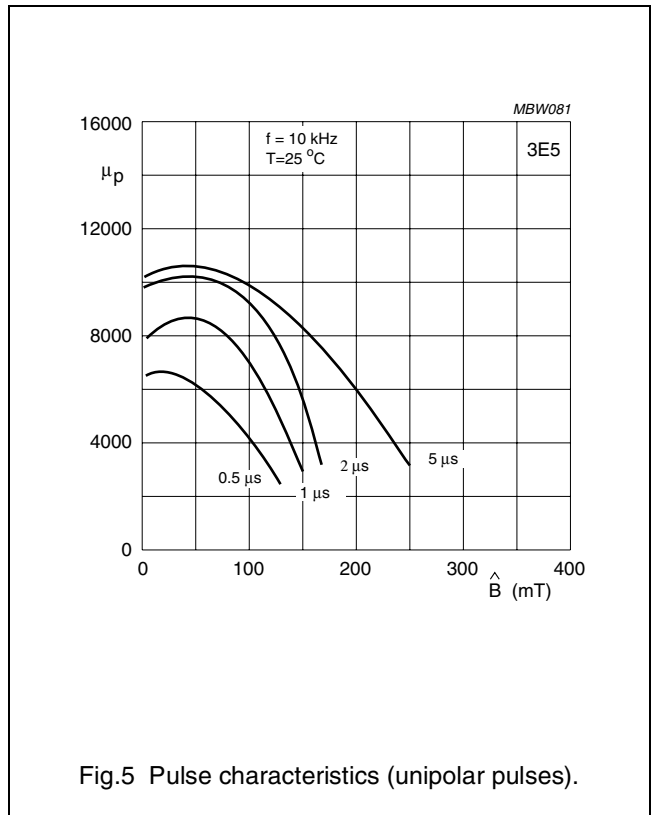


Fig.5 Pulse characteristics (unipolar pulses).




**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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