

# DATA SHEET

**3E9**

**Material specification**

Supersedes data of September 2004

2008 Sep 01

3E9 SPECIFICATIONS

A high permeability material optimized for small toroids used in miniaturized wideband transformers and delay lines.

	CONDITIONS	VALUE <sup>(1)</sup>	UNIT
$\mu_i$	25 °C; $\leq 10$ kHz; 0.25 mT	$20000 \pm 20\%$	
B	25 °C; 10 kHz; 1200 A/m	$\approx 380$	mT
	80 °C; 10 kHz; 1200 A/m	$\approx 210$	
$\tan\delta/\mu_i$	25 °C; 10 kHz; 0.25 mT	$\leq 10 \times 10^{-6}$	
	25 °C; 30 kHz; 0.25 mT	$\leq 50 \times 10^{-6}$	
$\eta_B$	25 °C; 10 kHz; 1.5 to 3 mT	$\leq 1 \times 10^{-3}$	T <sup>-1</sup>
$\rho$	DC; 25 °C	$\approx 0.1$	$\Omega\text{m}$
$T_C$		$\geq 100$	°C
density		$\approx 5000$	kg/m <sup>3</sup>

Note

1. Measured on sintered, non-ground ring cores of dimensions  $\varnothing 14 \times \varnothing 9 \times 5$  which are not subjected to external stresses.

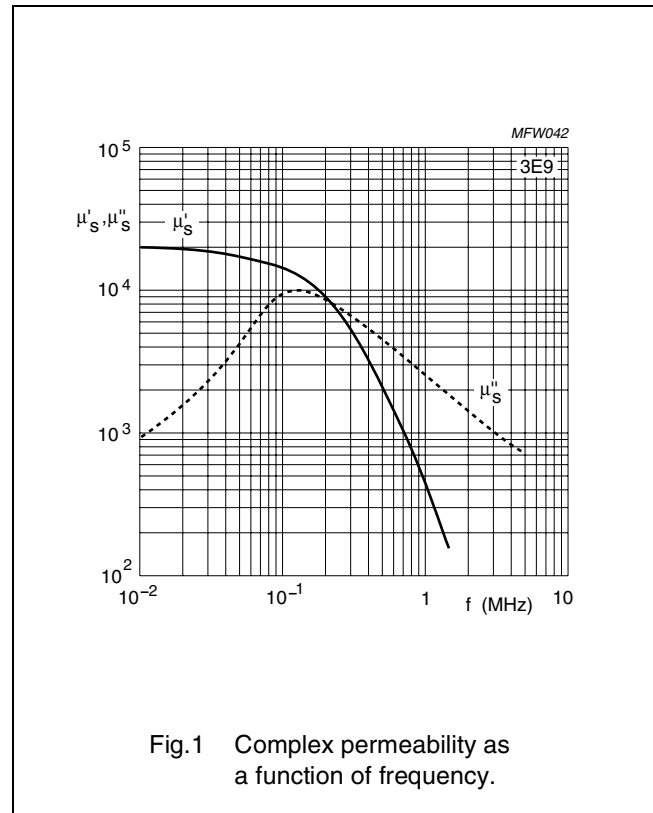


Fig.1 Complex permeability as a function of frequency.

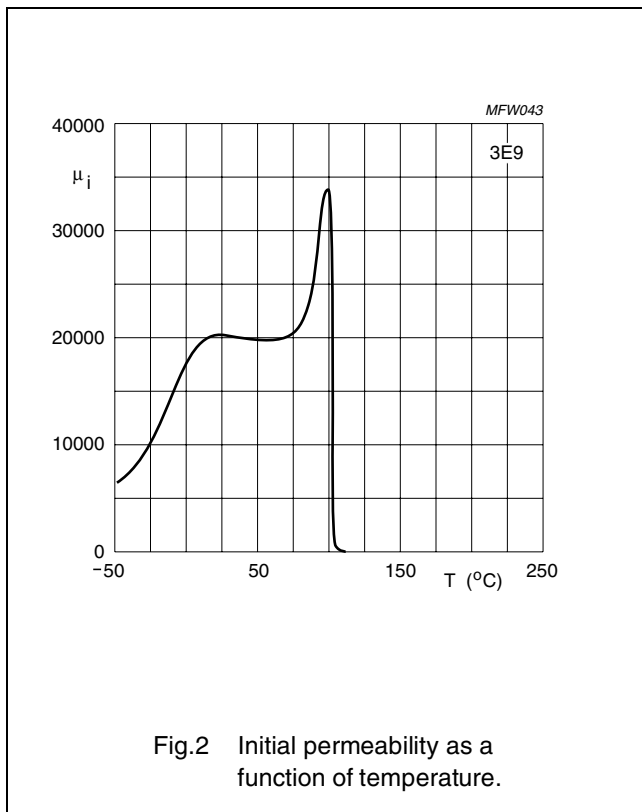


Fig.2 Initial permeability as a function of temperature.

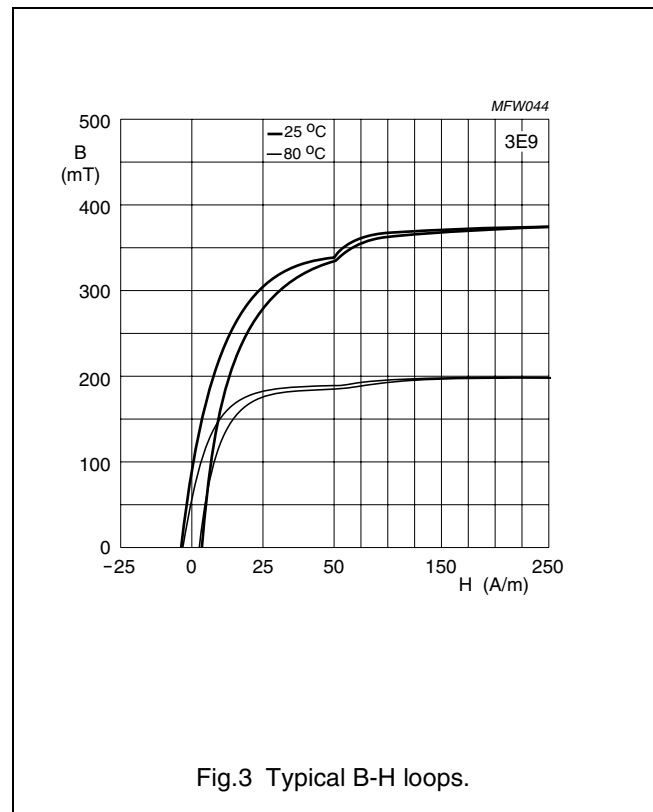
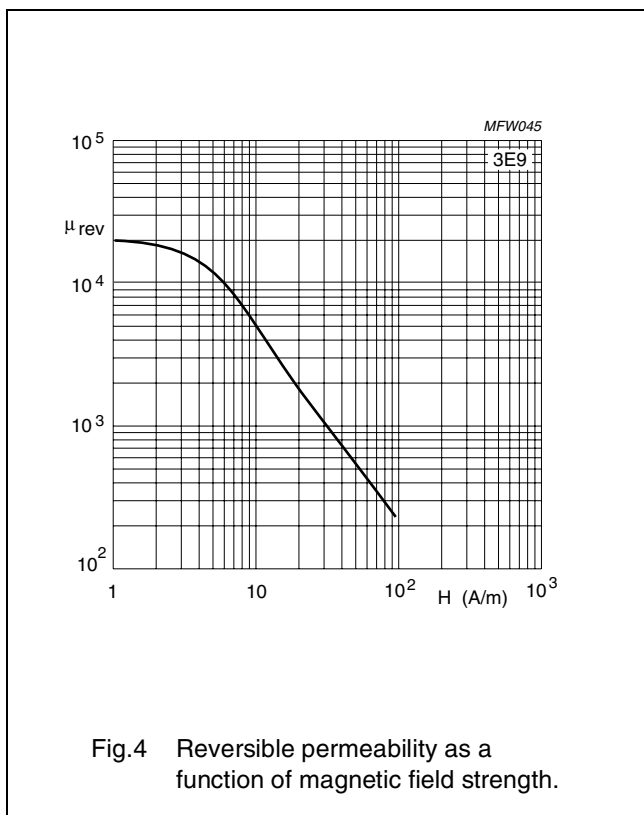


Fig.3 Typical B-H loops.






**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**

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