

# DATA SHEET

**3E8**

Material specification

Supersedes data of September 2004

2008 Sep 01



**FERROXCUBE**  
A YAGEO COMPANY

**3E8 SPECIFICATIONS**

A high permeability material optimized for use in wideband transformers and delay lines where small size or a low number of turns are important design parameters.

|                    | CONDITIONS                    | VALUE <sup>(1)</sup>     | UNIT              |
|--------------------|-------------------------------|--------------------------|-------------------|
| $\mu_i$            | 25 °C; $\leq 10$ kHz; 0.25 mT | 18000 $\pm$ 20%          |                   |
| B                  | 25 °C; 10 kHz;<br>1200 A/m    | $\approx 380$            | mT                |
|                    | 80 °C; 10 kHz;<br>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        | $\leq 30 \times 10^{-6}$ |                   |
| $\eta_B$           | 25 °C; 10 kHz;<br>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.

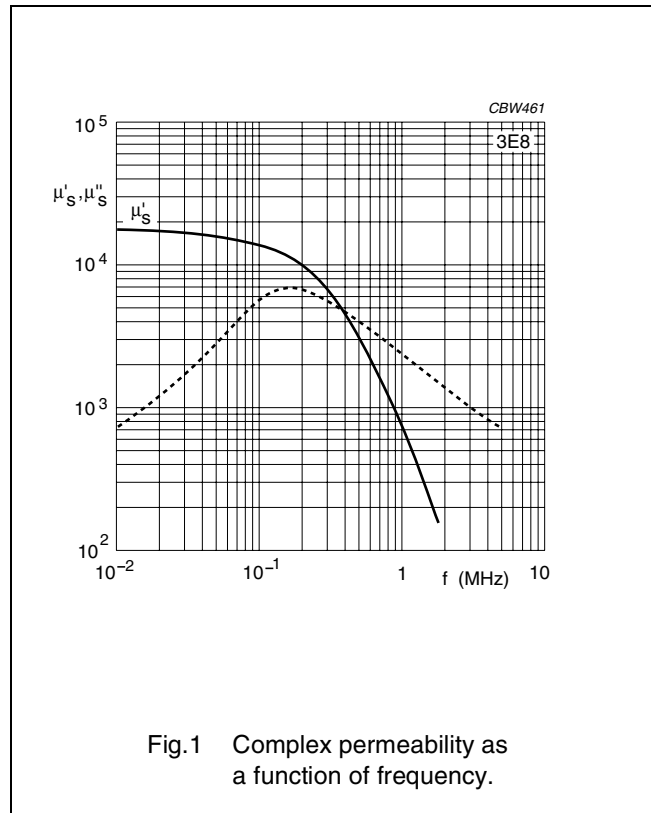


Fig.1 Complex permeability as a function of frequency.

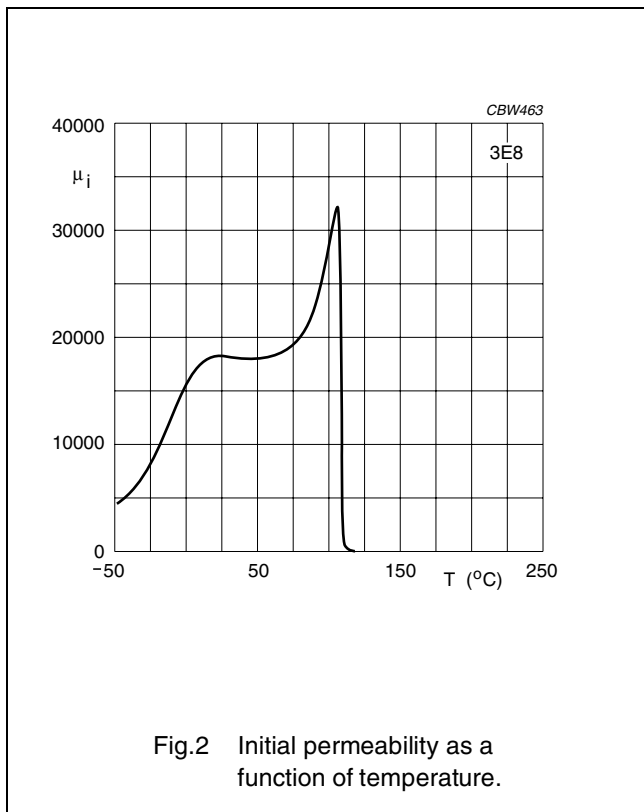


Fig.2 Initial permeability as a function of temperature.

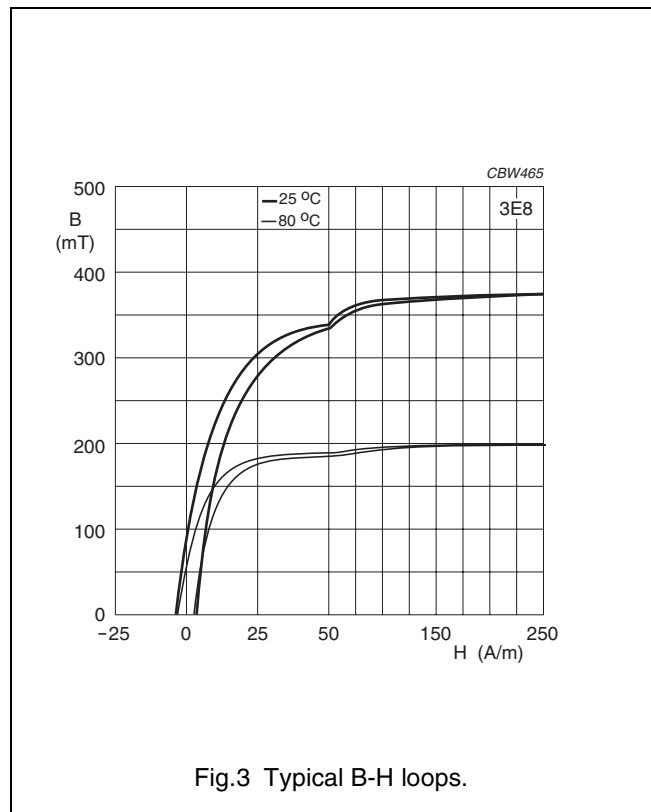
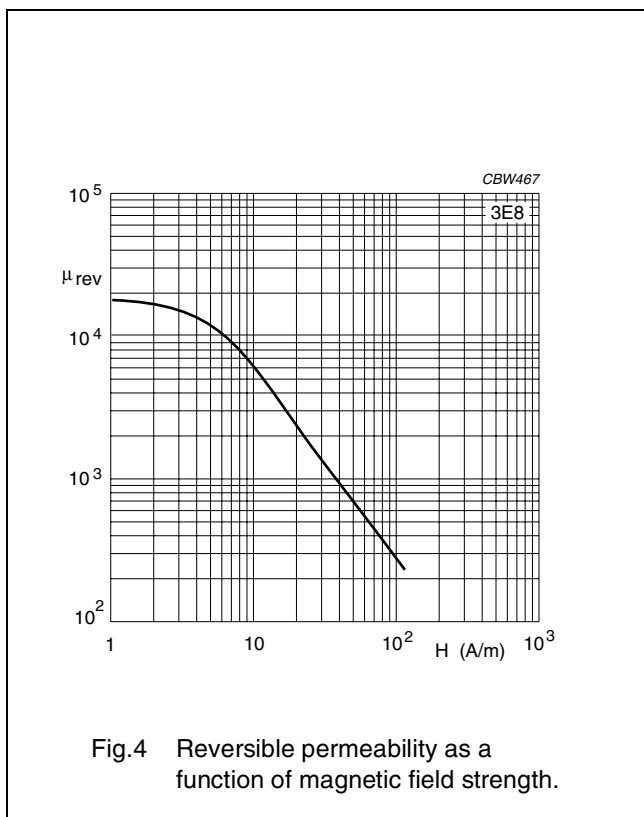


Fig.3 Typical B-H loops.



**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**

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