# DATA SHEET

## E13/6/3
E cores and accessories

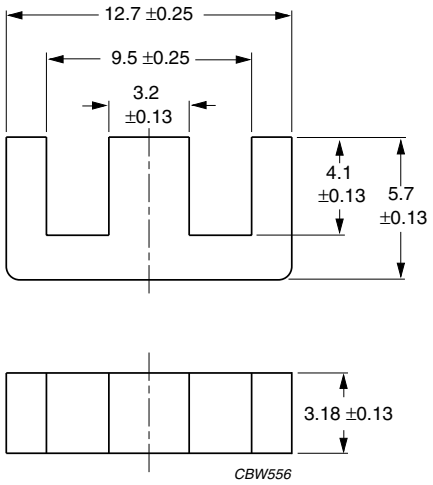
Supersedes data of September 2004 2008 Sep 01

FERROXCUBE
A YAGEO COMPANY

## CORE SETS

### Effective core parameters

| SYMBOL | PARAMETER | VALUE | UNIT |
|---|---|---|---|
| $\Sigma(l/A)$ | core factor (C1) | 2.74 | $mm^{-1}$ |
| $V_e$ | effective volume | 281 | $mm^3$ |
| $l_e$ | effective length | 27.8 | mm |
| $A_e$ | effective area | 10.1 | $mm^2$ |
| $A_{min}$ | minimum area | 10.1 | $mm^2$ |
| m | mass of core half | ≈ 0.7 | g |




Dimensions in mm.

Fig.1 E13/6/3 core half.

### Core halves

$A_L$ measured in combination with a non-gapped core half, clamping force for $A_L$ measurements, 8 ±4 N.

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP (μm) | TYPE NUMBER |
|---|---|---|---|---|
| 3C90 | 63 ±5% | ≈138 | ≈ 250 | E13/6/3-3C90-A63 |
| | 100 ±8% | ≈ 219 | ≈140 | E13/6/3-3C90-A100 |
| | 160 ±8% | ≈ 350 | ≈ 75 | E13/6/3-3C90-A160 |
| | 250 ±20% | ≈ 548 | ≈ 40 | E13/6/3-3C90-A250 |
| | 315 ±20% | ≈ 690 | ≈ 30 | E13/6/3-3C90-A315 |
| | 730 ±25% | ≈1590 | ≈ 0 | E13/6/3-3C90 |
| 3C92 des | 540 ±25% | ≈1180 | ≈ 0 | E13/6/3-3C92 |
| 3C94 | 730 ±25% | ≈1590 | ≈ 0 | E13/6/3-3C94 |
| 3C96 des | 660 ±25% | ≈1440 | ≈ 0 | E13/6/3-3C96 |

### Core halves of high permeability grades

$A_L$ measured in combination with an non-gapped core half, clamping force for $A_L$ measurements, 8 ±4 N.

| GRADE | $A_L$ (nH) | $\mu_e$ | AIR GAP (μm) | TYPE NUMBER |
|---|---|---|---|---|
| 3E27 | 1300 ±25% | ≈ 2830 | ≈ 0 | E13/6/3-3E27 |

**Properties of core sets under power conditions**

| GRADE | B (mT) at | CORE LOSS (W) at | | | |
|---|---|---|---|---|---|
| | H = 250 A/m; f = 25 kHz; T = 100 °C | f = 25 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ = 100 mT; T = 100 °C | f = 100 kHz; $\hat{B}$ = 200 mT; T = 100 °C | f = 500 kHz; $\hat{B}$ = 50 mT; T = 100 °C |
| 3C90 | ≥ 320 | ≤ 0.03 | ≤ 0.03 | – | – |
| 3C92 | ≥ 370 | – | ≤ 0.022 | ≤ 0.16 | – |
| 3C94 | ≥ 320 | – | ≤ 0.024 | ≤ 0.15 | – |
| 3C96 | ≥ 340 | – | ≤ 0.019 | ≤ 0.13 | ≤ 0.11 |

**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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| **Design-in** | des | These products are recommended for new designs. |
| **Preferred** | | These products are recommended for use in current designs and are available via our sales channels. |
| **Support** | sup | 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. |